DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172, 173, 174, 176, 177

[Docket Nos. HM-118, 126A, 126B, 145A, 145B, 159, and 171; Amdt. Nos. 171-53, 172-58, 173-137, 174-37, 176-11, 177-48]

Identification Numbers, Hazardous Wastes, Hazardous Substances, International Descriptions, Improved Descriptions, Forbidden Materials, and Organic Peroxides

AGENCY: Materials Transportation Bureau (MTB), Research and Special Programs Administration, Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The purpose of this final rule is to accomplish the following: (1) adopt a numerical identification system for hazardous materials transported in commerce; (2) adopt regulations pertaining to the transportation of hazardous wastes; (3) adopt regulations pertaining to the identification of, and discharge notifications for, hazardous substances; (4) list certain forbidden materials by name and revise the general criteria applicable to forbidden materials; (5) provide proper shipping names for organic peroxides; (6) require inclusion on shipping papers of the technical names of certain hazardous components of materials covered by n.o.s. entries; and (7) provide for the optional use of certain United Nations shipping descriptions. The principal objective of this rule, as it pertains to the use of the identification numbers, is to improve the capabilities of emergency response personnel, such as firemen and policemen, to quickly identify hazardous materials and to assure the accurate transmission of information to and from the scenes of accidents involving hazardous materials.

EFFECTIVE DATE: November 20, 1980, unless otherwise specified in the regulations adopted under this rulemaking. Shipments may be prepared, offered for transportation, and transported in accordance with these amendments beginning July 1, 1980.

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SUPPLEMENTARY INFORMATION: This action by the Materials Transportation Bureau (MTB) consolidates several related rulemakings into one final rule. By "related", MTB means that in many instances, the same sections of the Hazardous Materials Regulations are affected by the different rulemakings covered by this final rule. The notices of rulemakings containing the proposals, identified by docket number, Federal Register publication, date of publication and title are as follows:

1. Docket HM-118, Notice No. 74-9 (39 FR 25235, July 9, 1974), Expanded Polystyrene Resin and the Definition of a Flammable Solid.
2. Docket HM-145A, Notice No. 78-6 (43 FR 22626, May 25, 1978), Transportation of Hazardous Waste Materials.
3. Docket HM-145B, Notice No. 79-2 (44 FR 10676, February 22, 1979), Transportation of Hazardous Substances.
4. Docket HM-126A, Notice No. 79-9 (44 FR 32972, June 7, 1979), Display of Hazardous Materials Identification Numbers; Improved Emergency Response Capability.
5. Docket HM-126A (additional proposal), Notice No. 79-9 (44 FR 43858, July 26, 1979), Descriptions for Organic Peroxides.
6. Docket HM-159, Notice No. 79-12 (44 FR 43861, July 26, 1979), Forbidden Materials.
7. Docket HM-171, Notice No. 79-11 (44 FR 43864, July 26, 1979), Use of United Nations Shipping Descriptions.
8. Docket HM-126B, Notice No. 79-14 (44 FR 65020, November 8, 1979), Improved Descriptions of Hazardous Materials for Emergency Response.

This consolidated publication of final regulations pertaining to the subjects covered by the dockets identified above was requested by many commenters responding to the different proposals. MTB agrees that all the referenced proposals should be acted upon in one body of final regulations so that persons affected by these new and revised regulations may plan their future business activities relative to training, development and acquisition of shipping documents, the marking of packages, and the development of procedures to comply with the revised incident reporting and newly adopted identification requirements. However, MTB is not able to be fully responsive to those commenters who requested that all of the amendments covered by this action be made effective on the same date (in several comments, the date suggested was two to three years from the date of publication of final regulations). With the exception of regulations pertaining to hazardous wastes, hazardous substances, empty packagings, and certain organic peroxides, more than one year is being provided for the implementation of procedures to comply with the requirements adopted in this action; in fact approximately three years is being provided for compliance with the packaging marking requirements. Instead of specifying a set of lengthy and complicated effective dates in this preamble, the effective date for compliance with each regulation that is effective after November 20, 1980, is set forth in a specific regulation associated with each new or revised requirement. Sections containing compliance dates after November 20, 1980, are § 172.101 (j) and (k); § 172.200(c); § 172.203(k); § 172.300(c)(3); § 172.324(b); § 172.336(c)(6) and (7); and § 172.402(a)(10). The principal requirements that become effective on November 20, 1980 (with certain exceptions) pertain to the transportation of hazardous wastes, hazardous substances, certain forbidden materials (organic peroxides), and empty packagings.

Also bearing on the matter of effective dates, is the requirement for compliance by MTB with the Federal Reports Act of 1942 and procedures administered thereunder by the Office of Management and Budget (OMB) relating to prior clearance of recordkeeping requirements imposed by Federal regulatory action. Prior OMB clearance is required with respect to the provisions adopted herein which impose recordkeeping or report preparation requirements.

MTB will inform the public through notification in the Federal Register when OMB clearance of these requirements has been received. It is anticipated that this clearance process will be completed prior to November 20, 1980, the earliest of the effective dates prescribed herein.

It should be noted that most of the materials that this rule indicates by name to be "Forbidden" materials in column 3 of the Table in § 172.101 are and have been "Forbidden" materials in the past under general prohibitions. The listing of these materials by name, and the effective dates specified for these amendments, does not change the present "Forbidden" status of these materials if they were not authorized to be offered for transportation prior to this publication.

Concerning special requirements pertaining to hazardous wastes and hazardous substances, it is important to note that those requirements do not apply unless a material is a hazardous waste or a hazardous substance (or both) according to the definitions in § 171.8. This determination is separate

from determining if a material is otherwise a hazardous material.

This preamble is structured to provide a discussion of the comments received and MTB's action relative to significant matters pertaining to the individual rulemaking proposals under captions identifying each docket. The termination of Docket HM-118 is covered by the discussion of Docket HM-159 relating to forbidden materials. The Review by Sections also contains discussions of many comments received in response to the various proposals.

Docket HM-126A—Display of Hazardous Materials Identification Numbers

The amendments under this Docket require the display of identification numbers on shipping papers and packages in association with proper shipping names and the display of identification numbers on orange panels or placards affixed to portable tanks, cargo tanks, and tank cars. The numbering system is based on the system adopted for worldwide use by the United Nations Committee of Experts on the Transport of Dangerous Goods. The purpose of these amendments is to improve the capability of emergency personnel to quickly identify hazardous materials and ensure the accurate transmission of information to and from the scenes of accidents involving hazardous materials. The identification numbers will also enable emergency response personnel to gain quick access to immediate response information in a guidebook that will be widely distributed by the Department in the near future.

MTB received more than 250 comments in response to the proposal, a majority of which expressed complete support for the proposal. Approximately 50 comments supported the use of the identification numbering system generally, but did not agree with the proposed extent to which the display would be required. There were 12 comments received supporting other types of systems: the Standard Transportation Commodity Codes, Chemical Abstract Service (CAS) numbers, the National Fire Protection Association 704 system, and the HAZCHEM system which is used in the United Kingdom. With the exception of the CAS numbers, each of the alternative systems suggested was discussed in the preamble to the Notice. The CAS registry system, while not discussed in the Notice, was given consideration by MTB and discussed in the regulatory evaluation for the Notice as follows:

The Chemical Abstract Service (CAS) registry system for chemicals was given consideration. This system is presently in use at the Environmental Protection Agency (EPA) pursuant to EPA Order 2800.2 dated June 30, 1975. Each chemical substance is assigned a unique, multi-digit identifying number. There are an estimated 4,500,000 chemical registrations presently on file at CAS and there are an estimated 375,000 entries being added to the registry annually.

Examination of this system raises several significant problems relative to its being employed as the basis for an emergency response program. A principal concern would be the use of numbers having up to nine digits to convey emergency response information to and from the scene of a hazardous materials transportation accident. The use of more than four digits to convey specific identification information would not be suitable for such a purpose, and considering the variable number of digits under such a system, it would likely be counterproductive. There is no need for such a large number of specific identifications of chemicals to accomplish an appropriate emergency response program. With such a large number, it would be impractical to publish a manual [for on-scene use] indexing the shipping name of each material. . . . Also, the shipping community would be faced with a tremendous burden and expense in stocking identification mechanisms for display on vehicles, making appropriate entries on shipping papers and packages, and determining the assignment of appropriate numbers to mixtures and solutions of the materials.

The distinction between this system and the UN number assignment system previously discussed is the fact that the UN assigns numbers to recognize under separate identifications those materials that are shipped in large volumes, such as nitric acid, or to separately identify materials having certain properties that would call for their being specifically identified without regard to the volume of such materials being transported. An example in the latter category is the specific identification of all organic peroxides that are commercially produced and shipped. It is recognized that it would be of benefit to all concerned with the regulation and transportation of chemicals if a common code were promulgated for all purposes, including toxic substances control and emergency response actions. This is one of the rationale[s] behind a forthcoming recommendation of the Toxic Substances Strategy Committee to the President, which states: "All the research and regulatory agencies concerned with toxic substances control should be required to use the CAS Registry Numbers as a uniform chemical identification system in all their files and proceedings." While the CAS registry system may be appropriate as a mechanism for the identification and control of the introduction of toxic substances into commerce, it would not be appropriate for emergency response purposes and would be detrimental to the proper implementation of such a program.

As stated in the Notice, the HAZCHEM and NFPA 704 systems would require a preassigned before-shipment numbering technique to provide specific action information or an indication of the level of hazard. One commenter, responding to MTB's statement that no criteria have been established for the (NFPA 704) health and reactivity presentations, stated: "In fact, over a thousand chemicals have been already rated and assigned and can be used as a basis for rating similar materials. NFPA #704 is designed for user development of qualitative criteria. Further, if quantitative criteria need to be developed, it can be done using existing procedures." In the Notice, MTB indicated its concern over the qualitative approach by illustrating the application of the same health hazard number to materials such as liquid oxygen and hydrogen sulfide, etc., and believes that this kind of assignment would not provide a sound basis for the communication of emergency response information nor for the assessment of risk at a transportation accident. Concerning the development of quantitative criteria, MTB agrees this could be accomplished. However, more than three basic fields of display and more than four levels of hazard would be required. Considering the millions of variables presented by hazardous materials in transportation, MTB believes that such a system would be severely impeded by the difficulties that would be encountered in seeking its effective implementation.

Several commenters took exception to the views expressed by MTB relative to use of Standard Transportation Commodity Code (STCC) numbers for the identification of hazardous materials. They indicated their intent to continue use of STCC numbers for their own purposes, including emergency response activities, and saw no reason why MTB could not implement requirements for the identification of hazardous materials based on this existing system. MTB stated its reasons

in the Notice for not proposing the use of STCC numbers and understands fully the desire of the railroad industry to use the STCC system. MTB views that were expressed in the Notice (44 FR 32976) concerning the STCC system remain unchanged relative to the appropriate implementation of an identification numbering system for hazardous materials.

A commenter stated: "Our final concern is that only one identification system be adopted nationally and internationally. In the US, the railroads already have their STCC code for identification of hazardous materials. Will the DOT proposal eliminate this requirement? If not, shipping papers and containers will have two sets of numbers—the DOT's and the railroad's." MTB does not intend to take any action prohibiting use of the STCC system, nor any other economic/statistical system, such as the Brussels Nomenclature. These systems were designed for purposes other than identification of hazardous materials. While the 49 series STCC numbers are separately assigned to hazardous materials, the railroad industry has adopted a "bridge" for 49 series numbers to the basic STCC system in order that correct rates and statistics can be generated according to different basic freight classifications. MTB is not aware of any requirement that shippers provide STCC numbers on bills of lading or display of STCC numbers on packages, as suggested by the commenter. A railroad waybill generally contains a special block which appears above the space provided for the description of articles or commodities. This block would contain identifying STCC numbers, not only for hazardous materials, but also for machinery, lumber, and other nonhazardous commodities. The identification number required by DOT will be displayed as part of the basic hazardous material description and MTB sees no potential for conflict between the two systems.

Five commenters expressed the view that no change to the present hazardous materials identification system is necessary. One commenter suggested that MTB continue to work to improve the emergency response capabilities of its hazard information system, based on existing regulations, through increased activity in the training of emergency response personnel. Further, the commenter placed great emphasis on the potential for mistakes in the display of identification numbers. MTB acknowledges that there may be some errors in entering identification numbers on shipping documents. It is for this reason that the suggestion of another commenter that the requirement for proper shipping names on the shipping papers be dropped is not adopted, and is one of several reasons for MTB's adoption of the requirement that identification numbers be displayed on packagings of 110-gallon capacity or less, as well as larger packagings. The Notice mentioned the value of an identification number in verifying the shipping information displayed on documents with the information displayed on packages. The proper display of shipping names will assist in verification of an identification number when doubt exists. Further, the Emergency Response Guidebook has been revised during its development by MTB to include a complete alphabetical index in addition to the numerical index for hazardous materials. However, in a study performed for MTB, using members of the Baltimore Police Department as test subjects, the number identification approach to accessing the response information in the draft Emergency Response Guidebook produced a lower error rate than did the use of the shipping name identification approach (2% vs 10% errors). Also, accessing the response information through use of identification numbers was twice as fast as accessing through use of shipping names. While the potential for clerical error in transferring identification numbers to carrier documents is real, this potential is outweighed by the potential for miscommunication of many complicated names of different hazardous materials shipped in commerce. Therefore, MTB is adopting the identification numbering system basically as proposed in the Notice. MTB agrees that there should be increased activity in the training of emergency response personnel. However, it is also obligated to implement adequate regulatory requirements leading to the quick and accurate communication of hazardous material information, which cannot be accomplished, as suggested by these commenters, through use of the system in existence up to the time of this rule.

MTB stated in the Notice that the adoption of the identification numbering system it proposed will ". . . provide the basis for an improved emergency response capability that is not presently available through direct use of technical names; e.g., hexadecyltrichlorosilane (UN 1781), to identify hazardous materials and accurately and quickly communicate information about them." The basic UN numbering system, and associated North American (NA) identification numbers for materials not appropriately covered by the UN, was selected by MTB as the basis for an improved emergency response information system because (1) the numbers are assigned by governmental authorities and easily incorporated by the Department in its regulations; (2) all of the identification numbers preceded by the letters "UN" will have the same meaning throughout worldwide commerce; (3) identification numbers have been assigned specifically to identify hazardous materials and have no other intended meaning or use; (4) their formulation and application are not dictated or driven by economic considerations for freight classification, rate-making, or statistical purposes; (5) they are assigned, for the most part, to materials requiring separate recognition that are shipped in commercial quantities, thereby precluding the need for more than four digits; and (6) the identification numbers are assigned on the basis of the next open number without regard to the particular chemical properties or end-use of a material, thereby avoiding any problems in the validity of numbers for future assignments.

Further, MTB stated that use of identification numbers for hazardous materials will (1) serve to verify descriptions of chemicals; (2) provide for rapid identification of materials when it might be inappropriate or confusing to require the display of lengthy chemical names on vehicles; (3) aid in speeding communication of information on materials from accident scenes and in the receipt of more accurate emergency response information; and (4) provide a means for quick access to immediate emergency response information in the Emergency Response Guidebook (manual) that will be distributed by MTB.

Several commenters objected to the proposal that identification numbers be displayed on packages in association with required shipping names. One commenter stated that his organization does not recommend that emergency services personnel enter vehicles to determine the identification number for hazardous materials and that reliance should be placed on identification numbers displayed on shipping papers. MTB agrees that emergency services personnel should not place themselves unnecessarily in jeopardy by entering vehicles for the purpose of identifying hazardous materials if they can identify the materials by other means. However, there are circumstances which require entry into vehicles during or following emergencies. In the Notice, MTB stated the following (44 FR 32976):

Concerning the marking of identification numbers on packages, two major factors were considered. First, freight personnel often become the first contact "emergency" personnel when spills and leaks occur. The MTB visualizes that they will be able to make use of the manual in the same manner as emergency response personnel. Sole dependence on complex chemical names without reference to an identification number may lead to an erroneous response. This same view applies to emergency response personnel coming into contact with packages directly in vehicles, on freight docks, or elsewhere. The second factor is the value of the identification number in verifying the shipping information displayed on documents with the information displayed on packages to preclude error.

While this quoted language clearly makes reference to the possibility that emergency personnel could come into contact with packages directly in vehicles, this factor was given undue emphasis by the commenter. Other factors support MTB's action. For example, according to the incident reports on file at MTB, a large percentage of the total of hazardous materials incidents occurs during freight handling operations and not in vehicles. MTB believes that identification numbers on packages will be of significant use in mitigating the consequences of spills occurring during freight handling operations when shipping papers are not always immediately available.

A commenter questioned the benefit that could be derived from the use of identification numbers by the public. He stated: "To expect the general public to notice, or be knowledgeable of, the numerical system is beyond realism." The prime objective of the proposals and the adopted rule is improved emergency response information. MTB has a continuing program to educate industry and emergency response personnel. It is also hoped that the new system will be given much publicity by industry and the emergency services organizations. The present placarding system serves as a hazard alerting system for the benefit of the general public and emergency services. With the added display of identification numbers on tanks, MTB visualizes that there may be many instances where members of the general public, even if not generally knowledgeable of the system, would be able to convey to the emergency services by telephone the identification numbers they see on orange panels or placards.

One commenter, a trade association of chemical manufacturers, expressed support for the display of identification numbers on shipping papers and stated its conclusion "* * * that [identification] numbers on portable tanks, cargo tanks and tank cars can contribute to the safe evaluation and initial handling of an emergency." However, the commenter recommended "* * * the modification of existing hazardous materials placards to incorporate the four-digit number in the center section of placards." In support of this recommendation, the commenter stated:

A dual placarding system is unnecessary in that the present placard format can be modified to incorporate the four-digit numbers in the center section of the placards in a size and display that meets the visibility objectives of the MTB and emergency response services. In training personnel to comply with operating procedures, the more simplistic a procedure, the higher the degree of compliance. Thus a one step procedure, keeping it simple, will receive a higher degree of correct implementation than a two step procedure.

The proposed application of ID panels on portable tanks, cargo tanks and tank cars establishes a double process to select, match and apply a set of placards and a set of ID panels. Training personnel to meet present placarding requirements is difficult enough because of turnover, absenteeism and multiplicity of products at a loading station. The more complex an operation—the more confused employees are apt to become. We are convinced a dual placarding requirement would cause a sharp rise in placarding errors, thereby reducing the increase in safety sought by this docket. Such errors would create an added threat to emergency response personnel. . . .

In our view the concept of applying adhesive backed ID panels to vehicles and tanks is not practical. CMA member companies have had less than desirable experience with adhesive placards in that under certain weather conditions they are next to impossible to apply and removal after use is often extremely difficult and costly. Therefore, it is likely that if transport vehicles are required to display ID panels, as proposed in the docket, the vehicles would need to be equipped with ID panel holders. Costs to install ID panels and costs on labor for dual placarding is an unwarranted and unnecessary expense, and is inflationary and wasteful.

The integration of ID numbers into the placards provides two other significant advantages. It directly associates product identity for emergency response with the other hazard precautions communicated on the container, i.e. the placard. The display of the placard in a holder assures that the identification numbers have not fallen off the vehicle and avoids confusion that would set in if the ID number on the vehicle was different than the placard required for the ID panel. CMA's proposal permits use of existing vehicle placard holders.

The MTB in HM Docket No. 126 dated June 25, 1975, stated—"It is the Board's position that any alpha/numeric/symbolic hazard information system adopted in the future be compatible with and adaptable to the placards it adopts under Docket HM-103." CMA's proposal is consistent with this MTB objective, and conversely the ID panel is not. CMA has developed a reasonable one-step process that will accomplish the objectives of MTB in the docket with no lowering of the level of visibility.

The commenter also proposed the use of plain placards for display of identification numbers addressing materials that are not otherwise subject to the placarding requirements (e.g., hazardous substances to be covered by 9000 series identification numbers).

Except for the special consideration that must be given to Class A poison gases and radioactive materials and their associated placards, POISON GAS and RADIOACTIVE, MTB agrees with many of the points raised by the commenter and has modified the rule to allow the display of identification numbers on placards as an alternative to their display on orange panels. Even though a number of commenters supported the display of identification numbers on placards as the only means of display, there may be circumstances when it would be appropriate to display identification numbers on orange panels (e.g., for international shipments or the identification of hazardous substances), as was proposed in the Notice.

Included in the same comments were suggested alternative methods for the display of "class" words on placards. Of necessity, there would be a substantial reduction in the size of the letters in the words, thereby lessening the benefit of their display on placards. The commenter suggested the words be placde immediately above the identification numbers (letters approximately ¾" high), or in the bottom triangle below the identification numbers (letters ranging in size from approximately ¾" to 1¾" high). In addressing this matter, MTB was faced with one of its most difficult decisions relative to the rulemaking actions covered by this publication.

In deciding to allow display of identification numbers on placards, as an alternative to their display on orange panels, MTB decided to address not only the potential problem raised by a reduction in the size of "class" words, but also the need for words on placards and future problems relative to their display in a single language. MTB has received inquiries concerning bilingual displays in English/Spanish (for example, Puerto Rico is declared by law to be a State for the purposes of these regulations) and English/French (for example, it is anticipated that there will be increasing interest in bilingual requirements relative to commerce between the U.S. and Canada).

MTB has concluded that "class" words having substantially reduced letter size, will be of little benefit to emergency services in recognizing the kinds of hazards they may be dealing with that also has concluded that, with two exceptions, the removal of "class" words from placards will not significantly affect the ability of emergency services personnel to recognize hazards based solely on the hazard alerting presentation and format of a placard; i.e., size, shape, color, and pictograph.

One exception is the distinction between liquids and gases. The loss of this distinction, which would result from the removal of "class" words, is counterbalanced by the requirements that gases be identified by name on tanks and that the international class number (2 for gases) be displayed at the bottom of placards.

A second exception involves the fact that there are operational considerations relative to placement of cars in trains based on the type of placard displayed. The car placement rules in Subpart D of Part 174 specify restrictions on the location of cars containing Class A poison gases and radioactive materials in a train solely on the basis of the placard type displayed; i.e., POISON GAS or RADIOACTIVE. There are also references to COMBUSTIBLE placards in Part 174 that provide exceptions to the car placement rules when combustible liquids, rather than flammable liquids or gases, are being carried. (However, an error in recognizing a placard bearing identification numbers identifying a combustible liquid would not cause a violation of the car placement rules.)

After considering these problems, MTB is promulgating a final rule that removes the requirement that "class" words be displayed on placards, except when a POISON GAS or RADIOACTIVE placard is required. In those two instances, the "class" words must be on a placard in the same manner as presently required. This will necessitate that identification numbers in those two instances be displayed using orange panels without the option of placing the numbers on the placards. Also, in recognition of the fact that combustible liquids are subject to fewer constraints than flammable liquids and gases (e.g., car placement requirements by rail and use of tunnels by highway), this rule specifies that the bottom of placards for combustible liquids, when identification numbers are placed thereon, shall be white rather than red. This distinction will facilitate the identification of combustible liquids in tanks.

MTB is adopting a requirement that, as a condition relative to the display of identification numbers on placards, the international class designation for hazardous materials be displayed at the bottom of a placard. This kind of display will overcome the lack of distinction between gases and liquids, since a number "2" will be required on the bottom of a placard for a gas. Admittedly, it will take some time for the emergency services to become fully familiar with this type of designation. As a step to improve familiarity, a description of each of the international class numerical designations is contained in the Emergency Response Guidebook. Also, a special display has been added to the Guidebook to illustrate a placard bearing identification numbers with a number "2" in the bottom triangle. The caption reads: "A number 2 at the bottom of a placard without any name means that the material in the tank is a gas. See the next page for the meaning of other numbers at the bottom of placards." However, this is not an initial step, since MTB has been distributing placard and label charts to emergency service personnel and other interested persons for more than 7 years (more than 1½ million copies to date). These charts show the international class designations on labels and placards.

Denial of Petition. By petition dated March 6, 1979, the Association of American Railroads (AAR) requested "* * * that the MTB broaden the scope of HM-145A and HM-145B * * * by proposing the adoption of a requirement that shippers include on the shipping papers the code numbers for 'hazardous materials,' 'hazardous substances,' and 'hazardous wastes' through use of the 49-Series of the Standard Transportation Commodity Code Tariff." The petition pointed out the need for the code numbers to give shippers and carriers the ability to make precise commodity information known to emergency personnel.

MTB agrees with the AAR concerning the need for a numerical coding system to assure the communication of precise commodity information; however, for the reasons stated in Notice 79-9 (44 FR 32972) under Docket HM-126A and earlier in this preamble, and following full consideration of all comments received on its proposal, MTB has decided that a numbering system based on the United Nations' system will be used. Therefore, the AAR petition, to the extent that it request MTB to propose use of the 49 Series of the Standard Transportation Commodity Code Tariff, is hereby denied.

HM-126A—Descriptions for Organic Peroxides

An additional proposal under Docket HM-126A contained a listing of each organic peroxide (with identification number) that may be shipped in commerce in order that the different kinds of risks presented by these materials may be recognized during implementation of emergency response procedures. These differing risks include (1) thermal sensitivity; (2) violence of thermal decomposition; (3) susceptibility to ignition by friction; (4) flammability; and (5) corrosivity. Approximately 135 organic peroxide entries were proposed to be added to the Hazardous Materials Table (Table).

One commenter requested that di-n-propyl peroxydicarbonate 87% maximum, di-sec-butyl peroxydicarbonate 77% maximum, and di-(2-ethylhexyl) peroxydicarbonate 77% maximum be added to the Table. These materials were proposed (and adopted) to be in the Table as technical by pure materials, and, therefore, these entries would adequately cover those peroxides in the concentrations requested by the commenter.

One commenter objected to the proposed requirement that the technical names of the organic peroxides be used as proper shipping names. The reasons given were that such complicated names do not assist emergency personnel in recognizing a hazard quickly, misspellings and errors are more likely on shipping papers and the required use of these names would place a burden on domestic producers of organic peroxides that would be out of proportion to the volume of organic peroxides imported or exported. MTB does not agree with these objections. The use of the technical names of organic peroxides has been required for many years by the International Maritime Dangerous Goods Code and by § 172.203(i)(2) for water shipments without the difficulties noted by the commenter. No other commenters objected to the use of the technical names as the proper shipping names.

Another commenter said that in some instances the hazard of the material in which an organic peroxide was dissolved might completely overshadow the hazard of the peroxide. MTB agrees with this comment and has changed the wording in § 173.151a(a)(3) to authorize organic peroxide solutions to be classed as other than an organic peroxide.

Two commenters pointed out that the adoption of the United Nations (UN) nomenclature for organic peroxides

would automatically bring some peroxide formulations under regulation which have previously not been subject to regulation in the United States. This situation can be handled under the provisions of § 173.151a(a)(4) which provides for data to be submitted to MTB indicating that a particular peroxide formulation does not present a hazard in transportation and, based on the data submitted, that product may be shipped as not subject to the regulations.

One commenter suggested that a listing of the peroxides be deferred until complete packaging and shipping requirements have been developed. The reason given was that the cross-referencing to a general entry can lead to errors and inconsistencies. MTB believes that it is necessary to publish the technical names of the peroxides at this time due to the development of the Emergency Response Guidebook. MTB acknowledges that there were some errors in the listings and cross references that appeared in the Notice of Proposed Rulemaking, and these errors have been corrected in this final rule.

A commenter noted that the proposed list of organic peroxides contained several entries in which the concentrations of peroxide solutions were lower than those presented in the UN recommendations. It was urged that the U.S. had representatives at the UN meetings when the international concentrations were agreed upon and took no exception to them following detailed review and consideration of data presented. MTB agrees with this commenter and has changed the concentrations of those peroxides in question to agree with the concentrations proposed in the UN recommendations.

One commenter noted that the organic peroxide, n.o.s. entries and two specific peroxides listed by the UN did not appear in the Notice. The listing of proposed entries in the Notice was in addition to the entries already appearing in the Table. The entries cited by this commenter already appear in the Table and, therefore, were not included in the Notice.

A commenter suggested that the organic peroxide nomenclature be brought into conformance with the latest proposals by the UN Editorial Committee. MTB agrees with this suggestion and the entries in this final rule have been modified to reflect the latest UN accepted nomenclature.

A commenter suggested that, since there are two Organic peroxide, liquid or solution, n.o.s. entries—one classed as an Organic peroxide and the other as a Flammable liquid— § 172.100 should be amended to identify this difference. MTB does not agree that this difference needs to be specifically addressed. These entries presently appear in the Hazardous Materials Table and no specific explanation of these entries is provided. It remains the responsibility of the shipper to determine the proper class of the hazardous material being shipped, to determine a proper shipping name in accordance with that class and then ship that material in compliance with the applicable regulations. This final rule does not alter this responsibility.

A commenter referenced his Docket HM-126A comments to the comments he made in response to Docket HM-159 in regard to a 9% active oxygen content for certain organic peroxides. MTB's response to this commenter is contained in that portion of this preamble addressing Docket HM-159.

Several commenters noted that neither the UN nor North America (NA) indicator was placed before the identification numbers for the organic peroxides in the proposal. This final rule places either a UN or NA indicator, as appropriate, before the identification numbers for organic peroxide entries in the Table.

Docket HM-126B—Improved Descriptions of Hazardous Materials for Emergency Response

The amendments under this Docket require more specific identification of certain hazardous materials, mainly in four areas, as follows:

1. New generic descriptions for pesticides are being added to the Table in § 172.101. These descriptions identify and describe pesticides by chemical groups based on their chemical structures. Each of the 15 groups is divided into liquids and solids. The liquids are further divided to distinguish between materials that are classed as Flammable liquids and those classed as Poison B.

2. If the technical name of the principal poisonous constituent of a material is not identified in a shipping name, it must be identified in association with the basic description on a shipping paper.

3. If a shipping name or class name for a poisonous material does not indicate the material is a poison, the word "Poison" must be shown on the shipping paper. Also, for water reactive materials (other than Water reactive solid, n.o.s.), the words Dangerous When Wet must be shown.

4. Nine n.o.s. descriptions addressing multiple hazards are added to the Table.

Certain other amendments under the Docket are addressed in the Review by Sections.

MTB received many comments expressing support for the proposals it made under this Docket, with one major exception—the display of technical names after n.o.s. descriptions. The principal arguments against this proposal were that (1) many of the technical names that would be required would be lengthy and complex; (2) such information would be of little or no value in an emergency; (3) the four-digit identification number, tied to emergency response information in a manual or provided by CHEMTREC, would be sufficient for emergency response purposes; (4) the purpose of the additional information stated in the preamble of the Notice for this Docket was in conflict with statements referencing lengthy technical names in the preamble to Docket HM-126A; and (5) such a requirement would require the disclosure of proprietary information.

Upon completion of its review of the comments on its proposal pertaining to technical names, MTB was compelled to fully reconsider the proposal. At the outset, MTB acknowledges that it erred in not explaining the proposal in sufficient detail in the Notice and that one sentence in the preamble did not sufficiently discuss the distinction between the benefits of the proposed additional descriptive information and the benefits from using identification numbers. The sentence which read, in part, "MTB agrees that safety would be enhanced by such a requirement since more specific information would be immediately available for use in emergency response actions," should more accurately have stated, "MTB agrees that safety would be enhanced by such a requirement since more specific information would be available for first-aid and clean-up actions immediately following the initial phases of an emergency."

Upon further consideration, MTB concludes that the requirement for more specific information should relate only to poisonous materials. If some form of technical identification is not provided in the shipping name for a material that is poisonous, neither a manual nor an emergency response information center can overcome this shortcoming when it comes to providing appropriate first-aid measures beyond initial actions. For example, if a shipping paper contains only the description "Poison B liquid", no specific response information can be provided as to appropriate antidotal procedures within a sufficient time interval. Even if a response center were

able to reach the shipper of the material, considerable time would be lost in attempting to ascertain the specific identification of the poisonous material in the vehicle involved in the accident of concern, unless the shipper introduces only products of the same chemical group into commerce.

MTB has concluded that this kind of immediate information would be of less importance for materials such as flammable liquids and corrosives. Also, MTB believes that it has become necessary to distinguish materials that cause death by systemic poisoning from those that result in death due to corrosive destruction of tissue. While this distinction is not made for consumer products, MTB believes it should be made in regard to the transportation of hazardous materials.

MTB has dropped proposed § 172.203(j) and has merged the requirement for the identification of poisons into paragraph (k), entitled "Poisonous materials." A provision has been added to exclude consumer commodities and chemical groups identified in shipping names. The "technical" identification would not be required for limited quantities because of difficulties that may be encountered in shipping untested samples for laboratory examination. A major feature is a provision allowing use of names contained in the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances or more commonly, NIOSH Registry. The NIOSH Registry contains many short and specific names which are cross-referenced to technical names. The NIOSH Registry will be kept on file at CHEMTREC. Shippers desiring the addition of their materials to the NIOSH Registry should contact The Editor, Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, Ohio 45226, Telephone: (513) 684-8317. By allowing alternative use of names in the NIOSH Registry or identification by chemical groups, MTB believes the claimed problem with potential disclosure of proprietary information has been alleviated.

The proposed requirement that the technical names of all n.o.s. described materials be marked on packages has not been adopted. While MTB agrees that many product labels, in particular those for pesticides, contain this information, this is not the case for all poisonous materials. However, MTB is aware of labeling proposals presently under development by the EPA and the Occupational Safety and Health Administration (OSHA), which are much more extensive than those proposed by MTB under Docket HM-126B. For this reason, MTB believes it appropriate to drop the marking portion of its proposal in light of the contemplated actions of EPA and OSHA in order to avoid any conflicts or unnecessary duplication of requirements.

Many commenters supported the proposed and adopted requirement that the word Poison be added to shipping descriptions when not included in a shipping name or class description for a material meeting the DOT poison criteria. Also, most commenters supported the required display of information for water reactive materials, except they recommended Dangerous When Wet rather than Water Reactive as being more appropriate in communicating the risk. MTB agrees and the requirement has been adopted accordingly.

A commenter correctly pointed out that MTB failed to include Oxidizer, poisonous liquid or solid in the Notice. This is contained in § 172.402(a)(3). As noted earlier, appropriate entries have been included in the amendment. Also, commenters pointed out MTB's failure to address labeling for multiple hazards in § 172.402 in addition to the proposed dual labeling specified for the eight generic n.o.s. entries in the Table. One commenter suggested that dual labeling not be required if the identification numbering system is adopted. MTB does not agree. MTB views the DOT required labels to be a hazard-alerting portion of the hazard information system and, in terms of incident prevention and immediate knowledge of risk, an essential element of the system. In adopting the dual labeling requirements for the generic entries, MTB agrees that similar treatment should be given to other materials having the same hazards. Therefore, a change is being made to § 172.402 accordingly.

Docket HM-145A—Transportation of Hazardous Waste Materials

The amendments under this Docket provide for the proper identification of hazardous waste materials for transportation and to ensure that such wastes ultimately are delivered to predetermined designated facilities through implementation of certain record-handling requirements. The requirements apply to hazardous waste carried in either interstate or intrastate (with one exception) transportation. The hazardous waste regulations have been coordinated with the Environmental Protection Agency's (EPA) development of a national hazardous waste regulatory program as mandated by § 3003 of the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6923).

MTB's Office of Hazardous Materials Operations published a Notice of Proposed Rulemaking regarding the transportation of hazardous wastes under Docket HM-145A on May 25, 1978 (43 FR 22626; Notice 78-6). The preamble to the Notice provided an extensive explanation of the proposed regulations from the standpoint of what is expected in implementing RCRA requirements; the differences in the jurisdiction of EPA and DOT; and the overall objective of the proposed requirements. Rather than repeating that discussion here, interested readers are referred to the earlier document.

As a part of this rulemaking proceeding, six EPA-DOT joint public hearings were held in various parts of the United States. Virtually all the comments made at the hearings were addressed to EPA proposals, except that many commenters expressed the view that MTB should issue the regulations pertaining to the transportation of hazardous wastes. MTB agrees with those views insofar as the requirements pertain to carrier activities. Further, MTB is adopting a limited number of requirements that apply to generators (shippers) of hazardous wastes in addition to existing applicable hazardous materials regulations. EPA has recently published regulations, to be codified at 40 CFR Part 262 (45 FR 12722, February 26, 1980), applicable to generators of wastes. The EPA regulations are extensive in scope and apply to a generator's nontransportation activities as well as to the offering of wastes for transportation. MTB believes that it will be necessary for shippers to be fully cognizant of EPA's regulations, which include requirements relating to record-handling, storage limitations, and special package markings, since many of these requirements are inappropriate for MTB to adopt under the Hazardous Materials Transportation Act (HMTA) (49 U.S.C. 1801-1812).

EPA also has published regulations, to be codified at 40 CFR Part 263 (45 FR 12737, February 26, 1980), applicable to transporters (carriers) of hazardous wastes (hereinafter referred to as wastes). With two exceptions, however, the EPA has acknowledged (at 40 CFR 263.10) that a carrier complying with DOT requirements, as amended by this rule, applicable to transportation of wastes, will be considered in compliance with corresponding EPA requirements even though those requirements may be stated differently.

One exception is EPA's requirement for carrier identification numbers, which must be obtained as a one-time requirement; the second exception is EPA's requirements for the cleanup of spills or discharges. For the convenience of carriers, the former exception is cited and the latter quoted in notes to § 171.3 of this rule.

Throughout this rulemaking proceeding, MTB worked closely with EPA in the joint development of appropriate transportation requirements. This rule is being promulgated under the HMTA to address the carriage of hazardous wastes, which may pose an unreasonable risk to health and safety or property when transported in commerce. Consistent with the regulations adopted by EPA, MTB is adopting requirements primarily to ensure that hazardous wastes are properly identified to carriers and that they are delivered to predetermined designated facilities. Proper identification of wastes is essential in order to implement the transportation aspects of a "cradle to grave" hazardous waste tracking system.

One commenter, referring to proposed § 171.3(e)(3) (which is § 171.3(c)(3) of this final rule), stated that the proposal "[does] not uphold the preemption of inconsistent state or local requirements with regard to additional requirements on shipping papers" and, therefore, stands in opposition to Section 112 of the HMTA and the preemption procedures in 49 CFR Part 107, Subpart C. Another commenter was concerned about possible regulation by the State or locality to which a waste shipment is destined and claimed that the specific preemption language in the proposal did not go as far as Section 112 of the HMTA would allow.

Both comments misconstrue the proposal. The term "inconsistent" as used in the HMTA describes the type of state and local transportation safety regulation that is preempted by requirements under the HMTA. Section 171.3(c) lists and classifies as "inconsistent" certain areas of possible State and local regulatory actions pertaining to hazardous wastes which MTB believes would be disruptive of the national uniformity required in the identification of hazardous materials (including wastes) in transportation. Section 171.3(c) does not list all the conditions under which it might view a State or local law as "inconsistent," nor does it apply to non-transportation requirements that may be imposed by State or local law. The final rule says that MTB considers that State and local requirements pertaining to certain aspects of the transportation of wastes are inconsistent with DOT requirements if they apply differently from or in addition to them. Section 171.3(c) is a declaration of intent that State and local requirements in this safety area be uniform to encourage compliance by shippers and carriers of hazardous wastes and to avoid unnecessary regulatory impediments to the reliable transportation and delivery of these materials.

In a related matter, a recently issued MTB inconsistency ruling (IR-2) (44 FR 75566, December 20, 1979) expresses a view of HMTA preemption in other regulatory areas similar to that expressed in this final rule. While preemption is customarily a judicial matter, the statement in § 171.3(c) may reduce the need for subsequent dispute resolution.

In the final rule, the reference to additional requirements for shipping papers (including hazardous waste manifests) by states and localities to which a shipment is consigned has been dropped. When a hazardous waste manifest is being carried, as required by this rule, it is considered a shipping paper, and the language in § 171.3(c) applies. Any agency of a state which requires waste disposal facilities to obtain information in addition to or differing from that required by EPA and DOT to be contained in manifests must specify some means other than shipping papers (including hazardous waste manifests) for those waste facilities to obtain that additional or different information from generators. MTB believes that a nationwide standard for manifests is an important factor in accomplishing the safe and effective delivery of wastes to designated facilities without delays due to the manner of documentation.

After the comment period on this docket had closed, representatives of environmental protection departments of several Northeastern States, most notably New Jersey, expressed concern to Departmental representatives that the final rule might contain language preempting certain aspects of in-place State hazardous waste management programs. They were especially concerned about State requirements for information about individual waste shipments that may be in addition to that required by DOT's shipping paper requirements.

The language of the final rule does not preclude State requirements for such additional information with regard to wastes generated or disposed of within that State. However, as mentioned earlier, § 171.3(c) does not state all the conditions under which a State or local law might be preempted. State or local requirements applicable to hazardous waste transportation that are not addressed by § 171.3(c) may nonetheless be found preempted under administrative procedures found at 49 CFR Part 107, Subpart C.

Several commenters discussed the proposed changes to § 173.28 which addresses the reuse of containers (packagings). One commenter suggested that proposed paragraph (n) be revised to make it consistent with existing § 173.28(i) and to make it clear that NRC (nonreusable container) marked specification packagings may be used to transport the indicated hazardous materials. MTB agrees and has modified the rule accordingly. Another commenter suggested that STC (single trip container) marking requirements be removed from the regulation. While this suggestion may have merit, it would require action that is considerably beyond the scope of this rulemaking since each packaging specification in Part 178 that references such a marking would have to be modified.

One commenter expressed strong objection to proposed § 173.28(p) which proposed to permit the reuse of NRC-and-STC-marked packagings for shipments of wastes under specified conditions. The same commenter concurred subsequently in the submission of another commenter who recommended that the requirement be restated to allow the reuse of NRC and STC marked packagings for wastes if they are "reconditioned * * * in accordance with this part." Since there are no reconditioning requirements for NRC-marked packagings, these commenters may be suggesting allowing their reuse for wastes, as proposed in the Notice, while the more substantial STC-marked drums would have to be reconditioned before use for waste shipments. MTB does not agree with this point of view. It is more likely, however, that the commenters oppose allowing NRC- and STC-marked packagings to be used for waste shipments unless they are reconditioned. For the on-time use authorized by this final rule, MTB does not believe reconditioning to be necessary for either STC- or NRC-marked packagings.

The same commenter pointed out the important contribution of the drum reconditioning industry to the saving of national resources and energy. MTB acknowledges the significant contribution of the drum reconditioning industry to savings in energy and resources. However, NRC-marked packagings are not presently covered by reconditioning requirements, and MTB

believes they should be put to appropriate use in waste disposal activities under limited circumstances and that there is no logical reason to exclude STC-marked drums from similar use. Shipments of hazardous wastes in reused STC- and NRC-marked drums are subject to special requirements: (1) they must be moved under manifests; (2) discharges must be reported and cleaned up; (3) deliveries are restricted to designated facilities; (4) the adopted rule limits transportation to highway; (5) packages must be held 24 hours after filling for inspection (a requirement that does not apply to reconditioned drums); (6) and packages may not be loaded or unloaded by common carrier personnel, who would not normally be as familiar or trained to deal with a waste material as would the employees of private and contract carriers. This last fact is relevant to the objection of another commenter who suggested common carriers should not be treated differently. On a number of occasions, MTB has recognized the distinction between private (and at times contract) carriers and common carriers in the application of regulations and the issuance of exemptions (see, for example, § 173.29 in this rule and § 173.316(a)(2)(vi)) and believes such a distinction is appropriate in this case. MTB considers that the adoption of this rule will contribute to saving energy and national resources since many packagings that are used to bring materials into industrial concerns may now be reused for wastes and it will be unnecessary for new or reconditioned drums to be used in their place.

Several commenters addressed MTB's proposed revision of § 173.29 dealing with empty packagings. One commenter challenged MTB's statement in the Notice preamble which indicated that "it is essential to deal with the subject of so-called 'empty packagings' containing the residues of hazardous materials" (43 FR 22629). The commenter suggested that MTB did not have data to justify this action. By a separate and subsequent submission, this commenter petitioned for rulemaking to delete § 173.29(e) as it pertains to required removal, obliteration, or covering of labels when packagings are transported in open-top or flat bed vehicles. Another commenter considered the proposal to be outside the scope of this proceeding and suggested that it should only be addressed to wastes. MTB is in substantial disagreement with these comments. However, MTB does agree that the rulemaking petition has merit since the deletion of § 173.29(e) was proposed in the Notice and is adopted here.

The revision to § 173.29 addresses all so-called empty packagings having a capacity of 110 gallons or less—not only drums. The residues in a packaging may pose an unreasonable risk to health and safety or property regardless of whether or not the packaging is being transported for recovery of residue, reconditioning, refilling, or disposal. Even small quantities of certain poisonous residues can be lethal upon contact with the skin. Residues of corrosives can cause severe burns. Residues of some flammable liquids can generate vapors that can be explosive when mixed in certain volumes with air. The commenter is correct in suggesting that MTB does not have accident data to support this requirement, for the simple reason that so-called empty containers have never been subject to the reporting requirement of § 171.15 or § 171.16. MTB believes it is appropriate to take action based on the fact that hazardous materials currently are subject to regulation as such when in smaller quantities than are often contained in so-called empty packagings. One commenter suggested that a drum "having less than 1% of the marked capacity of the container, should be deemed 'empty'." This would mean that in excess of two quarts of residue could remain in a 55-gallon drum and be excepted from the rule. Furthermore, the commenter did not suggest how the 1% or less would be determined. MTB does not agree with this suggestion because of the hazards these quantities may pose. Concerning the same commenter's petition to allow prescribed hazardous materials labels to remain on a packaging containing the residues of hazardous materials, MTB agrees and has adopted the requirement as proposed in the Notice. Labels, as required for filled packagings, must remain on so-called empty packagings unless the packagings have been cleaned and purged of all residues.

MTB does not consider the adoption of rules for all so-called empty packagings, and not just those being discarded as waste, to be outside the scope of this rulemaking action. MTB's intention to do this was expressed and thoroughly discussed in the Notice. Obviously, the status of packagings containing the residues of hazardous materials is often subject to change. While it may have been originally intended that they be transported for recovery or reuse, it could be decided at any point in the cycle that they be discarded. MTB is unable to perceive any rational approach that would call for a distinction in how a hazard is communicated (i.e., through labels, markings, and shipping papers) merely due to a difference in destination. Therefore, it was essential that the entire matter be dealt with in this rulemaking action (the first action addressing the subject since it was removed from Docket HM-112 in 1976), to assure uniform application of the requirement to all so-called empty packagings.

The hazardous waste regulations being issued under Docket HM-145A constitute a significant regulation under the terms of Executive Order 12044 and DOT implementing procedures (44 FR 11034; February 26, 1979). In accordance with regulation evaluation requirements contained in those documents, MTB invites public comments, responses and reactions to this rule during the first year of its implementation. Comments should be titled "Hazardous Waste Rules" and addressed to: Dockets Branch, Materials Transportation Bureau, U.S. Department of Transportation, Washington, D.C. 20590. It is requested that five copies of any comments be submitted. Comments received prior to November 20, 1981, will be considered.

At the conclusion of the comment period, MTB will reexamine the rule based on the comments received. Subsequently, MTB will publish a notice in the Federal Register indicating what, if any, action it is taking or proposing to take based on its reexamination.

HM-145B—Transportation of Hazardous Substances

This rule provides for the identification of hazardous substances when a "reportable quantity" is contained in a package. The identification will be accomplished by requiring that the name of the hazardous substance and the letters "RQ" be placed on shipping papers and displayed on packages in association with the descriptions for hazardous substances. Also adopted is a new § 171.17 specifying the reporting requirements for discharges of hazardous substances into or upon the navigable waters or adjoining shorelines.

The Notice proposed to identify a hazardous substance as any material that is subject to the EPA regulations found in 40 CFR Parts 116 and 117, and to require the identification of hazardous substances when loaded in reportable quantities at any one loading location, considering all packages loaded at that site. If final rules were adopted as proposed, there would have been no qualification or exception

relative to the aggregation of packages in vehicles other than limiting their application to aggregate quantities loaded at one loading location. Also, there would have been no qualification or exception for small quantities of these materials in mixtures or solutions. The Notice also proposed the entry of a statement on each shipping document specifying a notification requirement, including a telephone number to be called in the event of a discharge. The notification requirement set forth in proposed § 171.17 specified that a report would be required when any amount of a hazardous substance was discharged during transportation, if a reportable quantity of a hazardous substance was present in a vehicle, as indicated by the identification statement on the shipping paper. The proposal also would have required special markings on portable tanks, cargo tanks, and tank cars for the identification of hazardous substances. Significant changes have been made to the proposal.

Several commenters stated that the DOT would exceed its authority under the Hazardous Materials Transportation Act (HMTA) 49 U.S.C. 1801–1812) by adding the ORM-E hazard class to cover hazardous substances which, they stated, are not hazardous materials that meet the definition of any existing hazard class. Other commenters stated that MTB holds no authority to promulgate regulations pertaining to materials identified as hazardous substances by another Government agency because Section 104 of the HMTA requires the Secretary of Transportation or his delegate, per 49 CFR 1.53(b)(1) and paragraph 5 of Appendix A to Part 1, to make a finding that "a particular quantity and form of material in commerce may pose an unreasonable risk to health and safety or property * * *" while in the past MTB has primarily dealt with materials that may pose acute hazards to persons or property, addressing materials that may pose chronic hazards to health through the environment is well within DOT's authority under the HMTA. The pertinent language in Section 311 of the Clean Water Act (33 U.S.C. 1321), EPA's authority for designating hazardous substances, is contained in paragraph (b)(4), which provides for determination of "those quantities of * * * any hazardous substances the discharge of which may be harmful to the public health or welfare * * *." Clearly, many of the risks involved from the transportation of hazardous materials relate to the possibility of unintentional release, and such releases may involve discharges into the navigable waters of the United States. To the extent that EPA has designated certain substances in specified quantities as potentially harmful, it is appropriate for MTB to designate those quantities of those materials as hazardous materials under the HMTA. Moreover, should MTB not take this action, it would be left to EPA to fill the void covering the transportation of those hazardous substances not reached by DOT regulations. Such a split in regulatory coverage would be inefficient and a hinderance to all concerned.

Several commenters suggested that the definition of a hazardous substances and a reportable quantity should be redefined to agree with EPA and that Part 117 of EPA's regultions pertaining to hazardous substances should be incorporated into the DOT regulations as an appendix. MTB agrees that there is a need to redefine hazardous substances. However, in recognition of the distinction between transportation operations and fixed facilities, MTB believes it should adopt a definition for hazardous substances under the HMTA that recognizes the unique features of our transportation system while sufficiently accomplishing the purposes and intent of § 311 of the Clean Water Act. Therefore, MTB has revised its definition of a hazardous substance by addition of two major features that were not included in the Notice. The first feature is a limitation of the application of DOT's regulations to reportable quantities of a hazardous substance contained in one package (see the definition of a package in § 171.8); in fact, the concept of a reportable quantity in a single package is now contained in the definition of "hazardous substance" in § 171.8. The second feature is a limitation of the application of DOT's regulations with regard to mixtures and solutions containing materials identified by the letter "E" in § 172.101. Certain concentrations of these materials will be excluded from the applicability of DOT's regulations pertaining to hazardous substances. This is being accomplished by the inclusion of a table in the definition. For example, if the reportable quantity for a certain hazardous substance is 1,000 pounds, less than a 2 percent concentration by weight of that material in a mixture or solution will *not* be subject to DOT's regulations as a hazardous substance. Further, the 2 percent or greater concentration (by weight) of that material must result in a reportable quantity being contained in one package to be subject to DOT's regulations as a hazardous substance. Concerning discharge notifications, MTB has modified the requirement consistent with the suggestions of many commenters who stated that MTB was proposing a rule that was considerably beyond the scope of the purpose and intent of § 311 of the Clean Water Act. MTB proposed the rule in that fashion because it anticipated considerable difficulty on the part of transport workers in establishing when reportable quantities were discharged. MTB erred in overstating the proposed reporting requirement for that purpose and agrees that the discharge reporting requirement should be closely aligned with the statutory reporting requirement.

A number of commenters stated that transportation employees would not always be able to make notifications of discharges directly and that many communications would of necessity be through carrier personnel other than the operators of vehicles. MTB has modified the rule to recognize such a situation by stating that the person in charge of the transport vehicle, etc., shall make the notification directly or indirectly through the carrier. The prime responsibility still rests with the person in charge, however, the final rule grants flexibility in the method of notification. MTB believes this is consistent with the intent of § 311 of the Clean Water Act. A new paragraph (e) has been added to § 171.17 to require the carrier to make a notification if the person in charge of a vehicle is incapacitated or otherwise unable to make a notification. For instance, there may be a situation when the driver of a motor vehicle is severely injured in an accident and would not be able to make the required notification. In such a case, an official of the carrier operating the vehicle would be required to make the notification as soon as he has knowledge that a hazardous substance (i.e. a reportable quantity) has been discharged.

Many commenters objected to the proposed requirement for a notification statement on shipping papers, stating that such a statement was not necessary to accomplish the purposes of the proposed rulemaking. Several commenters stated a simple identification of hazardous substances in a shipment would be sufficient to implement the reporting requirements and that carrier employees could be educated to know and understand the meaning of the identification. MTB agrees with these commenters and has decided that the letters "RQ", entered on shipping papers and packages (other than portable tanks, (cargo tanks and tank cars), in association with required descriptions, will be sufficient to implement the identification of

hazardous substances. This decision also addresses the concern expressed by several commenters concerning the unique display of the letter "E" as was proposed in the Notice.

Many commenters discussed the significant impact of the proposed regulations on consumer commodities expressing the view that, if adopted, the effective use of the ORM-D hazard class would be essentially negated and that the concept of limited quantities would be destroyed. MTB believes that this concern has been overcome by the manner in which it has defined hazardous substances for purposes of application of the hazardous materials regulations.

While the regulations for hazardous substances adopted by DOT in these amendments are closely related to those of the EPA found in 40 CFR Part 117, they are not identical in their applicability. EPA's regulations require, without qualification, notification of discharges of reportable quantities of hazardous substances under conditions specified in § 311(b)(5) of the Clean Water Act and, as specified in the notice, provisions of 40 CFR 117.21. The DOT regulations require notification when a reportable quantity is discharged from a package (e.g., a drum, cargo tank motor vehicle or tank car) that is marked or documented as containing a reportable quantity.

Persons who do not have knowledge that a reportable quantity of a hazardous substance has been discharged are not required by EPA to make notifications. MTB has been advised by EPA that it will not bring civil or criminal suit for failure to make notification when such notification is not required by DOT's regulations, unless it can be shown that there was actual knowledge that a reportable quantity was discharged.

Shippers and carriers must also bear in mind that compliance with the provisions of this rule do not relieve them from possible civil liability under § 311 resulting from discharges of reportable quantities. This liability relates to the discharge itself and removal costs and is addressed in regulations promulgated by the EPA and the U.S. Coast Guard.

HM-159 (HM-118)—Forbidden materials

This rule adds the names of materials to the Hazardous Materials Table that MTB considers to be too hazardous to be permitted in commercial transportation. Also, the rule adds N-methy-N'-nitro-N-nitrosoguanidine as a flammable solid and adds a new § 173.179 prescribing packaging requirements for this material. Changes have been made to §§ 173.21 and 173.51 pertaining to forbidden materials and packaging.

A total of 28 comments were received in response to the Notice. All commenters were in general agreement with the proposal to add certain materials considered to be too hazardous for commercial transportation to the Table. A commenter presented data indicating that 2,6-dichloro-4-nitrophenol is not a forbidden material. MTB agrees with the data presented and this material has been removed from the list. The same commenter also stated that some iodoso compounds might be considered forbidden, but that others would not be in this category. Pending further detailed investigation of these substances, the proposed entry of iodoso and iodoxy compounds (dry) has been removed from the list of named forbidden materials.

A comment from a manufacturer of organic peroxides suggested that the term "active oxygen" would be better than "available oxygen" for those entries in the Table containing such limitations. MTB agrees with the commenter and the term "active oxygen" has been substituted for the term "available oxygen."

Two air carrier associations concurred in the proposed § 172.100(d) and suggested that the idea contained in that section be applied to all commodities in the Table. Based on these comments, MTB has reviewed the entire use and meaning of the asterisk in the Table and has decided to eliminate the asterisk, thus allowing a shipper to determine if a specific material should be regulated under the hazard class identified in the Table. However, in conjunction with this change, it is necessary for MTB to introduce a new symbol into the table in order to identify those materials which have been designated as hazardous materials of a particular class, whether or not they meet the definition for the hazard class in which they have been designated. If a shipper wishes to ship a formulation of a material identified by the plus (+) symbol as non-regulated, or in a class other than that specified in the Table, he must supply the Associate Director, Office of Hazardous Materials Regulation, MTB with data which establishes that it does not present a hazard in transportation, or presents a different hazard than that which is listed in the Table.

Another commenter objected to the limiting of peroxyacetic acid to 40% by weight instead of the 43% authorized in the UN Recommendations and the IMCO regulations. There are several current organic peroxide entries which have different concentration limits in the UN Recommendations and the DOT Hazardous Materials Regulations. Since the concentration limits in the UN Recommendations were agreed to by the U.S. delegations to the UN meetings, MTB has revised the limits in the Table to agree with those in the UN Recommendations.

Several commenters objected to all or parts of the proposed revision of § 173.21. Some organic peroxide manufacturers objected to the use of 130°F. in paragraph (a)(2) because their interpretation was that this temperature is the minimum decomposition temperature for which refrigeration would be required. They argued that they have shipped certain organic peroxides with decomposition temperatures of 120°F. without refrigeration for years and, also, that the UN Recommendations use 122°F. as the decomposition or polymerization temperature below which refrigeration is required for the most active organic peroxides. MTB considers 130°F. the maximum temperature that could be expected during transportation, and there are many sections in the regulations which reference 130°F. The fact that an organic peroxide, or any other material, decomposes below 130°F. does not necessarily mean that it must be stabilized or refrigerated. The paragraph states in part "with an evolution of a dangerous quantity of heat or gas . . . ." If the decomposition or polymerization does not create a hazard in transportation, the provisions of the paragraph do not apply regardless of the decomposition temperature of the material. Therefore, the temperature reference of 130°F. has been maintained in the final rule.

Several commenters objected to the fact that § 173.21(a)(2) did not contain a statement concerning the time a material would have to be exposed to the 130°F. temperature in order to be considered forbidden from transportation. MTB agrees that this is a weakness in the proposed wording and has altered the wording of the rule to reference two test methods. The test methods are: ASTM E-487 "Standard Method of Test for Constant Temperature Stability of Chemical Materials" and the Organic Perioxide Producers' Safety Division (OPPSD) "Self Accelerating Decomposition Test (SADT)." Several commenters expressed concern that this paragraph does not make it clear that approvals issued by the Bureau of Explosives would be continued in effect until an orderly transition to approval by the

Associate Director for Operations and Enforcement, MTB could be accomplished. MTB acknowledges the validity of the objection and has included a clarification statement in the rule which references § 171.19.

Several commenters stated that proposed § 173.21(a)(3) was too vague and it was suggested that a phrase be added such as ". . .e.g., the release of flammable vapor in such quantities that an explosive mixture would be created within the transport vehicle." MTB agrees with this objection, and wording to the effect of that suggested has been included in the rule.

On July 9, 1974, the Hazardous Materials Regulations Board, the predecessor of MTB, published a Notice a Proposed Rulemaking under Docket No. HM-118 proposing to list and classify polystyrene resin, expandable, containing a flammable liquid or gas, as a flammable solid. No final action was taken on this rulemaking proposal. Section 173.21(a)(3) of this rule will forbid the offering for transportation of packages which evolve a dangerous quantity of flammable gas or vapor from a material not otherwise subject to the regulations. MTB believes this prohibition is sufficient to preclude the type of potential hazard which was the concern addressed by the Hazardous Materials Regulations Board in its proposal under Docket No. HM-118. Therefore, the proposals under Docket No. HM-118 are hereby terminated.

Several commenters said that § 173.21(a)(4) needed clarification. The objections were based on the fact that there was no definition of detonation and that there is no recognized test method for determining whether detonation has occurred in a package as a result of a thermal stimulus. In response to the first objection, MTB has included a definition of detonation in the final rule. The second objection is not correct. There are three tests specified in the regulations for determining whether a packaged material detonates as a result of a thermal stimulus. One of these is described in § 173.88(g), Note 2. Another method is found in DOD TB 700-2 (May 19, 1967) which is referenced in §§ 173.86(b) (2) and (3). Both of these test methods have been in the DOT regulations for many years and have been used extensively on both military and commercial materials to determine whether a detonation will occur in a package exposed to a thermal stimulus. While both test methods were designed for testing propellants, they can be and have been used to test other hazardous materials. The third test method is described in § 173.114a(b)(6) and may be used in evaluating whether a detonation has occurred. MTB has considered it inadvisable to reference these methods in this rule because such a reference could suggest that a chemical manufacturer who is not familiar with testing explosives should attempt to perform these tests. This type of testing should be done only by personnel who are well versed in the testing of explosives and this fact has been stated in the rule.

Docket HM-171—Use of United Nations Shipping Descriptions

The amendments under this Docket authorize the use of United Nations shipping descriptions and identification numbers for certain hazardous materials in place of the descriptions required by existing DOT regulations. These amendments are intended to facilitate the international transportation of hazardous materials and to minimize the economic burdens imposed on shippers by the multiplicity of package markings and shipping paper descriptions now required for compliance with both domestic and international requirements. In addition, the amendments provide optional stowage locations for hazardous materials when transported by vessel. The optional stowage locations authorized are those provided for the particular hazardous materials in the International Maritime Dangerous Goods (IMDG) Code published by the Inter-Governmental Maritime Consultative Organization (IMCO).

A number of comments were received which expressed complete support for the proposal. In general, the supporting commenters endorsed the proposal since it would eliminate costly redundancy in shipping paper descriptions and packaging markings. One supporting comment is quoted since it provides some quantification of the importance of the international transportation of chemicals to our economy:

> Shipments of chemicals and allied products were valued at $120.5 billion in 1978. The export activity continued to be strong in 1978 with the value of all chemical exports totaling $12.62 billion, an increase of 16.7 percent over 1977. While the imports of chemicals also increased, the favorable balance of trade in the chemical area increased from $5.84 billion in 1977 to $6.19 billion in 1978, a gain of 6 percent. In the future, these shipments are expected to increase and will be affected by international regulations to a greater degree.

Several comments were received expressing opposition to the proposal. It should first be noted that many of the issues raised concerned the use of IMCO classifications and labeling for certain hazardous materials. Although limited to import and export shipments in the present regulations, this authorization has been a provision of the DOT regulations since adoption of amendments under Docket No. HM-112 in 1976. For this reason, MTB believes it is reasonable to assume that shipper and carrier personnel should, in the execution of their responsibilities in the preparation and acceptance of shipments, already have gained a basic familiarity regarding the use of IMCO classifications and labels as an alternative to the class and labels prescribed for certain hazardous materials in § 172.101.

The fundamental argument raised in opposition to the proposed amendments is that the existence of an optional hazardous materials list will, in the words of one commenter, have a "chaotic effect" on the regulated industries, particularly on the rail and motor carrier industries, because it would complicate the regulations. MTB agrees that the provision of options to various requirements increases the volume of regulations and, to a certain degree, their complexity. In spite of this fact, experience has shown that such regulatory provisions are essential if the regulations are to be effective without unnecessarily burdening industry. For example, it could be argued that the hazardous materials placarding requirements could be vastly simplified by eliminating the "DANGEROUS" placard and certain exceptions to the placarding requirements, and simply requiring that appropriate placards be displayed for each hazardous materials transported regardless of quantity. Such simplification is obviously not in the best interests of the regulated industries and would undoubtedly be declared totally unacceptable by the very commenters who oppose the amendments under Docket HM-171. MTB believes that these amendments will do much to enhance safety by minimizing redundant, conflicting and confusing shipping paper and package marking requirements. Under the current practice of incorporation of IMCO classification and labeling provisions by reference, it is difficult for rail or motor carrier personnel to determine compliance with these provisions. The optional list will eliminate confusion and errors on the part of carrier personnel by making this information readily available to them in § 172.102.

A number of objections to the proposed amendments were raised on the basis of placarding implications. One commenter expressed concern that rail carrier personnel would be unable

to replace missing placards with placards conforming to IMCO labels. The proposal did not address the use of placards conforming to IMCO specifications either in place of, or in addition to, DOT placards. This same commenter also incorrectly interpreted the existing § 171.12(b) as allowing freight containers to which IMCO enlarged labels have been affixed in place of DOT specification placards, to be transported by railway, motor vehicle or aircraft in the United States.

Several commenters suggested that use of the optional list will make it impossible for carrier personnel to verify the correctness of placarding and various operational measures such as segregation. Still other commenters requested clarification of the relationship between offering a material under its classification in § 172.102, and the DOT placarding requirements. Both placarding and segregation, as well as other operational considerations such as car placement, are dictated by the classification of the particular hazardous material. It is for this reason that, when a material is offered under its IMCO class, the name of the DOT class which most closely corresponds to that IMCO class must be shown as part of the description on shipping papers. This indication is currently required by § 171.12(b) and was subsequently proposed for inclusion in § 172.102. When a shipper offers a hazardous material under the class provided in § 172.102, it is that class which governs all applicable transportation requirements regardless of what the classification of the material might be under § 172.101. Since the DOT class name corresponding to that IMCO class will be written out in the basic description, carrier personnel need only verify that the class shown on the shipping papers is, in fact, the class shown for that description in § 172.102, and that placarding, segregation, etc., have been accomplished as required for the class under which the material is offered.

A commenter noted that the classification of certain hazardous materials was different in § 172.101 and § 172.102. It was precisely this observation which prompted the authorization currently contained in § 171.12(b) which accommodates these classification differences so that it is not necessary for shippers to relable their export shipments.

The same commenter observed that the proper shipping name, marking, labeling and placarding may be different for different shipments of the same material from the same shipper. This is a valid observation that could also be made regarding existing authorizations contained in § 171.12(b). In the period since § 171.12(b) was adopted in 1976, MTB has not been informed that this potential difference in description, classification and labeling provisions for the same material offered by a particular shipper has created any difficulties. In addition, MTB believes that by extending the authorization to use optional descriptions, labeling and classification to domestic as well as international transportation, individual shippers will tend to use one of the two options for all shipments of a particular material rather than prepare some shipments according to § 172.101 and other shipments according to § 172.102.

One commenter, who represents a large group of motor carriers, maintained that "* * * to allow a second type of shipping description to be utilized by shippers in the U.S., in place of those specified in existing rules which have been in place only 2-½ [sic] years is wrong" because it invites non-compliance and results in expensive retraining of personnel, and summarized the proposal as "* * * another case of the international shipment tail-wagging the domestic dog." MTB questions the implication that expensive and extensive retraining of carrier personnel will be necessitated by the adoption of Docket HM-171. In general, carrier personnel will have to be informed that, should they not find in § 172.101 a hazardous materials description which appears on a shipping paper, they should check to see if it appears in § 172.102. If it does not, the shipment is in non-compliance. If it does appear, they may then proceed to verify the correctness of the classification, labeling, placarding, etc. For this reason, MTB does not believe this change will result in a necessity for extensive retraining of personnel.

This same commenter offered a National Transportation Safety Board (NTSB) report on non-compliance with the hazardous materials regulations in support of this argument that adoption of the optional list would further complicate the regulations and detract from transportation safety. MTB does not accept this argument for reasons previously stated and would draw the attention of this commenter to the fact that NTSB has supported this proposal as being "* * * responsive, in part, to the Safety Board's Recommendation I-78-71 dated January 17, 1978, in that it provides for the use and cross-reference of IMCO shipping descriptions."

One commenter suggested that the need for an optional hazardous materials list could be eliminated for import/export shipments by retaining existing § 171.12(b) and by allowing the IMCO description for a material to appear on shipping papers and requiring that the description and class of the material appearing in § 172.101 must precede the IMCO proper shipping name and class on the shipping papers. Adoption of this suggestion would be more restrictive than current regulations in that, in addition to a requirement to always show the proper shipping name from § 172.101, the class prescribed for the materials in § 172.101 would also have to be indicated. Under the existing regulations, the IMCO classification may be used in place of the DOT class for import/export shipments of certain hazardous materials. For this reason, and because this suggestion would do nothing to eliminate redundant shipping paper description and package marking requirements, the suggestion is not adopted. This commenter also maintained that authorization to use IMCO descriptions for purely domestic transportation was "totally unacceptable" at this time because the IMCO system is obscure to carrier and emergency response personnel. MTB notes that water carrier personnel have been successfuly using the IMCO system for several years and that, as indicated in numerous comments, this segment of the carrier industry does not agree with the statement made by this commenter. Furthermore, as previously stated, one of the benefits of the optional list, as opposed to the existing practice of incorporation of IMCO by reference, is that it removes the "obscurity" of the IMCO system by placing the necessary information in the hands of all carrier personnel. MTB assumes also that carrier personnel have been properly trained to deal with the current authorization for use of IMCO descriptions, classes and labels for import/export shipments. With the provision of this information in § 172.102 readily available for use by all carrier personnel, MTB can see no valid reason why the option should not be extended to domestic as well as import/export shipments.

A commenter noted that certain materials have different identification numbers assigned under § 172.101 and § 172.102, and that this difference could thwart emergency response efforts. These differences result from the fact that IMCO lags several years behind the UN in adoption of UN Recommendations. The identification numbers assigned in § 172.101 have been based on the most recent UN Recommendations while those indicated

in § 172.102 are those identification numbers assigned to materials in the current edition of the IMCO Code. It is essential that § 172.102 be maintained consistent with the IMCO Code to prevent frustration of international shipments. These occasional number differences should not affect response actions since the Emergency Response Guidebook has been designed to function with identification numbers contained in either list.

A request was received to include in the regulations a list of countries who have adopted the IMCO Code. MTB does not believe it appropriate to include such a list in the regulations. This information, is, however, available from MTB upon request.

The Emergency Response Guidebook

Notice 79-9, under Docket HM-126A (44 FR 32972), included a discussion of MTB's proposed distribution of a manual. This document is now entitled "Emergency Response Guidebook" (ERG). Its development is completed and it is expected that its production will begin within forty-five days after publication of these amendments. The format of the ERG is essentially the same as was discussed in the Notice.

The MTB is completing its planning for distribution of the ERG, without charge, to emergency response entities throughout the United States. MTB has been advised by two firms that they plan to make commercial distribution of the ERG.

Since the ERG contains materials closely associated with the regulations published herein, it bears a copyright provision authorizing its reproduction, without modification, without further permission from DOT.

The MTB expresses its appreciation to the many individuals, organizations and businesses that assisted in the development of the ERG. The many exchanges of ideas and information resulted in the development of a much improved document. MTB recognizes that further improvement will be suggested and may be warranted; therefore, it contemplates that the ERG will be republished in approximately two years.

Corrections

MTB anticipates that a limited number of errors will be discovered upon review of the amendments in this publication; e.g., a printing error in the pound or kilogram entries for "E" identified materials in the Table to § 172.101. MTB plans to handle corrections in one Federal Register publication before September 1, 1980. Any person discovering an error may contact the individuals named earlier in this preamble, directly by telephone or by letter. A distinction should be made between discovery of errors and taking exception (disagreeing) with MTB's decisions concerning substantive matters in the amendments. Substantive matters will be handled in accordance with 49 CFR 106.35 and 106.37.

Review by Sections

Section 171.1. Section 171.1 is revised from its proposed scope in Dockets HM-145A and HM-145B to specify the applicablity of the Hazardous Materials Regulations with regard to the transportation of hazardous wastes and hazardous substances by intrastate motor carriers. No such distinction is considered necessary relative to transportation by rail car, aircraft or vessel since the nature of such modes makes their operations subject to DOT's regulations without regard to the intrastate or interstate nature of individual shipments. The revision of this section was not proposed in the Notice. However, this does not constitute a substantive change since the new § 171.1 language merely includes hazardous waste and restates the jurisdictional scope originally proposed in §171.3, which was discussed in the Notice to Docket HM-145A preamble. In anticipation of applications to EPA for interim authorizations to manage State hazardous waste programs pursuant to procedures specified in 49 CFR Part 123, MTB has excluded intrastate hazardous waste motor carriers from the application of the regulations in States holding interim authorizations (See Section 3006 of the RCRA).

Section 171.2. Two minor amendments are made to this section to reduce the references to § 171.12 and to add a reference to § 176.11. The provisions of current § 171.12(b) are transferred to the new § 172.102. These changes were proposed in Docket HM-171.

Section 171.3. Section 171.3 contains the basic requirements pertaining to the offering, transportation, and delivery of hazardous wastes, generally as proposed in Docket HM-145A. It should be noted that the applicability of specific hazardous waste requirements is based on a determination that a hazardous waste manifest is required according to EPA's regulations in 40 CFR Part 262. Under paragraph (b), a motor carrier may not transport a hazardous waste for which a manifest is required unless the carrier is identified on the vehicle in the manner prescribed by 49 CFR 397.21, one of the Federal Highway Administration's Federal Motor Carrier Safety Regulations, or 49 CFR 1058.2, a regulation of the Interstate Commerce Commission. This requirement applies when a manifest is required, regardless of the quantity of wastes transported. Paragraph (b)(2) requires compliance with the manifest requirements, and paragraph (b)(3) specifies the limitations on the delivery of wastes. A note is added following paragraph (b) emphasizing the fact that penalties exist for discharging hazardous waste at other than designated facilities. Paragraph (c) (§ 171.3(e) of the Notice) addresses those actions of a state, or its political subdivision, considered inconsistent with DOT's Hazardous Materials Regulations. A change has been made to proposed § 171.3(c)(3) that was not contained in the Docket HM-145A Notice to clarify the fact that hazardous waste manifests are considered to be shipping papers when they are being carried aboard transport vehicles. Paragraph (d) specifies the conditions under which an official may authorize the removal of a waste without the preparation of a manifest when a discharge occurs during transportation. Note 1 to this section provides advisory information to shippers and carriers that they are required by EPA's regulations to obtain identification numbers. Note 2 quotes EPA's regulation pertaining to the clean up of hazardous wastes discharged during transportation. With the addition of these two notes, and the amendments to the regulations set forth in this action, EPA has stated in its rules (see 40 CFR 263.10; 45 FR 12743, February 26, 1980) that carriers (transporters) of hazardous wastes will know of the hazardous waste transportation requirements applicable to their operations by reading DOT's Hazardous Materials Regulations (and Note 2 to § 171.3) without the necessity of reading EPA's corresponding regulations.

As published, § 171.3 differs from the version shown in the Notice. Most of the textual change eliminates unnecessary duplication of requirements proposed and adopted elsewhere in the rule. The reference to 49 CFR 397.21 has been adjusted to reflect the necessity of displaying the required vehicle markings regardless of whether or not placarding is necessary, a fact to which the scope of § 397.21 otherwise keys. Proposed, but not adopted, was a lengthy reference to an exception for certain shipments not subject to EPA hazardous waste manifest requirements. This exception has been broadened to include all shipments not subject to EPA manifest requirements and therefore not incorporated into the DOT definition of

"Hazardous waste" in § 171.8 of this rule.

To preclude anticipated problems, MTB has provided for the substitution of equivalent specification drums for hazardous wastes that may be impractical to package in the authorized specification drums.

Section 171.7. In § 171.7 paragraphs (c)(27), (c)(28), (d)(5)(ix), (d)(20), (d)(21) and (d)(22) are added. Paragraph (d)(20) is added to recognize the latest edition of the NIOSH Registry of Toxic Effects of Chemical Substances as an acceptable source of common names, chemical names and trade names that may be used in place of a technical name to meet the requirements of § 172.203(k). Paragraph (d)(21) is added to provide proper reference to the UN Recommendations on the Transport of Dangerous Goods which had been cited in § 172.519 in Docket HM-103. The other additions to this section provide citations to obtain test methods used to determine thermal stability (as addressed in § 173.21). An explanation of the addition of these test references can be found in the portion of the preamble of this document addressing Docket HM-159.

Section 171.8. Section 171.8 contains definitions related to hazardous wastes and hazardous substances, revised somewhat from those proposed in Dockets HM-145A and HM-145B. Note that the definition of "Hazardous waste" is limited to materials that are subject to EPA hazardous waste manifest requirements specified in 40 CFR Part 262. Added to the definition is a qualification concerning manifests so that carriage of hazardous wastes in States holding interim authorizations from EPA, in accordance with 40 CFR Part 123, is not excluded from the application of DOT's Hazardous Materials Regulations (other than carriage by intrastate motor carriers—See Section 171.1(a)(3)). As stated earlier, MTB believes that a nationwide standard for manifests is an important factor in accomplishing the safe and effective delivery of wastes to designated facilities. This factor is particularly important relative to the operations of carriers transporting materials in interstate commerce. Note also that for the purposes of the DOT regulations, a material is a hazardous substance based on certain conditions that are set forth in the definition. Any hazardous material that may also be a hazardous substance under DOT regulations is identified in the Table by the letter "E" along with the reportable quantity for that material. When a material identified by the letter "E" is in a mixture or solution, the material is evaluated against the percentage concentration by weight in paragraph (d) to determine whether it falls within the definition. If a pure material is involved, or a mixture or solution with letter "E" materials which equal or exceed the paragraph (d) concentrations, the final step is to determine if it is a hazardous substance. For the purposes of DOT regulations, a material identified by the letter "E" becomes a hazardous substance when a reportable quantity (indicated in pounds and kilograms following the proper name) is contained within one package, or if not packaged, within one transport vehicle. For a mixture, each material must be separately evaluated since a hazardous substance determination must be made for each letter "E" material in a mixture. Thus, a package with a net weight of 20 pounds and containing a mixture of material "A" having an RQ of 10 pounds and "B" having an RQ of 100 pounds could, depending on the concentration, contain a hazardous substance with regard to "A", but not "B." Different percentages of an RQ for each substance in a mixture would *not* be aggregated. Note well that letter "E" materials that are not classed as ORM-E's, are hazardous materials even if they are not hazardous substances.

Section 171.12. Paragraph (b) of this section is no longer necessary since its provisions are contained in § 172.102 as proposed in Docket HM-171. Therefore, this paragraph is replaced by an appropriate cross reference to § 172.102.

Sections 171.15 and 171.16. It was proposed, in Dockets HM-145A and HM-145B, to set forth the hazardous waste and hazardous substance discharge reporting requirements in a new § 171.17. However, EPA has proceeded to align its hazardous waste discharge reporting requirements closely with those presently set forth in DOT's Hazardous Materials Regulations. Therefore, a new provision is not necessary and § 171.15 is modified to make it clear that hazardous wastes are covered by the reporting requirements, and § 171.16 is modified to require that a copy of the hazardous waste manifest (or other document used in place of the manifest) be attached to the report, thereby ensuring the availability of information such as generator and carrier identification numbers. The only other change to the present DOT reporting requirement is the required entry of an estimate of the amount of waste removed from the site of a discharge, the name and address of the facility to which it was taken, and the manner of disposition of any unremoved waste. This information is to be entered in the "Remarks" portion of the presently required report. MTB added the toll call telephone number to §§ 171.15 and 171.17 for reporting hazardous waste and hazardous substance discharges from locations where toll free 800 numbers do not apply, such as Hawaii, Alaska and Puerto Rico.

Section 171.17. Section 171.17 provides a reporting requirement for the discharge of a hazardous substance that is closely aligned with the notification requirement of § 311 of the Clean Water Act. The final rule requires notification when the carrier determines that a hazardous substance in transportation has been discharged into the navigable water or adjacent shorelines. This is a lesser reporting requirement than was contained in notice to Docket HM-145B in which it was proposed that each discharge of a letter "E" material be required to be reported, regardless of the location of the discharge and whether it was a sufficient quantity to constitute a hazardous substance.

Section 172.101. Present §§ 172.100 and 172.101 are combined into a revised and amended § 172.101 in order that the Hazardous Materials Table and the language introducing the Table may be contained in one section of the regulations. Indications of changes are to the language presently appearing at § 172.100, which as a result of this rule will appear at § 172.101. Paragraph (a) has been revised to accommodate this change.

The introductory text to pargraph (b) is revised to eliminate the asterisk (*), add the plus (+), and to include the letter "E."

Paragraph (b)(1) is revised to acknowledge the new plus symbol (+) in column 1 for material in column 2. The plus (+) was added to this section to identify materials for which the hazard class is fixed, without regard to whether the material meets the definition of the hazard class assigned. The asterisk (*) is no longer referenced in this paragraph or in column 1 of the Table. Justification for the removal of the asterisk, is discussed in this preamble text dealing with HM-159. An alternate shipping name and hazard class for materials may be authorized by the Office of Hazardous Materials Regulation, MTB upon submission of data justifying such reclassification and description changes.

Paragraphs (b)(2) and (b)(3) are modified to exclude from any limitation of requirements to single mode applicability those materials which are hazardous wastes or hazardous

substances, both of which are subject to certain regulations regardless of the mode of transportation involved. Paragraph (b)(4) is added to include the meaning of the letter "E" used in column 1 of the Table. The letter "E" identifies materials named in column 2 that may be hazardous substances depending on quantity contained in a single package, in which case they are subject to applicable regulations regardless of the transporting mode. It is important to note that although a hazardous material may be reclassed according to its hazard(s), if a hazardous substance does not meet the definition of any other hazard class, it must be reclassed as such (ORM-E) and shipped in accordance with the applicable regulations for hazardous substances.

The introductory text to paragraph (c) is revised editorily to reflect the authorized modification of a proper shipping name as specified in paragraphs (b)(4), (c)(10), (c)(11), (c)(12) and (c)(13).

Paragraph (c)(4) has been amended by adding a recommendatory sentence indicating that the sequence of each entry as shown in column 2 of the Table is the preferred sequence for marking and shipping paper requirements. The use of the preferred sequence will better enable emergency response personnel to locate the material when using the Emergency Response Guidebook since it is this sequence which appears in the Guidebook. Paragraph (c)(5) is revised, as proposed in Docket HM-126A, to require the technical name to be used as the proper shipping name for all "see" references for Organic peroxides. This is discussed in the Docket HM-126A preamble.

Paragraph (c)(6) contains a provision to limit the application of the DOT Hazardous Materials Regulations concerning hazardous materials identified as poisons. Under this limitation, a hazardous material having the word poison or poisonous in the proper shipping name must be considered to be a poison only if tests indicate death resulted from systemic poisoning rather than by corrosive destruction of tissue. MTB believes this limitation is appropriate and will provide adequately for emergency response information.

Paragraph (c)(9) is added, as proposed in Docket HM-145B, to explain the addition of the reportable quantity to the Table as an italicized entry in parentheses following the proper shipping name of potentially hazardous substances in § 172.101. This makes the reportable quantity for each of these materials readily available for reference so a determination can be made as to whether a hazardous substance is being offered for transportation.

Paragraph (c)(10) is added, as proposed in Docket HM-145A as § 172.101(c)(8), to specify that a proper shipping name include the word "waste" when the material described is a hazardous waste subject to EPA's requirements in 40 CFR Part 262. Use of this method to appropriately prescribe the proper shipping name for a hazardous waste alleviates the necessity for the addition of hundreds of proper shipping name entries to the Table. Only one new shipping name "Hazardous waste, liquid or solid, n.o.s." is added to the Table for hazardous waste.

Paragraph (c)(11) is added to aid in improving the identification of hazardous materials for emergency response personnel. To reduce the use of n.o.s. entries, MTB is authorizing the use of the name of the hazardous material in certain solutions and mixtures as part of the proper shipping name. This new procedure provides a partial answer to questions such as "What is Acetone under DOT regulations?" by allowing a mixture of a hazardous material and non-hazardous materials to be identified by the proper shipping name of the hazardous material, providing the hazard class remains unchanged. Thus, an Acetone, water and mineral oil solution that is a Flammable liquid may be identified as Acetone solution, Flammable liquid instead of Flammable liquid, n.o.s.

Paragraph (c)(12) is added to provide a means for identifying hazardous substances when they are not identified in a proper shipping name. This could occur through the use of the proper shipping name Hazardous substance, liquid *or* solid (as appropriate), n.o.s., which was requested by commenters for mixtures or solutions of hazardous substances. MTB was provided with an example of a mixture of Toxaphene and Xylene with a flash point above 200°F. consisting of a hazardous substance (i.e., any letter "E" material that has equalled or exceeded a reportable quantity in one package). Therefore, the entry would be Hazardous substance, liquid, n.o.s. This would be followed by the hazard class, ORM-E, the identification number for Hazardous substance, liquid, n.o.s., which is NA9188, and the identifier, RQ. In association with the basic description, the name of the hazardous substance that equals or exceeds a reportable quantity in one package must be identified.

Paragraph (c)(13) contains a provision that was proposed in Docket HM-145B in paragraph (b)(1)(iii) and that has been revised by MTB for clarity. It also contains a requirement for consideration of forbidden materials and those materials identified with the plus (+) symbol when determining a hazard class for a material that no longer meets the defining criteria for the class shown for the material in the Table. For example, Xylene is identified with the letter E and is classed as a Flammable liquid. However, in certain mixtures, the flash point could be raised to between 100° and 200° F. and, if shipped in a cargo tank or tank car, could equal or exceed Xylene's 1,000 pound reportable quantity. In this case, it would meet the definition of a hazardous substance in § 171.8 and its proper shipping name would be Combustible liquid, n.o.s. It may not be shipped as Xylene under the paragraph (c)(11) rule because its hazard class has changed.

It is important to note that although a hazardous substance may be reclassed according to its hazard(s), if it does not meet the definition of any other hazard (and since by definition it is a reportable quantity), it must be reclassed as an ORM-E.

Paragraph (d) is revised as proposed in Docket HM-159 to clarify the intent of the term "Forbidden" as it appears in column 3 of the Table. The prohibition as "Forbidden" does not apply if the materials are diluted, stabilized or incorporated in devices and are classed in accordance with the definitions of hazardous materials contained in Part 173.

New paragraph (e) describes the addition of column 3(a) containing the identification numbers as proposed in Docket HM-126A. Present paragraphs (f), (g), (h), and (i) were formerly paragraphs (e), (f), (g), and (h) and contain no revisions.

MTB added paragraph (j) to establish a general grandfather provision for shipping paper entries and package markings for materials packaged before the effective date of an amendment to the Table that changes a proper shipping name or hazard class of a material in the Table.

Except for hazardous wastes and hazardous substances, if the proper shipping names or hazard classes of materials are changed by this rule, such changes are not mandatory prior to July 1, 1981, as stated in paragraph (k) of this section.

Hazardous Materials Table: The Hazardous Materials Table is amended to identify potentially environmentally hazardous materials through the use of the letter "E." These letter "E" materials include hazardous substances designated by the EPA under 40 CFR Part 117 and not presently subject to the

DOT regulations (classed as OMR-E), as well as presently regulated hazardous materials that have been designated by the EPA as hazardous substances. These latter materials are in two major categories. One is materials that are now listed by name in § 172.101, and the other is materials not now identified by name but which are now regulated under the n.o.s. listings in § 172.101. A total of 368 entries in the Hazardous Materials Table are identified as potentially hazardous substances. A total of 369 had been proposed, but EPA dropped Calcium oxide and Calcium hydroxide from their hazardous substance list and MTB did likewise. MTB added Aluminum sulfate, solid, to the ORM-E list. Aluminum sulfate, solution, remains as an ORM-B. Guthion is changed to a "see" entry referenced to the entry Azinphos methyl because Guthion is a registered trade name.

Fourteen potential hazardous substances are identified as ORM-A. This is based on the chemical, physical and other comparable properties of the compounds. The properties of these compounds are such that each compound can cause extreme annoyance or discomfort to passengers and crew in the event of leakage during transportation. Based on data provided by commenters, Xylenol was transferred from the ORM-E list to the ORM-A list and the following five ORM-A's were transferred to the ORM-E list:

2,4-Dichlorophenoxyacetic acid ester
2,4,5-Trichlorophenoxyacetic acid amine
2,4,5-Trichlorophenoxyacetic acid ester
2,4,5-Trichlorophenoxyacetic acid salt
2,4,5-Trichlorophenoxypropionic acid ester

Ninety-nine materials are classed as ORM-E. This is based on the EPA designation of certain materials as hazardous substances on March 13, 1978 (42 FR 10494), and the fact that according to MTB's evaluation they do not meet the defining criteria of any other hazard class. In addition to the five materials transferred from ORM-A to ORM-E as discussed above, Aluminum sulfate, solid, was added to the ORM-E's and Heptachlor and Vanadium pentoxide were reclassed from Poison B to ORM-E based on data provided by commenters. Also, the following changes in class assignments were made by MTB based on data submitted by commenters: Xylenol was reclassed from an ORM-E to ORM-A; Dodecylbenzenesulfonic acid was reclassed from an ORM-E to a Corrosive material; Ethylenediamine was reclassed from a Flammable liquid to a Corrosive material; and Sodium hydrosulfide, solid, was reclassed from a Flammable solid to a Corrosive material.

Although there appears to be a discrepancy between the number of newly identified materials in this proposal and the number of materials in the EPA list of hazardous substances, the materials in this proposal are those covered in the EPA list. The difference in the number of materials results from the necessity of identifying in § 172.101 the different forms, mixtures or solutions of a material for proper regulation. For example, "Aldrin" appears once in the EPA list and six times in § 172.101. Two materials, Calcium oxide and Calcium hydroxide, were dropped from the hazardous substance list by EPA. Therefore, neither is identified in the Table as a potentially hazardous substance; however, Calcium oxide remains as an ORM-B as it was before the EPA hazardous substance list was developed.

In addition to the changes to the Table to accommodate the potential hazardous substances, MTB made changes to improve packaging or to more accurately describe a hazardous material based on data provided by commenters. One commenter was concerned that MTB did not include a generic description for a flammable liquid that is also toxic. Dual hazards presented by some materials were addressed subsequently in HM-126B. Among others, the proper shipping name Flammable liquid, poisonous, n.o.s. with identification number UN 1992 was proposed. With this addition to the Table, both toxic and non-toxic flammable liquids are now covered by generic descriptions.

The discrepancy between identification numbers for Uranium Hexafluoride, fissile and Uranium Hexafluoride, low specific activity appearing in proposed HM-126A (NA9173 and NA9174, respectively) and the draft Emergency Response Guidebook (UN2926 and UN2927, respectively) has been corrected. The correct identification numbers are NA9173 and NA9174.

One commenter petitioned that morpholine, a flammable liquid, should be added by name to the Table. Morpholine appears by name in the UN Recommendations on the Transport of Dangerous Goods (UN2054), but not in the DOT Regulations. Since Morpholine is not in the Table by name, it must presently be described as Flammable liquid, n.o.s. MTB agrees and is adding the proper shipping name Morpholine to the Table, classed as Flammable liquid and assigned identification number UN2054.

One commenter was concerned that Pine oil was assigned identification number UN1272. Pine oil is listed by name in the Table and classed as a Combustible liquid. The UN Recommendations on the Transport of Dangerous Goods also lists Pine oil by name but classes this material as Flammable liquid. Since the upper flash point limit for the UN flammable liquid hazard class overlaps with the lower flash point limit for DOT's combustible liquid hazard class, and the emergency response for most flammable liquids and combustible liquids is identical, MTB believes that the appropriate identification number for Pine oil is UN1272.

One commenter suggested that the wrong identification number had been assigned to several proper shipping names and that the "UN" or "NA" prefix assigned to some identification numbers was wrong. The commenter submitted recommendations to correct these errors. Upon review, MTB has changed certain identification numbers and prefixes.

Another commenter stated that Hydrofluoric acid, anhydrous (UN1052) and Hydrogen fluoride (NA1790) are the same material and should be assigned the same identification number. MTB agrees with the commenter that UN 1052 is the correct identification number for both materials and has changed the Table accordingly.

Another commenter was concerned that the prefixes in the identification numbers assigned to certain cross referenced proper shipping names do not agree. For example, identification number NA1133 was assigned to Cement, liquid, n.o.s. but identification number UN1133 was assigned to Adhesive, n.o.s. which is cross referenced to Cement, liquid, n.o.s. In order to resolve the difficulty of assigning identification numbers to cross referenced proper shipping names, MTB is deleting identification numbers from certain proper shipping names that are cross referenced to another shipping description. This does not apply to organic peroxides because both entries are pertinent.

Various commenters reported that the Table has been affected by other final rules that have been published recently. MTB is well aware of this and has made necessary changes in the Table to keep it up to date.

Several commenters reported that certain potentially hazardous substances were classed incorrectly and submitted data to support their position. Additionally, these and other commenters stated that requirements and/or limitations for certain of these

materials were wrong or inconsistent with those for materials having similar properties. Based on the comments and MTB's evaluation, changes that affect hazard class, packaging, quantity in one package, etc., have been made.

At the request of a commenter, the proper shipping name Metal alkyl solution, n.o.s., classed as Flammable liquid, has been added to the Table. Addition of this entry, provides a better description for nonpyrophoric solutions of metal alkyls in flammable solvents than Flammable liquid, n.o.s. which is currently used. Also, the commenter stated that the emergency response for an accident involving metal alkyls in flammable solvents differs somewhat from that for a flammable liquid. Technical adjustments have been made to the descriptions for formaldehyde so the proper shipping name correctly describes the material as Formaldehyde solution. The hazard class depends on the size of the packaging, and the identification number assigned depends on the flash point of the formaldehyde solution. An alternate shipping name is Formalin, not Formalin solution. The section for specific packaging requirements for Nicotine, liquid referenced in the Table has been changed from § 173.358 to relect the correct reference, § 173.346.

MTB added Gasohol to the Table to reflect the increasing use of the gasoline-ethyl alcohol mixtures as a vehicle fuel and to permit an emergency response reference for it.

MTB has revised the entry for Aluminum sulfate, based on commenter recommendation, to include both the solid form and solutions. Aluminum sulfate, solid is classed as ORM-E, whereas Aluminum sulfate solution is classed as ORM-B.

One commenter expressed concern that Zinc phosphide had been incorrectly classed as a Flammable solid. Data submitted by the commenter indicated that Zinc phosphide meets the definition of a Poison B material and, although Zinc phosphide reacts with water, its reaction rate is so slow that liberated gases are dissipated before a hazard develops. MTB agrees and has reclassed Zinc phosphide as a Poison B.

One commenter took exception to the classification of Heptachlor as Poison B. Data he submitted included oral toxicity for analytical reference standard grade (99.8%) and technical grade (74%) heptachlor, and inhalation and skin absorption toxicity for technical grade heptachlor. Also, skin corrosion data was submitted. MTB agrees with the commenter that the data does not support classification of heptachlor as a poison B or corrosive material. Hence, Heptachlor has been reclassed as ORM-E.

One commenter pointed out that Dichlorvos is a Poison B liquid. However, the applicable sections for packaging referenced in column 5 of the Table (i.e., § 173.364 and § 173.365) are for a Poison B solid. The packaging references for Dichlorvos, therefore, are corrected to § 173.345 and §173.346, respectively.

Two commenters stated that they ship Dodecylbenzenesulfonic acid as a corrosive liquid. The properties are similar to an alkanesulfonic acid, which is listed by name in the Table and classed as a corrosive material. MTB agrees with these commenters and has reclassed Dodecylbenzenesulfonic acid as Corrosive material from ORM-E based on the data provided.

One commenter from a company that manufactures agricultural chemicals objected to the inclusion of Guthion as a proper shipping name. Guthion is the trade name for one of the company's registered pesticides. The commenter stated that azinphos methyl is the common name and should be the proper shipping name. As a compromise, MTB has added Azinphos methyl as an alternate name for Guthion.

A commenter stated that Zinc hydrosulfite does not meet the definition for a Flammable solid and that the material is not hazardous in transportation. The UN Recommendations on the Transport of Dangerous Goods lists Zinc hydrosulfite in Class 9—Miscellaneous dangerous goods. Goods listed in this class are not considered to be dangerous when transported by rail or motor vehicle. Thus, MTB has reclassed Zinc hydrosulfide as an ORM-A.

One commenter stated that Vanadium pentoxide had been improperly proposed to be classed as Poison B. Data he submitted indicate that the oral toxicity (LD_{50}) of Vanadium pentoxide is greater than 50 mg/kg. MTB review supports this conclusion, therefore, Vanadium pentoxide has been reclassed as an ORM-E.

Sodium hydrosulfide, solid, is reclassed as a Corrosive material. MTB had classed this material as a Flammable solid in the proposal based on information obtained from the United Nations Recommendations on the Transport of Dangerous Goods. However, data submitted by a commenter was sufficient for MTB to conclude that Sodium hydrosulfide, solid, is not a Flammable solid but is corrosive to skin.

Several commenters stated that pesticides identified and described by chemical groups based on their chemical structures provide sufficient information to specify appropriate action to be taken in event of an accident involving spillage or leakage. The 45 new descriptions for 15 pesticide groups identify the type of pesticide and enable first aid and medical advice to be linked to these pesticides. MTB agrees with the commenters that the n.o.s. modifier should be deleted from these descriptions. Coupled with other action taken in this rulemaking, this eliminates the proposed requirement to provide the technical name of the pesticide when a proper shipping name includes the chemical element or group. MTB now estimates that these descriptions cover at least 95 percent of the pesticides transported. Pesticides not described by technical names or family groups in the Table can be described by general or generic descriptions such as Insecticide, liquid, n.o.s.; Compound, tree *or* weed killing, liquid; Flammable liquid, poisonous, n.o.s. The use of a generic name or general description to describe a pesticide requires that the technical name of the pesticide be included as part of the shipping description. These commenters argued that the Table already contains descriptions for organic phosphates and the addition of three new descriptions for organophosphorus pesticides is not necessary. MTB believes that these new descriptions provide vital information on both the chemical structure and end use of the material. Many organophosphorus materials in commerce are not pesticides. Thus, the new organophosphorus pesticide descriptions do not apply to these materials. However, the descriptions for organic phosphates may apply.

A pesticide in the 15 chemical groups that does not meet the defining criteria for a flammable liquid and/or poison, may meet the definition of another hazard class and have to be described by a shipping name appropriate to that class. For example, an organotin pesticide in a liquid formulation that does not meet the definition of a flammable liquid or poison, may be a corrosive liquid. In this case, the proper shipping name for that organotin pesticide would be Corrosive liquid, n.o.s.

Nitrogen trifluoride was proposed to be listed in the Table as Forbidden in the notice to Docket HM-126B. MTB has made the necessary corrections based on commenter suggestions. Nitrogen trifluoride is classed as Nonflammable gas with identification number UN2451.

Two commenters objected to the proposed addition of Pinene to the Table

classed as Flammable liquid without an asterisk in column 1, since an asterisk denotes that a material may or may not be regulated under the class shown depending on whether or not the commodity meets the definition of the class listed for that entry. One commenter stated that tests conducted indicate that pinene has a closed cup flash point range between 99° and 100° F. With a flash point below 100° F., a material meets the definition of a Flammable liquid. With a flash point at or above 100° F. and below 200° F., a material meets the definition of a Combustible liquid. According to MTB data, pinene has two isomers. Alpha-pinene has a flash point of 91° F. Beta-pinene has a flash point of 117° F. The flash point of pinene containing an isomeric mixture falls between 91° and 177° F. and depends on the percentage of each isomer present. Since this rulemaking deletes all asterisks from the Table, pinene, when classed as a Flammable liquid, would be described as Pinene. When classed as a Combustible liquid, pinene would be described as Combustible liquid, n.o.s.

A commenter pointed out that "Alcoholic beverages", classed as Flammable liquid, in containers having a rated capacity of one gallon or less, are not subject to the hazardous materials regulations per § 173.118(c). Thus, the proposed one quart net quantity per package limitation for passenger carrying aircraft is wrong. MTB agrees and column 6(a) in the Table has been changed to read "See § 173.118(c)." This commenter also pointed out that the correct identification number is UN1170 and not NA1987.

Since the proper shipping name Engine, internal combustion has been proposed, one commenter recommended that Motor, internal combustion be deleted from the Table stating: "The motor receives its power from an outside source. The engine develops power internally." MTB does not dispute the commenter's argument, however, the description has been retained. The terms "motor" and "engine" have become synonymous in the automobile industry. MTB seriously doubts that motor companies in this industry would consider changing their names to engine companies.

A commenter objected to the proposed requirement to label hydrogen peroxide solutions (up to and including 52% peroxide) with a corrosive label to identify the secondary hazard. This commenter stated that "the non-corrosiveness for less than 52% is an industry fact." Based on the data presented, MTB has deleted the requirement for a CORROSIVE label on hydrogen peroxide solutions containing not more than 52% peroxide.

Comments were received concerning the new entry and requirements for Calcium hypochlorite, hydrated. The description has been revised to include in italicized print "(minimum 5.5% but not more than 10% water, and more than 39% available chlorine)". The material is a potential hazardous substance and has been so designated by an "E" in column 1 of the Table. The associated RQ is 100/45.4. Specific packaging requirements are referenced to § 173.217. This section contains packaging requirements for similar type compounds. The statement "keep cool and dry" has been added in column 7(c) of § 172.101.

Stowage requirements have been changed to authorize both "on deck" and "below deck" locations on board cargo vessels and passenger vessels for certain potential hazardous substances. The proposed regulation in Docket HM-145B authorized only "below deck" locations which were unduly restrictive.

EPA has changed the reportable quantity (RQ) for Calcium hypochlorite from RQ-10/4.54 to RQ-100/45/4. This change has been incorporated into the entry for Calcium hypochlorite mixture in the Table.

Several hazardous materials that contain one or more potential hazardous substances were not properly identified in the HM-145 proposal. The materials are identified now by an "E" in column 1. The RQ assigned to these materials is based on the RQ of the potential hazardous substance. If two or more potential hazardous substances are present, the lower/lowest RQ value is listed. For example, Nitrating acid (RQ-1000/454) is a mixture containing Nitric acid (RQ-1000/454) and Sulfuric acid (RQ-5000/2270). The other materials in this category that are identified in the Table as potential hazardous substances are Chlorosulfonic acid-sulfur trioxide mixture (RQ-1000/454); Hypochlorite solution (RQ-100/45.4); Methyl bromide and ethylene dibromide mixture, liquid (RQ-1000/454); Nitrating acid (RQ-1000/454); Nitrating acid, spent (RQ-1000/454); Nitrohydrochloric acid (RQ-1000/454); Nitrohydrochloric acid, spent (1000/454); Sodium nitrite mixed with potassium nitrate (RQ-100/45.4); Soduim nitrite mixture (RQ-100/454), and White acid (RQ-5000/2270).

Section 172.102. A new §172.102 is added as proposed in Docket HM-171. This section contains the Optional Table as well as the text necessary to explain the table and implement its use.

Paragraph (a) of this section sets forth the basic purpose of the Optional Table which provides hazardous materials descriptions, classification, labeling and vessel stowage requirements which may be used for certain hazardous materials as an alternative to the corresponding requirements provided in § 172.101. However, materials subject to the DOT regulations that are not considered dangerous under IMCO recommendations must be transported in accordance with the applicable DOT regulations. This exclusion has been included to insure that it is clearly understood that materials such as a combustible liquid with a flash point greater than 141° F. and less than 200° F. (in packagings with a capacity exceeding 110 gallons), which are not considered dangerous according to IMCO definitions are subject to all applicable DOT requirements.

A statement is also included in this paragraph to clarify the fact that many of the materials shown in the Optional Table are not subject to the DOT regulations and that their inclusion in the Optional Table does not constitute a designation of the material as a hazardous material. Only materials (1) designated as hazardous materials in § 172.101, including hazardous wastes and hazardous substances; (2) identified as forbidden in § 172.101; or (3) covered by the prohibition specified in § 173.21 or § 173.51, are subject to the DOT regulations. Entries for materials not designated as hazardous in § 172.101 are retained in the Optional Table to alert persons who may be engaged in importing or exporting such materials that the materials may be considered hazardous under widely applied international standards and to provide basic guidance relative to the classification and labeling of these materials in international transport.

One commenter suggested that proposed § 172.102 should be amended to recognize the fact that materials not regulated by DOT may be described on shipping papers by the IMCO proper shipping name and hazard class, and the package marked and labeled as provided in IMCO. MTB believes this change is unnecessary. Section 172.401, concerning prohibited labeling, specifically authorizes labels prescribed by IMCO to be applied to packages even though the material may not be considered hazardous under the DOT regulations. Regarding shipping paper descriptions and package markings, the DOT regulations do not prohibit description and marking as prescribed by IMCO in the case of materials not regulated by DOT. It is, however, suggested that in such cases the shipping papers bear a notation

indicating that the particular material is not subject to regulation under the DOT Hazardous Materials Regulations. The same commenter suggested that the proposed § 172.102 be revised to include a specific authorization to allow IMCO placards to be affixed to portable tanks and freight containers in addition to any placards required by the DOT regulations. MTB believes this comment has merit and it will be addressed in a future rulemaking.

Paragraph (b) of § 172.102 specifies conditions under which the description, class or label(s) provided in the Optional Table may be used rather than the DOT description, class or label(s), respectively. Class A and B explosives and radioactive materials are excluded from application of the provisions of § 172.102. Therefore, in order for a shipper to determine if he may use the Optional Table he must first establish the hazard class of the hazardous material under consideration in accordance with all applicable requirements of the DOT regulations. This is particularly important in the case of explosives where the hazard class may not necessarily be established solely by the shipper. Once the shipper has classed the hazardous material as provided in the DOT regulations, has determined that the material is not a Class A or B explosive or a radioactive material, and is not a forbidden material, he may then proceed to use the Optional Hazardous Materials Table if he so desires.

One commenter suggested that a symbol be introduced in Column (1) of the Optional Table to indicate to a shipper that a particular material listed is not subject to the DOT Hazardous Materials Regulations. Another commenter suggested that a symbol be introduced in Column (1) to indicate to a shipper that a particular material is considered a hazardous substance under the Hazardous Materials Regulations. MTB believes that neither of these amendments is necessary and that adoption of these amendments could result in improper use of the Optional Table. As stated in § 172.102(a), designations of materials as hazardous materials are made only in § 172.101. Therefore, it is always necessary to determine whether a material is regulated, and, if regulated, the appropriate description and class for the material provided in § 172.101, before using the Optional Table.

Several commenters suggested future inclusion of Explosives A and B entries in the Optional Table. Although MTB is not prepared to recognize IMCO description, classification, and labeling provisions for these materials for transportation in the United States at this time, this information has been included in § 172.102 with the letter "N" indicated in Column (1) adjacent to each entry.

The conditions in the existing § 171.12(b) under which the IMCO class and label(s) may be used when a hazardous material is transported by air, highway, or rail have been retained in § 172.202, with the exception of the condition that limited the application of that paragraph to import, export or transiting shipments. The IMCO shipping name may be used only when the material conforms to all additional defining or limiting conditions prescribed for the description in the appropriate schedule in the IMCO Code. Individual IMCO Code schedules often contain criteria or additional information which limit the applicability of a particular description, and MTB believes that these additional provisions must be observed in selecting an IMCO shipping description from § 172.102. The use of an IMCO shipping name is also made conditional upon inclusion of the UN number shown for the entry (if any) in the Optional Table immediately after the required class entry in the shipping papers. This is required not only to insure consistency with the United Nations standards for transport documentation, but also to enhance emergency response capabilities.

Paragraph (e) of § 172.102 requires that the description for a material designated as a potential hazardous substance in § 172.101 and offered for transportation as a hazardous substance (i.e., a reportable quantity in a single package) must be augmented by the technical name of the substance if that name does not appear in the optional shipping description. This is to insure that hazardous substances do not lose their basic identity when a shipper chooses to use a shipping description from the Optional Table in place of the name that would be otherwise required by § 172.101.

One request for clarification of the intent of paragraph (e) was received. The provisions of this paragraph would only apply to a material that is transported as a hazardous substance under § 172.101, but is offered for transportation under a description in the Optional Table. Materials designated as potential hazardous substances are identified by the letter "E" in Column (1) of the Hazardous Materials Table in § 172.101.

One commenter proposed that entries be inserted in the Optional Table in connection with IMCO's provisions for limited quantity shipments. MTB considers the addition of these entries inappropriate in that they are not considered proper shipping names under the IMCO Code.

Paragraphs (f) through (l) explain the content of Columns 1 through 7, respectively, of the Optional Table. Column 1 contains the letter "N" adjacent to certain entries. This indicates, as explained in paragraph (f), that the particular shipping description, class and label(s) shown in § 172.102 are not acceptable alternatives to the applicable DOT requirements in § 172.101 and, therefore, may not be used. This prohibition is imposed only when MTB believes the IMCO description and/or classification appearing in § 172.102 will not adequately communicate the hazard(s) of the material in all modes of transport.

Column 2 of the Optional Table lists the proper shipping names contained in the IMCO Code. The basic format of entries and methods of selection and presentation of proper shipping names on shipping documents and packages are identical to those in § 172.101. As previously discussed, entries that are contained in the IMCO Code which describe materials that could only be classified as Class A or B explosives or Radioactive materials under DOT regulations are proceeded by the letter "N." Also omitted from the Optional Table are a limited number of entries from the IMCO Code which:

(1) Are not included in the UN Recommendations and have no UN number assigned;

(2) Are not "n.o.s." entries that require addition of the technical name of the hazardous material; and,

(3) In the opinion of MTB, are not sufficiently explicit to permit appropriate response measures to be initiated in the event of an incident.

Examples of such entries are the IMCO shipping names "Acaricides" and "Nematocides." Hazardous materials falling within such descriptions will, therefore, be transported under the next most appropriate description in § 172.102 (such as Poisonous liquid, n.o.s., in the case of the above examples), or under the appropriate description in § 172.101.

Column 3 of the Optional Table sets forth the IMCO hazard class or division for the material as appropriate. Paragraph (h) of § 172.102 includes a brief definition of each of the IMCO hazard classes and divisions and refers the user to the IMCO Code for more detailed definitions.

A comment was received which proposed that a table be included in this section providing the name of the DOT class which most closely corresponds to

each IMCO class or division. MTB believes this information would be helpful and, rather than include this information in tabular format, has revised the proposed paragraph (f) of § 172.102, which is now paragraph (h), to include the name of the DOT class(es) most closely corresponding to each IMCO class or division in parentheses following the name of that class or division. MTB believes that this addition should satisfy the concerns of another commenter who proposed that a column be added to the Optional Table to provide this information for each entry.

Column 4 of the Table indicates the United Nations number assigned to the material, if any. In certain cases where no UN number has been assigned to a particular material, MTB has inserted in Column 4 the UN number of the appropriate generic, or "n.o.s.," entry under which the material would be included. In such cases, the UN number listed has been shown in parentheses and is the required identification number if the optional description is used.

Column 5 specifies the labels to be applied to a package containing the hazardous material. Specifications for the labels may be either as provided in the DOT regulations or in the IMCO Code. The label described as "St. Andrew's Cross" in this column refers to the label specified for Division 6.1, Packaging Group III materials in the UN and IMCO recommendations.

Column 6, which is for informational purposes only, provides the packaging group assigned to the material in the IMCO Code. An explanation of the meaning and purpose of this grouping system, as well as the grouping criteria developed for certain hazard classes, is presented in the recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods. These recommendations, entitled "Transport of Dangerous Goods," may be obtained from the United Nations bookstores in New York or Geneva, Switzerland. MTB believes that a number of individuals involved in the international transportation of hazardous materials have gained sufficient working knowledge of the grouping system to merit the inclusion of packaging groups in the Optional Table.

A number of comments were received which concerned the implications of these amendments relative to packaging. As indicated in the Notice of Proposed Rulemaking, these amendments do not in any way affect the packaging currently required for hazardous materials under the DOT regulations and the Packaging Group column was included primarily for informational purposes. It should be noted, however, that the packaging group of a material is necessary information under IMCO labeling recommendations in determining the appropriate label to be applied to materials of Division 6.1. For this reason, the packaging group column in the optional list has been retained notwithstanding one comment which suggested deletion of the column. One commenter proposed that this column be expanded to include the IMCO Code page number for the particular material to provide further packaging guidance. This proposal was not adopted since, as previously indicated, this portion of the rules is not intended to address specific packaging provisions, and because there is a possibility that the four digit IMCO Code page number could be confused with the identification number. Several commenters expressed the opinon that MTB should explore means of addressing differences between IMCO and DOT packaging requirements. This comment is not within the scope of this rulemaking and will have to be addressed in a future rulemaking.

Column 7 sets forth the vessel stowage requirements for the hazardous materials as provided in the IMCO Code. Although § 172.101 was revised with the publication of Docket HM-103/112 to inlcude IMCO stowage requirements to the maximum extent possible, the differences between shipping descriptions for certain hazardous materials in the DOT regulations and the IMCO Code made it impossible to include the IMCO stowage requirements for all hazardous materials. MTB believes that consistency between the DOT and IMCO stowage requirements is necessary to insure that vessels loaded in United States ports will not be in violation of the stowage requirements in force in those nations that have incorporated the IMCO Code into their national regulations, and so that vessels of those nations will not be in violation of U.S. requirements. Inclusion of the majority of the IMCO shipping descriptions in the Optional Table will make it possible to authorize the use of IMCO stowage when hazardous materials are transported under an appropriate IMCO description. The meanings of numbers used to designate acceptable stowage locations are explained in paragraph (k). The numbers used in § 172.102 retain the same meaning assigned to them in § 172.101; however, the explanations of the meanings of these numbers have been revised in an effort to provide greater clarity.

One commenter suggested that the maximum transport temperature specified for organic peroxides in Column 7(c) of the Optional Table should be replaced with the appropriate emergency and control temperatures recently adopted by the UN. In order to maintain consistency with existing IMCO vessel stowage requirements, these revisions have not been made. It is envisioned that these changes will be made to § 172.102 when IMCO adopts amendments to the Code to replace maximum transport temperature with control temperature and emergency temperature.

Several requests were received to include various hazardous materials in the Optional Table which have been assigned UN numbers but have not yet been included by IMCO in the Code. MTB believes it would be premature to include such entries in the Optional Table at this time since they are not yet authorized by IMCO for use in international transportation. It is anticipated that many of these entries will be adopted by IMCO in the near future and that, thereupon, the entries will be added to the Optional Table.

A number of commenters took issue with the classification or labeling provided for certain materials in the IMCO Code and requested either that the Optional Table be modified or that appropriate amendment proposals be submitted to the UN or IMCO. No such changes have been incorporated in the Optional Table since this would result in inconsistencies with IMCO recommendations. MTB believes such action would be contrary to the intent of this rulemaking. However, the issues raised by these commenters will be considered and amendment proposals may be submitted to the UN or IMCO, if appropriate.

A number of modifications have been made to the Optional Table. Through a careful editorial review and as a result of several comments received, errors in a number of entries were identified. These errors have been corrected to insure that entries in the Optional Table are consistent with the corresponding entry in the IMCO Code. In addition, IMCO Code Amendment 16-78, which became effective March 1, 1980, has been incorporated into the Optional Table to assure that it reflects the latest IMCO Code provisions. MTB envisions that the Optional Table will be amended upon publication of each IMCO Code amendment so that it will always contain the most up-to-date information.

One commenter suggested that the stowage locations specified for Alkaline corrosive liquids, n.o.s.; Corrosive liquids, n.o.s.; and Corrosive solids,

n.o.s. be revised to agree with those provided for the same entries in § 172.101. Since the IMCO Code allows stowage of these materials as specified by the competent authority, MTB agrees that the proposed change is entirely appropriate and has revised the stowage location designations accordingly.

An objection was raised to the identification numbers indicated for the entries Sodium fluoride, solution and Silicofluorides, solid, n.o.s. on the basis that neither the IMCO Code nor the UN Recommendations specifies an identification number for those entries. Numbers for these materials were, however, adopted by the UN Committee at its Tenth Session (December 1978) and will appear in the next edition of the UN Recommendations. The numbers contained in the proposal have, therefore, been retained. The same commenter suggested that the letter "N" be inserted before the entry "Hydrazine, anhydrous and solutions containing less than 36% water by weight" because the class and labels provided for these hydrazine solutions in the Optional Table disagree with the DOT class and labels for these materials and because he considered the DOT classification to be adequate. MTB believes that use of the IMCO class and labels for these solutions will not result in a derogation of safety in transportation. The insertion of the letter "N" before entries solely because the class and label(s) under IMCO may be different from those provided in § 172.101 is contrary to the purpose and intent of adopting the Optional Table. The suggestion has, therefore, not been incorporated into the Optional Table.

A number of requests were received to add certain shipping descriptions to the Optional Table which appear as proper shipping names in § 172.101 and are also acceptable alternate descriptions for the materials in the IMCO Code. Such descriptions have been included in Roman type in the Optional Table with a cross reference to the entry which appears as the primary description for the material in the IMCO Code. Other comments requested the addition to the Optional Table of certain shipping descriptions which appear in § 172.101 but not in the IMCO Code. MTB does not consider it appropriate to add such entries because they are not recognized by IMCO for international shipments.

One commenter noted several discrepancies between the entries for "Fishmeal" or "Fishscrap" in the Optional Table and those in the IMCO Code. The entries in the Optional Table have been revised to agree with those in the IMCO Code.

Section 172.200. Section 172.200(b) is revised as proposed in Dockets HM-145A and HM-145B, to remove the ORM exceptions to the shipping paper requirements when a material being offered or transported is a hazardous waste or a hazardous substance. The wording of the proposal has been simplified in the final rule, without changed effect. The proposed entry for ORM-E materials has been deleted since the exception proposed in the Notice is unnecessary under the final rules.

Section 172.201. Paragraphs (a)(1)(ii), (a)(1)(iii), and (a)(4)(i) of § 172.201 are revised by MTB to accommodate the revision to § 172.202(a)(3) which requires the identification number preceded by "UN" or "NA", as appropriate, to be entered as the third element of the basic description, as proposed in Docket HM-126A. Also, MTB added a provision to paragraph (a)(1)(iii) to authorize the entry of "RQ" in the "HM" column in place of the "X" to identify the entry as representing a hazardous substance. This was recommended by several commenters, and MTB concurs. As proposed in Docket HM-171, paragraph (a)(4)(i) is amended to allow the optional insertion of the entries "IMCO" or "IMCO Class" in the hazardous materials description on the shipping papers. MTB believes that certain shippers may desire to include these entries to clarify the fact that a hazardous material is being offered under the IMCO hazard class, particularly when this hazard class differs from that provided for the material in § 172.101. A proposal that the entry "IMCO" be allowed to appear immediately before the proper shipping name has not been adopted since it is MTB's belief that the proper shipping name should appear first in the basic hazardous materials description.

Section 172.202. Paragraphs (a)(1) and (a)(2) are revised by MTB to clarify the fact that the entries in § 172.102 are optional. Also, paragraph (a)(2) is revised to reduce some of the shipping paper entries. Whenever entries from the Optional Table are used for domestic shipments, § 171.102 applies. A number of commenters expressed concern that the proposal would allow unrestricted mixing of DOT and IMCO shipping descriptions, classification and labeling which could result in confusion and suggested that this paragraph be amended to prevent such unrestricted mixing. MTB agrees with these comments and has amended § 172.202 to require that the proper shipping name, class and identification number for a material appearing on the shipping paper must be taken either entirely from § 172.101 or entirely from § 172.102, and has amended § 172.400 to insure that the package labeling is consistent with the proper shipping name market on the package.

Various methods were suggested by commenters for insuring that some indication is included in the shipping paper description when an entry from § 172.102 is being utilized. MTB believes that such an indication is already provided, since the class of a material is always expressed numerically in Column (3) of the Optional Table and, therefore, would have to be indicated in the same manner on the shipping papers. This means that a numerical indication of the class on the shipping papers will serve as a direct indication that the entry under which the material is offered is taken from § 172.102.

Paragraph (b) is revised for clarity and to provide an example since the rule change to paragraph (a)(2)(ii) made the previous example, Corrosive liquid, n.o.s., incorrect. It should be noted, as paragraph (b) now indicates, that the basic description now consists of three elements: the proper shipping name, the hazard class, and the identification number. However, technical names may be required to be entered after the proper shipping name. These requirements were proposed in Dockets HM-126A and HM-145B.

Some shipping paper entries are required to be made "in association with" the basic description. The term "in association with" means that the additional entry may follow the complete description for a hazardous material in any reasonable format, as long as it is clearly part of the entry.

The requirement to enter the basic description in a prescribed sequence, with certain exceptions specified, does not preclude the use of a shipping paper format with columns. However, the basic description sequence must be maintained, with authorized exceptions.

Paragraph (b) is revised to show the addition of the identification number to the basic description.

One commenter suggested that a provision be added which would require the indication of flashpoint on shipping papers in order to assist water carriers in planning vessel stowage. MTB believes that, in general, the indication of the appropriate IMCO division number for flammable liquids sufficiently specifies flashpoint for stowage purposes, and that the relatively few instances where the stowage of hazardous materials of other classes is dependent on flashpoint

would not justify a requirement to show flashpoint in all cases. However, as authorized by § 172.201(a)(4), such an entry may be added after the basic description.

Section 172.203. The deletion of paragraph (i)(2), the redesignation of paragraph (i)(3) as (i)(2), and the addition of paragraphs (j), (k), and (l) were proposed in HM-126B. However, paragraph (i)(2) has been revised and not deleted. General shipping paper requirements for hazardous substances are consolidated in paragraph (c). Paragraph (e) is revised to include required hazardous substance shipping papers.entries for "empty" packagings. MTB revised paragraph (d)(1)(ii) to authorize the entry of a generic chemical description for the chemical form of a Radioactive material. This provision was not proposed, but is included by MTB as part of this final rulemaking. It is a relaxation of present rules.

Paragraph (i)(2) is revised to provide for the identification of at least two hazardous components of certain mixtures and solutions for shipping paper entries for export shipments by vessel. Based on a considerable number of comments, the general requirement for such an identification of components for all n.o.s. entries as was proposed in § 172.203(j) of Docket HM-126B has been deleted. Paragraph (i)(2) also contains two significant exceptions from the two component requirement: First, for an n.o.s. material, other than a mixture that meets the definition of more than one hazard class, if the description identifies the name of the chemical element or group that is primarily responsible for the material being classed as it is, no additional component needs to be identified. Second, for an n.o.s. material which is a mixture of materials of different hazard classes and meets the definition of more than one hazard class, if the description contains the name of the chemical element or group responsible for one of the hazard classes, only the technical name of the components(s) not identified must be entered in parentheses.

Paragraph (j) is added to require the "Dangerous When Wet" entry on shipping papers for material labeled "DANGEROUS WHEN WET." In Docket HM-126B, it was proposed that "Water Reactive" be entered on the shipping paper, but commenters pointed out that the hazard should be identified, and MTB agrees.

Several commenters stated that a blanket requirement for entering the technical name for all n.o.s. entries, as was proposed in § 172.203(j) of Docket HM-126B, would contribute little to safety and yet be a fairly costly requirement. MTB agrees and as a final rule in paragraph (k) of § 172.203 the requirement has been limited to materials that are poisonous, but are not identified as such by their basic description. The compliance date for the identification of poisons on the shipping paper is July 1, 1981, but such entries may be made voluntarily after July 1, 1980.

It was proposed in Docket HM-145A to require the EPA name for the waste to be included in parentheses whenever the DOT shipping name did not include the technical name of the material. Since publication of that Notice, EPA has decided to use DOT shipping nomenclature. Consequently, there are no additional EPA names and this provision has been eliminated from the final rule.

Section 172.204. Paragraph (b)(1) is revised to exclude hazardous waste from the exceptions from certification. This revision is necessary for consistency with EPA's requirement for certification of hazardous waste shipments. This provision was overlooked in DOT's May 25, 1978, Notice and has been added to the final rule. Based on a petition, MTB is authorizing a permissive revision to the certification so it will read "This is to certify that the herein-named materials. . . ." This will permit a shipper to place the certification beside or above the hazardous materials entries if desired. This authorization is contained in a new note following the certification. The previous note was deleted by MTB because it was no longer pertinent.

Section 172.205. A new § 172.205 is added as proposed in Docket HM-145A concerning the carriage and disposition of hazardous waste manifests which are required by EPA in 40 CFR Part 262. It is important to note that no hazardous waste subject to the manifest requirement may be offered, transported, transferred or delivered without a manifest with signatures and dates for receipt of the waste. The wording in this section of the final rule differs from that proposed in the Notice to more clearly state the requirements and to reduce the potential compliance costs to persons affected. There are specific requirements pertaining to the hazardous waste manifest relative to acceptance for transportation, delivery to a designated facility or a place outside the United States, and the retention of copies by the shipper and carrier(s) for three years from the date of receipt by the initial carrier. The format of a manifest is not specified in referenced EPA regulations; therefore, any document that contains all the required entries, signatures and dates is acceptable. A manifest that contains all the information required on a shipping paper by § 172.202 and § 172.203 may be used as a shipping paper. Paragraph (h) allows use of the present railroad waybill system to document the delivery of hazardous wastes. However, a representative of the railroad receiving a waste shipment from a generator or a motor carrier must date and sign a copy of the manifest. The person delivering the hazardous waste to the initial rail carrier must send a copy of the dated and signed manifest to a representative of the designated facility. This provision does not apply to an intermodal transfer following transportation by a rail carrier.

Section 172.300. Section 172.300 has been revised by MTB to reflect the package marking requirements resulting from the proposals in Dockets HM-126A and HM-126B, and to reflect suggestions from commenters. Marking requirements proposed in this section in Docket HM-145A for waste have been dropped since they are adequately covered elsewhere in this rule. The proposed HM-145A package marking requirement is now covered by EPA marking and certification requirements, and the proposed additional § 172.306 requirement in Docket HM-145A was deleted by MTB since a companion proposal was dropped by EPA.

Several commenters suggested that clarification should be provided relative to the applicability of the provisions of § 172.102 to the marking of packagings with the name of contents. It is the intent of MTB that the proper shipping name in § 172.102 may be marked on packagings. To eliminate any confusion in this regard, § 172.300 has been amended to include a specific reference to § 172.102. One petitioner recommended § 172.300 be revised to include an exclusion from the identification number marking requirements for Limited Quantity packages. MTB agrees and has included such a provision. The compliance date for displaying identification numbers on packages is July 1, 1983. Voluntary compliance may begin after June 30, 1980, and is encouraged.

Section 172.316. Section 172.316 is amended as proposed in Dockets HM-145A and HM-145B, to include ORM-E materials in the package marking requirements for ORM's.

Section 172.324. The requirement to enter the letters RQ in association with the proper shipping name on certain packages is a slight modification from the requirement proposed in Docket

HM-145B, as a result of commenters' suggestions.

The compliance date for marking RQ on packages of hazardous substances is July 1, 1983. Voluntary compliance may begin after June 30, 1980, and is encouraged.

Section 172.326. Based on commenters' suggestions, MTB has revised for clarity the wording from that proposed in HM-126A for the portable tank marking requirement, and has added paragraph (e) to provide for portable tanks that are "empty" of previously contained hazardous materials. This later provision was omitted from the HM-126A proposal, however, it incorporates "empty" packaging concepts previously addressed elsewhere, but more appropriately contained in this section. A basic provision for "empty" packagings is contained in § 173.29 as presented in this final rulemaking.

Commenters recommended that consideration be given to revising the portable tank marking requirements by differentiating between those tanks having a capacity of 1000 gallons or more and those having a capacity of less than 1000 gallons. MTB agrees and has made separate provisions in paragraph (a) for the two sizes indicated. Paragraph (d) requires a motor vehicle or rail car transporting portable tanks to display identification markings if those markings on the portable tank are not visible. This change to § 172.326 was not proposed, but it is necessary to carry out the basic intent of the indentification marking requirements.

Section 172.328. Several comments were received describing the difficulties that would be encountered in complying with the identification number marking requirement with a separate orange panel for each material being transported in a portable tank, cargo tank or tank car, as proposed in Docket HM-126A. MTB has revised the proposed requirements in this final rule by accepting a suggestion to permit application of an identification number on an appropriate square-on-point vehicle placard as as alternative to the orange panel. This is provided for in §§ 172.332 to 172.338.

Section 172.330. Changes were proposed to § 172.330 in Docket HM-126A to provide for displaying identification numbers on cargo tanks transporting hazardous materials. Based on commenter suggestions, MTB has made minor editorial revisions to clarify the provisions for rail cars and for multi-unit tank car tanks, with no change in scope. Also, based on commenter suggestions, MTB has added a provision which clarifies the marking requirements for empty tank cars and multi-unit tank car tanks.

The required compliance date for displaying the appropriate identification number on tank cars and multi-unit tank car tanks is July 1, 1983. On a voluntary basis, compliance may begin after June 30, 1980, and is encouraged.

Section 172.332. Identification number marking specifications were proposed in Docket HM-126A. However, MTB has reduced the overall physical dimensions slightly to eliminate unneeded area. Based on numerous comments, MTB has revised the requirements somewhat, and in § 172.336 has limited their application with regard to: (1) cargo tanks transporting fuel oils or distillate fuels; (2) multi-compartmented cargo tanks and tank cars; and (3) multi-unit tank car tanks. Also, based on comments, an alternative method for displaying the identification number on a hazard warning placard is authorized in § 172.334. Paragraphs (a) and (d) of § 172.332 contain the basic description of the orange panel and paragraph (b) prescribes the type of material required for its fabrication. Because metal or plastic was not prescribed for placards, the question has frequently been asked as to whether such material could be used. The answer with regard to placards is also appropriate with regard to these panels: Any material may be used as long as it is at least as durable as the tag board specified in the rule. Based on suggestions from commenters, MTB authorized, in paragraph (c), the name and hazard class of the material transported to be shown on the orange panel in letters no larger than 18 point type.

The intent of the requirement in paragraph (e) that the identification number on an orange panel be displayed in proximity to any required placard(s) was questioned by some commenters. If placards are required, any required orange panels with the identification number must be located in proximity to the placards, so they may be readily visible to emergency response personnel. Some hazardous materials do not require placarding, but an identification number may be required, for example on materials classed as ORM-E.

Section 172.334. This section provides an alternative method for displaying identification numbers. Basically, it provides for 3½ inch black number on a white background to be displayed near the center of the placard. This display must be on the appropriate placard for the material, and it will necessarily replace or essentially cover the words on the placard. The name and hazard class of the material may be shown in the top outer border of the space bearing the identification number in letters no larger than 18 point type when an identification number is displayed on a placard.

Paragraph (b) contains a black and white illustration, in miniature, of the identification number for Acetone displayed on a FLAMMABLE placard. As illustrated, the hazard class number 3 is in reverse print. If this alternative method for displaying the identification number is used and the identification number block is affixed over or in place of the hazard word on the placard, in this case FLAMMABLE, the hazard class number in the lower corner may be a black number on a white background, if not already present as a 1¾ inch numeral in reverse print.

Section 172.336. Sections 172.336 and 172.338 were not in the proposal, but MTB separated the identification number marking requirements into compatible areas and renumbered the sections accordingly. Paragraph (a) provides for permissive identification number marking on full load shipments by transport vehicles and freight containers. This is expected to enhance safety and emergency response effort and may be desired by some shippers. Paragraph (b) establishes a specification for a white square-on-point configuration background for displaying an identification number under the alternative provision (alternative to the orange panel) for materials that are not authorized or required to be placarded. It is important to note that *this white display background containing an identification number is not a placard.* Paragraph (c) contains exceptions to the identification number display requirements. These exceptions vary from total exception, under certain circumstances, for nurse tanks, to partial exception, as for the forward end of cargo tank trucks and cargo tank semi-trailers. Limited exceptions are also provided for multi-compartmented cargo tanks and tank cars as well as certain cargo tanks transporting distillate fuels such as fuel oil. Several commenters pointed out the problems created with multi-compartmented cargo tanks and tank cars and a partial exception is provided. MTB believes that with this exception the basic intent of identifying the materials adequately for emergency response is accomplished and, at the same time, certain burdens are relieved and possible confusion avoided. This is true as well in the other instances where exceptions are provided.

Paragraph (c) contains the July 1, 1981, compliance date for displaying the identification number on portable tanks,

cargo tanks, and tank cars. For multi-unit tank car tanks the compliance date is July 1, 1983. On a voluntary basis, the identification number may be displayed on these tanks any time after the July 1, 1980, effective date.

Section 172.338. The proposal did not contain a provision for replacement of lost or missing identification numbers, however, several commenters identified this as a potential problem area needing resolution. This section provides for this occurrence.

Section 172.400. Paragraph (b)(3) is revised to add the words "freight container load" in the sequence of "carload or truckload shipments." This change updates a regulation that was published before freight containers were a common form of transportation and allows MTB to eliminate an exemption (under 49 CFR Part 107, Subpart B). As requested by several commenters, a new paragraph (d) is added to this section and paragraph (a) is revised to insure that packages marked only with a proper shipping name from the Optional Table also will be labeled in accordance with that Table. This reflects the requirement in § 172.202 that the entire basic description and the label requirement must be taken from either the § 172.101 Table or the § 172.102 Optional Table.

Section 172.402. Paragraphs (a)(5) through (a)(9) are added to reflect additional multiple labeling requirements that are established as proposed in Docket HM-126B. Initially, it was considered adequate to have the multiple labling reflected in Column (4) of the Table, but commenters recommended that, for consistency, it be entered in this section. MTB agrees and has so provided. The compliance date of July 1, 1983, is contained in paragraph (a)(10). Voluntary compliance may begin any time after the July 1, 1980, effective date.

Section 172.407. Paragraph (h) is amended for consistency with § 172.102(h) as it was proposed in Docket HM-171. This rule authorizes IMCO specification labels in all cases except Explosives A and Explosives B. This change clarifies that, except for the specifications for color tolerance which must meet DOT requirements, labels may meet either DOT or IMCO specifications, except that a foreign language text alone is authorized only on import shipments. In addition, to eliminate an exemption issued to the Department of Defense to authorize additional text on labels as required by the country of destination, MTB is adding a provision to paragraph (h) of this section authorizing such an addition.

Section 172.503. Section 172.503 is added to provide a reference from the placarding rules to the identification number marking alternative authorized in § 172.334.

Section 172.504. Table 2 in paragraph (a) is revised to provide for using the DANGEROUS placard for Class C explosives. This has been authorized under exemption DOT-E 7902 which was issued after the applicant pointed out that in case of fire involving Class C explosives, emergency response personnel could be injured when taking routine actions applicable to the FLAMMABLE placard without checking to determine what was involved in the fire. A normal precaution for emergency response personnel when observing the DANGEROUS placard is to try to determine the materials involved by obtaining shipping papers or through other available means. Also, changes are made to Table 2 to eliminate the requirement for affixing the DANGEROUS placard for Class C explosives, the BLASTING AGENTS placard for Blasting agents or the OXIDIZER placard for Nitrocarbonitrate, if the freight container or transport vehicle is transporting Class A or B explosives and is appropriately placarded for Class A or Class B explosives. Further provisions are made for affixing only the FLAMMABLE GAS placard when a motor vehicle is transporting Nonflammable gas and Flammable gas. Although these placarding changes had not been proposed, they provide relief from some of the existing rules, eliminate an outstanding exemption and at the same time provide adequate warning for the materials involved. Also, a new paragraph (d) is added to exclude certain packagings containing only the residue of hazardous materials from consideration in determining the applicability of the placarding requirements.

Section 172.519. Paragraph (d) is revised as suggested by commenters to increase the size of the UN hazard class number display on placards. Where such a display had been permissive, it now becomes mandatory in certain situations when required by this subchapter, such as under § 172.334. Paragraph (f) is added to authorize a variance in the placard specification so the alternative identification number marking requirement can be accomplished. The alternative, provided by § 172.334, authorizes the display of identification numbers on the appropriate placard for the hazardous material being transported.

Section 173.2. Paragraph (a)(16) is added to include ORM-E in its proper order of hazard.

Section 173.21. The title is revised and the text is amended as proposed in HM-159 to provide better guidance on materials or packaging conditions that are not acceptable in transportaion. The term "Forbidden materials" in the context of this section is new and clarification of the application of the term is provided. Section 173.21 applies to any material considered to be forbidden and is not limited to materials falling within established hazard classes. Included in the revision of this section is a prohibition against the offering of packages that evolve a dangerous quantity of flammable gas or vapor released from a material not otherwise subject to the regulations, e.g. the release of flammable blowing agent vapors from a manufactured product in such quantities that an explosive mixture would be created within the transport vehicle. Under this final rule, each refrigeration method, when used as a means of stabilization, must be approved by the Associate Director for Operations and Enforcement. This change is in accord with the approval authority withdrawals from the Bureau of Explosives presently being handled by amendments published under Docket HM-163. Several commenters objected to the fact that proposed paragraph (a)(2) did not contain any statement concerning the time a material would have to be exposed to the 130°F. temperature in order to be considered forbidden from transportation. MTB agrees that it is a weakness in the proposed wording and has altered the wording to reference two test methods. The test methods are: ASTM E-487 "Standard Method of Test for Consent Temperature Stability of Chemical Materials" and the Organic Peroxide Producers' Safety Division (OPPSD) "Self Accelerating Decomposition Test (SADT)." Several commenters expressed concern that this paragraph does not make it clear that approvals issued by the Bureau of Explosives would be continued in effect until an orderly transition to approval by the Associate Director for Operations and Enforcement could be accomplished. MTB acknowledges this objection and has included a clarification statement in the rule referencing § 171.19.

Section 173.28. Section 173.28 is amended to consolidate three paragraphs that contain restrictions pertaining to containers marked NRC or STC. Paragraph (n) is amended to include a reference to ORM-E materials regarding reuse of STC-marked

packagings and a new paragraph (p) is added to permit the reuse of NRC or STC specification packagings for one-time shipments of hazardous wastes under certain specified conditions. Note the first condition stipulates that the material must be packaged "in accordance with this Part". For example, a Flammable liquid, n.o.s., must be packaged in accordance with § 173.119. This reuse authorization for hazardous wastes does not permit any deviation from the packaging requirements of Part 173 except as specifically stated. This final rule differs from the Docket HM-145A proposal to reflect input from commenters.

Section 173.29. Section 173.29 is amended, as proposed in Docket HM-145A, to require, with certain exceptions, a packaging that contains the residue of a hazardous material to be offered for transportation in the same manner as required when it previously contained a greater quantity of a hazardous material. However, there are significant exceptions in paragraph (a) concerning marking, placarding, shipping papers, and stowage.

Paragraph (a)(3)(ii) excepts from shipping paper requirements the transportation by contract or private carrier of certain "empty" packagings containing a hazardous materials residue when the purpose of the transportation is to reuse or recondition the packaging. This was not proposed in the Notice but was requested by several commenters. The exception recognizes the fact that private and contract carriers who perform this transportation are familiar with the hazards and packagings involved in the transportation of these materials.

Section 173.51. Section 173.51 is revised as proposed in the notice to Docket HM-159 to make provisions for additional coverage of forbidden materials.

Section 173.118a. Section 173.118a is amended to exclude a combustible liquid from the 110 gallons or less exception when it is a hazardous waste subject to 40 CFR Part 262. Thus, a combustible liquid that is a hazardous waste and is offered for transportation in a packaging having a capacity of 110 gallons or less must be shipped as a waste combustible liquid and all regulations pertaining to the transportation of waste materials apply. This was not proposed, but is added by MTB based on a comment that pointed out the omission. Paragraph (b)(1) is amended to include a reference to hazardous waste manifests. Paragraph (b)(2) is revised by MTB to eliminate a conflict between the identification number marking requirements for portable tanks, cargo tanks and tank cars in the Docket HM-126A proposal and the exception authorization in paragraph (b). Paragraph (b)(5) is revised to include the hazardous substance discharge reporting requirements of § 171.17.

Section 173.151a. As proposed in Docket HM-126B, paragraph (a)(13) is revised to permit continued classification of a hazardous material according to its predominant hazard when it contains an organic peroxide without having to place a plus before each organic peroxide entry. It is possible that when certain stabilizing dilutents are added to certain organic peroxides the predominant hazard is that of the dilutent rather than the organic peroxide.

Section 173.154. Based on a petition, MTB is adding "Calcium hypochlorite, hydrated" to the Hazardous Materials Table as a proper shipping name with specification packaging referencing § 173.217. In order to eliminate confusion, the reference in § 173.154(a)(20) to hydrated calcium hypochlorite is deleted.

Section 173.179. As proposed in Docket HM-159, § 173.179 is added to prescribe packaging for N-methyl-N'-nitro-N-nitrosoguanidine, which is added to the Table as a Flammable solid.

Section 173.182. The introductory text to paragraphs (a) and (b) are amended as proposed in Docket HM-145B to provide appropriate packaging for the following materials that have been identified by EPA as hazardous substances: Beryllium nitrate, Cupric nitrate, Ferric nitrate, Mercuric nitrate, Nickel nitrate, and Zirconium nitrate.

Section 173.217. Section 173.217 is amended based on a petition for rulemaking requesting that "calcium hypochlorite hydrated" be added to the Table, with a packaging reference to § 173.217. MTB is in agreement with the data presented in the petition and has added the entry.

Section 173.352. The heading and paragraph (a) are revised to include Cyanide solutions, n.o.s. classed as a Poison B, UN 1935, which is added to the Table as proposed in Docket HM-126B. MTB believes the packagings authorized by § 173.352 for sodium cyanide or potassium cyanide are more appropriate for Cyanide solutions, n.o.s. than the general packagings that would otherwise be authorized for this material under § 173.346 for a poisonous liquid, n.o.s.

Section 173.364. Paragraph (a) is revised to provide certain exceptions for Poisonous solid Limited Quantities that are similar to those authorized for Poisonous liquid Limited Quantities. This was an apparent omission from the Docket HM-112 rulemaking and provides relief from certain regulations for shipments of these materials.

Section 173.389. Section 173.389 is amended as proposed in Docket HM-145A to restate the definition of radioactive materials to clarify the fact that the definition applies only for purposes of the Hazardous Materials Regulations. This clarification is necessary since EPA regulations address materials having lower levels of radiation.

Section 173.500. Section 173.500 is amended to clarify the definition of ORM materials. This clarification is essential to implementation of the ORM-E class which is included in new paragraph (b)(5). Note that the ORM-E definition includes hazardous wastes subject to the regulations of the EPA in 40 CFR Part 262, and hazardous substances as defined in § 171.8. Except for the amendment of Note 1, which resulted from a comment about the apparent conflict between the hazardous waste requirements and the exception for combustible liquids in certain packagings, the final rule is as was proposed in Dockets HM-145A and HM-145B.

Section 173.505. Paragraph (a) is revised to acknowledge a restriction on the ORM exceptions in that § 173.21 applies to any hazardous material offered for transportation. As adopted, the provision differs from the HM-145A proposal in format, but the content remains the same.

Section 173.510. Section 173.510 is amended to exclude the basic packaging requirements from the exceptions specified in § 173.505, and a new paragraph (a)(5) is added requiring that transport vehicles used to transport ORM materials must have discharge openings securely closed. This is a significant change from the HM-145A proposal which would have precluded the use of open-top vehicles. Numerous comments were received describing procedures for effectively using tarps to cover dump trucks and other open-top vehicles. MTB believes that many of the comments have merit and has revised the requirement accordingly. MTB added a note in paragraph (a)(1) to inform shippers that EPA has prescribed packaging for certain PCB's for storage for disposal.

Section 173.1300. A new Subpart O is added to Part 173 to address ORM-E materials, and a new § 173.1300 is added to address Hazardous waste, liquid or solid, n.o.s., and Hazardous substance, liquid or solid, n.o.s. These two entries resulted from Dockets HM-145A and

HM-145B. No specific packaging requirements are specified in this rule for such materials other than a reference to the basic requirements for ORM's in § 173.510. For example, if a hazardous waste is to be offered for transportation by air, the additional requirements of § 173.6 in Subpart A apply. It may be necessary in the future to add specific packaging requirements for certain hazardous wastes or hazardous substances if problems relative to the safe transportation of materials in this class (ORM-E) are identified.

Section 174.24. This section is amended to exclude hazardous substances and hazardous wastes from the exceptions specified for ORM materials.

Section 174.25. Paragraph (b)(6) is added to require that the letters "RQ" be entered on the shipping paper either before or after the basic description for hazardous substances. Although a similar requirement was proposed in Docket HM-145B in § 172.203, it was not proposed for this section. Several suggestions were made during a joint EPA/MTB hearing on hazardous waste that the identifier be entered after the basic description and that it contain the reportable quantity for the material. MTB agrees in part and has authorized the placement of the identifier "RQ" to be entered either before or after the basic description. Thus, under § 172.201(a)(4), if it is placed after the basic description, the shipper may enter the designated reportable quantity. MTB agrees with commenters who suggested provisions be added to require identification on a shipping paper of a hazardous substance residue in a tank car and has added such a provision to the end of paragraph (c).

Section 174.45, 175.45, 176.48 and 177.807. As proposed in Dockets HM-145A and HM-145B, §§ 174.45, 176.48 and 177.807 are revised to provide for the reporting of the discharges of hazardous wastes and hazardous substances. As a result of a change in the EPA reporting requirements for hazardous waste, reporting can be accommodated through a slight revision to §§ 171.15 and 171.16. However, § 171.17, modified somewhat from the Docket HM-145B proposal, is in the final rule for the reporting of the discharge of a hazardous substance. Based on several comments that suggested hazardous substance discharge reports be limited to reportable quantity discharges (incorporated in the definition of hazardous substance) into or upon navigable waters, MTB deleted the § 175.45 proposal because it appears unlikely that such a discharge would occur from an aircraft.

Section 176.11. This section is amended to exclude hazardous substances and hazardous wastes from the exceptions specified for ORM materials.

Section 177.823. In Docket HM-145A MTB had proposed a marking requirement for motor vehicles used for transporting hazardous waste. However, since the requirement appears to duplicate a requirement in § 171.3, the § 177.823 requirement is dropped.

In consideration of the foregoing, Parts 171, 172, 173, 174, 176, and 177 of Title 49 Code of Federal Regulations are amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. Section 171.1 is revised to read as follows:

§ 171.1 Purpose and scope.

This subchapter prescribes the requirements of the Department of Transportation governing—

(a) The transportation of hazardous materials by, and their offering to—

(1) Carriers by rail car, aircraft and vessel (except as delegated at § 1.46(t) of this title);

(2) Interstate and foreign carriers by motor vehicle; and

(3) Intrastate carriers by motor vehicle so far as this subchapter relates to—

(i) Hazardous waste, except in a state operating a hazardous waste program under interim authorization in accordance with 40 CFR Part 123, Subpart F.

(ii) Hazardous substances.

(b) The manufacture, fabrication, marking, maintenance, reconditioning, repairing, or testing of a packaging or container which is represented, marked, certified, or sold for use in such transportation as specified in paragraph (a) of this section.

2. In § 171.2 paragraphs (a) and (b) are revised to read as follows:

§ 171.2 General transportation requirements.

(a) No person may offer or accept a hazardous material for transportation in commerce within the United States unless that material is properly classed, described, packaged, marked, labeled, and in the condition for shipment as required or authorized by this subchapter including §§ 171.12 and 176.11.

(b) No person may transport a hazardous material in commerce within the United States unless that material is handled and transported in accordance with this subchapter.

* * * * *

3. Section 171.3 is added to read as follows:

§ 171.3 Hazardous waste.

(a) No person may offer for transportation or transport a hazardous waste (as defined in § 171.8 of this subchapter) in interstate or intrastate commerce except in accordance with the requirements of this subchapter.

(b) No person may accept for transportation, transport, or deliver a hazardous waste for which a manifest is required unless that person—

(1) Has marked each motor vehicle used to transport hazardous waste in accordance with § 397.21 or § 1058.2 of this title even though placards may not be required;

(2) Complies with the requirements for manifests set forth in § 172.205 of this subchapter; and

(3) Delivers, as designated on the manifest by the generator, the entire quantity of the waste received from the generator or a transporter to—

(i) The designated facility or, if not possible, to the designated alternate facility;

(ii) The designated subsequent carrier; or

(iii) A designated place outside the United States.

Note.—Federal law specifies penalties up to $25,000 fine and 5 years imprisonment for the willful discharge of hazardous waste at other than designated facilities. 49 U.S.C. 1809.

(c) With regard to hazardous waste subject to this subchapter, any requirement of a state or its political subdivision is inconsistent with this subchapter if it applies because that material is a waste material and applies differently from or in addition to the requirements of this subchapter concerning—

(1) Packaging, marking, labeling, or placarding;

(2) Format or contents of discharge reports (except immediate reports for emergency response); and

(3) Format or contents of shipping papers, including hazardous waste manifests.

Note.—Paragraph (c)(3) does not apply to any requirements of a state relative to additional information that must be provided by a generator to the operator of a designated facility at or prior to the time of delivery of, or with the shipment of, a hazardous waste to that facility.

(d) If a discharge of hazardous waste occurs during transportation, and an official of a State or local government or

a Federal agency, acting within the scope of his official responsibilities, determines that immediate removal of the waste is necessary to prevent further consequence, that official may authorize the removal of the waste without the preparation of a manifest. [NOTE: In such cases, EPA does not require carriers to have EPA identification numbers.]

(e) If a hazardous material that is a hazardous waste is required by this subchapter to be shipped in a closed head DOT specification drum, and the hazardous waste contains solids or semisolids that would make its placement in a closed head drum impracticable (e.g., a drum with a 2.3 inch bung opening), an equivalent specification open head drum (except for closure) may be used for such a waste.

Note.—1—EPA requires shippers (generators) and carriers (transporters) of hazardous wastes to have identification numbers which must be displayed on hazardous waste manifests. See 40 CFR 262.21 and 263.11. (Identification number application forms (EPA Form 8700-12) may be obtained from EPA Regional Offices.)

Note.—2—The following EPA regulation is set forth in 40 CFR Part 263:

§ 263.31 Discharge clean up

A transporter must clean up any hazardous waste discharge that occurs during transportation or take such action as may be required or approved by Federal, State, or local officials so that the hazardous waste discharge no longer presents a hazard to human health or the environment.

4. Paragraphs (c)(27), (c)(28), (d)(5)(ix), (d)(20), (d)(21) and (d)(22) are added to § 171.7 to read as follows:

§ 171.7 Matter incorporated by reference.

* * * * *

(c) * * *

(27) UN: United Nations: United Nations Sales Section, New York, New York 10017.

(28) OPPSD: Organic Peroxide Producers' Safety Division, Society of the Plastic Industries, Inc., 250 Park Avenue, New York, N.Y. 10017.

(d) * * *

(5) * * *

(ix) ASTM E487-74 is titled, "Standard Test Method for Constant-Temperature Stability of Chemical Materials," 1974 edition.

* * * * *

(20) NIOSH Registry is titled, "Registry of Toxic Effects of Chemical Substances," 1978 edition, available from the Superintendent of Documents.

(21) United Nations Recommendations (UN Recommendations) is titled, "Transport of Dangerous Goods (1977)."

(22) SADT is titled, "Self Accelerating Decomposition Temperature Test," published by the OPPSD.

5. Section 171.8 is amended to add the following definitions in their proper alphabetical sequence:

§ 171.8 Definitions and abbreviations.

* * * * *

"Designated facility" means a hazardous waste treatment, storage, or disposal facility that has been designated on the manifest by the generator.

* * * * *

"EPA" means U.S. Environmental Protection Agency.

* * * * *

"Hazardous substance", for the purposes of this subchapter, means a quantity of a material offered for transportation in one package, or transport vehicle when the material is not packaged, that—

(a) Equals or exceeds the reportable quantity (RQ) specified for the material in EPA regulations at 40 CFR Parts 116 and 117;

(b) is identified by the letter "E" in column 1 of § 172.101; and

(c) When in a mixture or solution in any package offered for transportation is in a concentration which equals or exceeds the following (based on the RQ weight quantities specified in § 172.101):

RQ pounds	RQ kilograms	Concentration by weight	
		Percent	PPM
5000	2270	10	100,000
1000	454	2	20,000
100	45.4	0.2	2,000
10	4.54	0.02	200
1	0.45	0.002	20

"Hazardous waste", for the purposes of this subchapter, means any material that is subject to the hazardous waste manifest requirements of the EPA specified in 40 CFR Part 262 or would be subject to these requirements absent an interim authorization to a state under 40 CFR Part 123, Subpart F.

"Navigable waters" means, for the purposes of this subchapter, waters of the United States, including the territorial seas.

* * * * *

6. Section 171.12 paragraph (b) is revised to read as follows:

§ 171.12 Import and export shipments.

* * * * *

(b) Provisions under which certain hazardous materials may be transported when classed, labeled and described in accordance with the IMCO Code are set forth in § 172.102 of this subchapter.

* * * * *

§ 171.15 [Amended]

7. In § 171.15(a), "(including hazardous wastes)" is added after "hazardous materials" in the third line; in paragraph (b), the period at the end of the first sentence is deleted and the following is added to the end of the first sentence, "or (toll call) on 202-426-2675."

8. In § 171.16, the period at the end of paragraph (a) is deleted and the following is added:

§ 171.16 Detailed hazardous materials incident reports.

(a) * * * or any quantity of hazardous waste has been discharged during transportation. If a report pertains to a hazardous waste discharge—

(1) A copy of the hazardous waste manifest for the waste must be attached to the report, and

(2) An estimate of the quantity of the waste removed from the scene, the name and address of the facility to which it was taken, and the manner of disposition of any unremoved waste, must be entered in Part H of the report (Form F 5800.1).

* * * * *

9. Section 171.17 is added to read as follows:

§ 171.17 Hazardous substance discharge notification.

(a) When a hazardous substance is discharged (accidentally or intentionally) into or upon the navigable waters or adjoining shorelines, the person in charge of the aircraft, vessel, transport vehicle or facility shall, as soon as that person has knowledge of such discharge, notify directly, or indirectly through the carrier, the U.S. Coast Guard National Response Center at (toll free) 800-424-8802, or (toll call) 202-426-2675, and furnish the official to whom the discharge notification is made—

(1) The information required by § 171.15,

(2) The name of the shipper of the hazardous substance, and

(3) The quantity of the hazardous substance discharged, if known.

(b) If the person in charge of the aircraft, vessel, transport vehicle or facility is incapacitated or otherwise unable to make the notification required by this section, the carrier shall make the notification.

(c) An estimate of the quantity of the hazardous substance removed from the scene and the manner of disposition of any removed hazardous substance shall be entered in Part H of the report required by § 171.16 of this Part.

PART 172—HAZARDOUS MATERIALS TABLES AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

10. The title of Part 172 is amended by replacing the word "TABLE" with the word "TABLES."

11. The title of Subpart B is amended by replacing the word "TABLE" with the word "TABLES."

12. Section 172.100 is deleted. A new § 172.101 in association with a revised Hazardous Material Table is adopted as follows:

§ 172.101 Purpose and use of hazardous materials table.

(a) The Hazardous Materials Table (Table) in this section designates the materials listed therein as hazardous materials for the purpose of transportation of those materials in commerce. The Table identifies the class of each listed material, and specifies or references requirements in this subchapter pertaining to its packaging, labeling, and transportation.

(b) Column 1 contains the four symbols as appropriate: Plus (+) and the letters "A", "W", and "E".

(1) The plus (+) fixes the proper shipping name and the hazard class for that entry without regard to whether the material (including its mixtures and solutions) meets the definition of that class. An alternate proper shipping name and hazard class may be authorized by the Associate Director, Office of Hazardous Materials Regulation, MTB.

(2) A letter "A" restricts the application of this subchapter to materials being transported by aircraft, but a letter "A" has no significance or effect when—

(i) A letter "E" also appears with it and the material is a hazardous substance; or

(ii) The material is a hazardous waste.

(3) A letter "W" restricts the application of this subchapter to materials being transported by vessel, but a letter, "W" has no significance or effect when—

(i) A letter "E" also appears with it and the material is a hazardous substance; or

(ii) The material is a hazardous waste.

(4) A letter "E" identifies materials which are subject to the requirements of this subchapter, regardless of the mode of transportation or hazard class, if it is a hazardous substance (as defined in § 171.8 of this subchapter). A hazardous substance which does not meet the defining criteria for another hazard class remains subject to certain requirements of this subchapter as an ORM-E.

(c) Column 2 lists the proper shipping name of materials designated as hazardous materials. Modification of a proper shipping name may otherwise be required or authorized by this section (see Paragraphs (b)(4), (c)(10), (c)(11), (c)(12) and (c)(13) of this section). Proper shipping names are limited to those shown in Roman type (not italics).

(1) Shipping names may be used in the singular or plural and in either capital or lower case letters.

(2) The words in italics are not part of the proper shipping name but may be used in addition to the proper shipping name. The word "or" in italics indicates that any terms in the sequence may be used as the proper shipping name as appropriate.

(3) The abbreviation "n.o.i.", which means "not otherwise indexed", or "n.o.i.b.n.", which means "not otherwise indexed by name", may be used interchangeably with "n.o.s.".

(4) Except for hazardous wastes, when qualifying words are used as part of proper shipping name, their sequence on the package markings and shipping paper descriptions is optional. However, the entry in the Table reflects the preferred sequence.

(5) Except for organic peroxides, when one entry references another entry by use of the word *"see"*, if both names are in Roman type, either name may be used as the proper shipping name (e.g., Carbolic acid. *See* Phenol). For an organic peroxide, the technical name shall be used as the proper shipping name.

(6) The words "poison" or "poisonous" in this column refer to materials that would cause death by systemic poisoning rather than by corrosive destruction of tissue.

(7) When a shipping name includes a concentration range as part of the shipping description, the actual concentration being shipped, if it is within the range stated, may be used in place of the concentration range. For example, a hydrogen peroxide solution containing 30% peroxide may be shipped as either "Hydrogen peroxide solution (8% to 40% peroxide)" or "Hydrogen peroxide solution, 30% peroxide".

(8) The use of the prefix "mono" is optional in any shipping name when appropriate. Thus, Monoethanolamine may be used interghangeably with Ethanolamine. In "Difluoromonochloroethane" the term "mono" is considered to be a prefix to the term "chloroethane" and may be deleted.

(9) The numbers in italics following a proper shipping name of a material identified by the letter "E" in column 1 specify, in pounds and kilograms, the minimum quantity of the material that constitutes a reportable quantity. For example: Sodium arsenate *(RQ-1000/454)* means that the reportable quantity is 1,000 pounds or 454 kilograms.

(10) If not included in a proper shipping name in the Table, the proper shipping name for a hazardous material that is a hazardous waste must include the word "Waste" preceding the name of the material. For example: Waste acetone.

(11) A mixture or solution comprised of a hazardous material identified in the Table by technical name and a non-hazardous material may be described using the proper shipping name of the hazardous material, if—

(i) The mixture or solution is not specifically identified in the Table;

(ii) The hazard class of the mixture or solution is the same as that of the hazardous material, and

(iii) The qualifying word "mixture" or "solution", as appropriate, is added as part of the proper shipping name. For example, a solution of Acetone, mineral oil, and water, meeting the defintion of a flammable liquid, may be described under this optional provision as "Acetone solution, Flammable liquid, UN 1090."

(12) If the proper shipping name for a mixture or solution that is a hazardous substance does not include the name of the hazardous substance or substances, each hazardous substance must be identified in association with the basic description.

(13) Except for proper shipping names in the Table that are preceded by a plus (+)—

(i) If it is specifically determined that a material meets the definition of a hazard class other than the class shown in association with the proper shipping name, the material must be described by an appropriate shipping name listed in association with the correct class for the material or—

(ii) If an appropriate technical name is not shown in the Table, selection of a proper shipping name must be made from the general descriptions or n.o.s. entries corresponding to the specific hazard class of the material being shipped. The name that most appropriately describes the material must be used e.g., an alcohol not listed by name in the Table must be shipped as "Alcohol, n.o.s." rather than "Flammable liquid, n.o.s." Some mixtures may be more appropriately described according to their application, such as "Compound, cleaning, liquid" or "Compound rust removing," rather than by an n.o.s. entry, such as "Corrosive liquid, n.o.s."

(iii) If a material meets the definition of more than one hazard class, and is not specifically identified in the Table, the hazard class of the material must be determined by using the precedence specified in § 173.2 of this subchapter, and an appropriate shipping description must be selected as described in paragraph (c)(13)(ii) of this section.

(iv) If it is specifically determined that a material is not a forbidden material and does not meet the definition of any hazard class, the material is not a hazardous material.

(d) Column 3 contains a designation of the hazard class corresponding to each proper shipping name, or the word "Forbidden".

(1) A material for which the entry in this column is "Forbidden" is prohibited from being offered or accepted for transportation. This prohibition does not apply if these materials are diluted, stabilized, or incorporated in devices and they are classed in accordance with the definitions of hazardous materials contained in Part 173 of this subchapter.

(2) When re-evaluation of test data or new data indicates a need to modify the "Forbidden" designation or the hazard class specified for a material specifically identified in the Table, this data should be submitted to the Associate Director, Office of Hazardous Materials Regulation, MTB.

(e) Column 3(a) lists the identification numbers assigned to hazardous materials. Those preceded by a "UN" are associated with descriptions considered appropriate for international shipments as well as domestic shipments. Those preceded by an "NA" are associated with descriptions that are not recognized for international shipments, except to and from Canada. If an identification number is in the "NA9000" series, it is either associated with the description of a material that is not appropriately covered by international hazardous materials (dangerous goods) shipping standards or not appropriately addressed by such standards for emergency response information purposes, except for transportation between the United States and Canada.

(f) Column 4 specifies the labels required to be applied to each package, subject to the additional labeling requirements in § 172.402.

(g) Column 5 references the applicable packaging section of Part 173 of this subchapter. Exceptions from some of the requirements of this subchapter are noted in column 5(a). Other exceptions relating to the specific mode of transportation are contained in Parts 174, 175, 176, and 177 of this subchapter. Reference to specific packaging requirements and certain additional exceptions are noted in column 5(b).

(h) Column 6 specifies the maximum net quantity in one package for transportation by aircraft or passenger railcar. In this column, "Forbidden" means the material may not be offered or carried and is limited in its applicability only to the types of transportation covered by the column. In addition, an exception for certain flammable liquids is provided in § 173.118 of this subchapter.

(1) Column 6(a) specifies the maximum net quantity permitted in one package for transportation by passenger-carrying aircraft or passenger railcar. For transportation by aircraft, any material forbidden on passenger-carrying aircraft but permitted on cargo aircraft, or which exceeds the maximum quantity authorized on passenger-carrying aircraft, must be shipped by cargo-only aircraft and bear the CARGO AIRCRAFT ONLY label as described in § 172.448.

(2) Column 6(b) specifies the maximum net quantity permitted in one package for transportation by cargo-only aircraft. When offered for transportation by aircraft, a package must bear the CARGO AIRCRAFT ONLY label when the quantity of hazardous material in one package exceeds that authorized on passenger-carrying aircraft, or is forbidden on passenger-carrying aircraft.

(i) Column 7 specifies each of the authorized locations on board cargo vessels and passenger vessels and certain additional requirements for shipments of each listed hazardous material. Section 176.63 of this subchapter sets forth the physical requirements for each of the authorized locations listed in Column 7. (For bulk shipments by vessel see 46 CFR Parts 30 to 40, 70, 98, 148, 151, 153, and 154.)

(1) "1" means the material may be stowed "on deck" subject to the requirements of § 176.63(b) of this subchapter. When both "on deck" and "under deck" are authorized, "under deck" should be used if is available.

(2) "2" means the material may be stowed "under deck" in a compartment or hold subject to the requirements of § 176.63(c). When both "on deck" and "under deck" are authorized, "under deck" should be used if it is available.

(3) "3" means the material may be stowed "under deck away from heat" in a ventilated compartment or hold subject to the requirements of § 176.63(d) of this subchapter.

(4) "4" means the material is authorized to be transported in only the limited quantities specified in the CFR section listed in Column 5 and is subject to the stowage requirements specified for a cargo vessel for the same material.

(5) "5" means the material is forbidden and may not be offered or accepted for transportation.

(6) "6" means the material is authorized to be transported in a magazine subject to the requirements of §§ 176.135 through 176.144 of this subchapter.

(j) If the proper shipping name or hazard class of a material is changed by an amendment to the Table, such a change does not apply to the shipment of any package filled prior to the effective date of the amendment, unless specifically stated otherwise in the amendment.

(k) Except for hazardous substances and hazardous wastes, Amendment No. 172-58, to the extent that it requires a change in the shipping name or class of a material, applies after June 30, 1981.

§172.101 Hazardous Materials Table

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Accumulator, pressurized *(pneumatic or hydraulic), containing nonflammable gas*	Nonflammable gas	NA1956	Nonflammable gas	173.306		No limit	No limit	1,2	1,2	
	Acetal	Flammable liquid	UN1088	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
E	Acetaldehyde *(ethyl aldehyde)* *(RQ-1000/454)*	Flammable liquid	UN1089	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
EA	Acetaldehyde ammonia *(RQ-1000/454)*	ORM-A	UN1841	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Acetic acid *(aqueous solution)* *(RQ-1000/454)*	Corrosive material	UN2790	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Stow separate from nitric acid or oxidizing materials
E	Acetic acid, glacial *(RQ-1000/454)*	Corrosive material	UN2789	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Stow separate from nitric acid or oxidizing materials. Segregation same as for flammable liquids
E	Acetic anhydride *(RQ-1000/454)*	Corrosive material	UN1715	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Acetone	Flammable liquid	UN1090	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
E	Acetone cyanohydrin *(RQ-10/4.54)*	Poison B	UN1541	Poison	None	173.346	Forbidden	55 gallons	1	5	Shade from radiant heat. Stow away from corrosive materials
	Acetone oil	Flammable liquid	UN1091	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Acetonitrile	Flammable liquid	UN1648	Flammable liquid	173.118	173.119	1 quart	10 gallons	1	4	Shade from radiant heat
	Acetyl acetone peroxide, *in solution with not more than 9% by weight active oxygen. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2080								
	Acetyl acetone peroxide with more that 9% by weight active oxygen	Forbidden									
	Acetyl benzoyl peroxide, *not more than 40% in solution. See* Acetyl benzoyl peroxide solution, *not over 40% peroxide*		UN2081								
	Acetyl benzoyl peroxide, solid, or more than 40% in solution	Forbidden									
	Acetyl benzoyl peroxide solution, *not over 40% peroxide*	Organic peroxide	UN2081	Organic peroxide	None	173.222	Forbidden	1 quart	1,2	1	
E	Acetyl bromide *(RQ-5000/2270)*	Corrosive material	UN1716	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Acetyl chloride *(RQ-5000/2270)*	Flammable liquid	UN1717	Flammable liquid	173.244	173.247	1 quart	1 gallon	1	1	Stow away from alcohols. Keep cool and dry. Separate longitudinally by an intervening complete compartment or hold from explosives
	Acetyl cyclohexanesulfonyl peroxide, more than 82%, wetted with less than 12% water	Forbidden									
	Acetyl cyclohexanesulphonyl peroxide, *not more than 82%, wetted with not less than 12% water. See* Organic peroxide, solid, n.o.s.		UN2082								
	Acetyl cyclohexanesulphonyl peroxide, *not more than 32% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2083								
	Acetylene	Flammable gas	UN1001	Flammable gas	None	173.303	Forbidden	300 pounds	1	1	Shade from radiant heat
	Acetylene (liquid)	Forbidden									
	Acetylene silver nitrate	Forbidden									
A	Acetylene tetrabromide	ORM-A	UN2504	None	173.505	173.510	10 gallons	55 gallons			
	Acetyl iodide	Corrosive material	UN1898	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Acetyl peroxide, *not more than 25% in solution. See* Acetyl peroxide solution, *not over 25% peroxide*		UN2084								
	Acetyl peroxide, solid, or more than 25% in solution	Forbidden									
	Acetyl peroxide solution, *not over 25% peroxide*	Organic peroxide	UN2084	Organic peroxide	173.153	173.222	Forbidden	1 quart	1,2	1	
	Acid butyl phosphate	Corrosive material	UN1718	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Acid carboy, empty. *See* Carboy, empty.										
	Acid, liquid, n.o.s.	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	5 pints	1	4	Keep cool
	Acid, sludge	Corrosive material	UN1906	Corrosive	None	173.248	Forbidden	1 quart	1,2	1	
+E	Acrolein, inhibited *(RQ-1/.454)*	Flammable liquid	UN1092	Flammable liquid and Poison	None	173.122	Forbidden	1 quart	1,2	5	Keep cool. Stow away from living quarters
	Acrylic acid	Corrosive material	UN2218	Corrosive	173.244	173.245	1 quart	5 pints	1	1	
E	Acrylonitrile *(RQ-100/45.4)*	Flammable liquid	UN1093	Flammable liquid and Poison	None	173.119	Forbidden	1 quart	1,2	5	Keep cool
	Actuating cartridge, explosive *(fire extinguisher, or valve)*	Class C explosive		Explosive C	173.114		50 pounds	150 pounds	1,2	1,2	Keep cool and dry
	Adhesive, n.o.s. *See* Cement, liquid, n.o.s.										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Adipic acid (*RQ-5000/2270*)	ORM-E	NA9077	None	None	173.510	No limit	No limit	1,2	1,2	
	Aerosol product. See Compressed gas, n.o.s.										
	Air, compressed	Nonflammable gas	UN1002	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	Air conditioning machine. *See* Refrigerating machine										
	Aircraft rocket engine (*Commercial*)	Flammable solid	NA2791	Flammable solid	None	173.238	Forbidden	550 pounds	1,3	5	
	Aircraft rocket engine igniter (*Commercial*)	Flammable solid	UN2792	Flammable solid	None	173.238	Forbidden	25 pounds	1,3	5	
	Airplane flare. See Fireworks, special										
	Alcoholic beverage	Flammable liquid	UN1170	Flammable liquid	173.118	173.125	See 173.118(c)	10 gallons	1,2	1	
	Alcoholic beverage	Combustible liquid	UN1170	None	173.118a	None	No limit	No limit	1,2	1,2	
	Alcohol, n.o.s.	Flammable liquid	UN1987	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Alcohol, n.o.s.	Combustible liquid	UN1987	None	173.118a	None	No limit	No limit	1,2	1,2	
E	Aldrin (*RQ-1/.454*)	Poison B	NA2761	Poison	173.364	173.376	50 pounds	200 pounds	1,2	1,2	
EA	Aldrin, cast solid (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Aldrin mixture, dry (*with more than 65% aldrin*) (*RQ-1/.454*)	Poison B	NA2761	Poison	173.364	173.376	50 pounds	200 pounds	1,2	1,2	
EA	Aldrin mixture, dry, with 65% or less aldrin (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Aldrin mixture, liquid (*with more than 60% aldrin*) (*RQ-1/.454*)	Poison B	NA2762	Poison	173.345	173.361	1 quart	55 gallons	1,2	1,2	If flash point less than 141 deg F, segregation same as for flammable liquids
EA	Aldrin mixture, liquid, with 60% or less aldrin (*RQ-1/.454*)	ORM-A	NA2762	None	173.505	173.510	No limit	No limit	1,2	1,2	
	Alkaline *(corrosive)* liquid, n.o.s.	Corrosive material	NA1719	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
	Alkaline battery fluid	Corrosive material	NA2797	Corrosive	173.244	173.249 173.257	1 quart	5 gallons	1,2	1,2	
	Alkaline battery fluid with empty storage battery	Corrosive material	NA2797	Corrosive	None	173.258	Forbidden	5 pints	1,2	1,2	
	Alkanesulfonic acid	Corrosive material	UN2584	Corrosive	173.244	173.245	5 pints	1 gallon	1,2	1	
	Alkyl aluminum halides. See Pyrophoric liquid, n.o.s.										
A	Allethrin	ORM-A		None	173.505	173.510	No limit	No limit			
E	Allyl alcohol (*RQ-100/45.5*)	Flammable liquid	UN1098	Flammable liquid and Poison	173.118	173.119	1 quart	10 gallons	1,2	1	
	Allyl bromide	Flammable liquid	UN1099	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,2	1	
E	Allyl chloride (*RQ-1000/454*)	Flammable liquid	UN1100	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Allyl chlorocarbonate	Flammable liquid	UN1722	Flammable liquid	None	173.288	Forbidden	5 pints	1	5	Keep dry. Separate longitudinally by an intervening complete hold or compartment from explosives. Segregation same as for corrosive materials
	Allyl chloroformate. *See* Allyl chlorocarbonate										
	Allyl trichlorosilane	Corrosive material	UN1724	Corrosive	None	173.290	Forbidden	10 gallons	1	1	Keep dry
	Aluminum alkyl. *See* Pyrophoric liquid, n.o.s.										
	Aluminum bromide, anhydrous	Corrosive material	UN1725	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Aluminum dross, wet or hot. See 173.173	Forbidden									
	Aluminum hydride	Flammable solid	UN2463	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Aluminum, liquid. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish, *etc.*										
	Aluminum, metallic, powder	Flammable solid	UN1396	Flammable solid	173.232	173.232	25 pounds	100 pounds	1,2	1,2	Keep dry. Segregation same as for flammable solids labeled dangerous when wet
	Aluminum nitrate	Oxidizer	UN1438	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Aluminum phosphate solution	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Aluminum phosphide	Flammable solid	UN1397	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1,2	1,2	Stow away from acids and oxidizing materials
E	Aluminum sulfate, solid (*RQ-5000/2270*)	ORM-E	NA9078	None	None	173.510	No limit	No limit	1,2	1,2	
EA	Aluminum sulfate solution (*RQ-5000/2270*)	ORM-B	NA1760	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
	Amatol. See High explosive										
	2-(2-Aminoethoxy) ethanol	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	N-Aminoethylpiperazine	Corrosive material	UN2815	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Aminopropyldiethanolamine	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	N-Aminopropylmorpholine	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	bis (Aminopropyl) piperazine	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Ammonia, anhydrous (*RQ-100/45.4*)	Nonflammable gas	UN1005	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow in well ventilated space
E	Ammonia solution (*containing more than 44% ammonia*) (*RQ-1000/454*)	Nonflammable gas	UN2073	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow in well ventilated space
	Ammonia solution (containing 44% or less ammonia in water). See Ammonium hydroxide										
E	Ammonium acetate (*RQ-5000/2270*)	ORM-E	NA9079	None	None	173.510	No limit	No limit	1,2	1,2	
	Ammonium arsenate, solid	Poison B	UN1546	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	Stow away from alkaline corrosives
	Ammonium azide	Forbidden									
E	Ammonium benzoate (*RQ-5000/2270*)	ORM-E	NA9080	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium bicarbonate (*RQ-5000/2270*)	ORM-E	NA9081	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium bifluoride, solid *or* solution. *See* Ammonium hydrogen fluoride, solid *or* solution										
EA	Ammonium bisulfite, solid (*RQ-5000/2270*)	ORM-B	NA2693	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
E	Ammonium bisulfite solution (*RQ-5000/2270*)	Corrosive material	NA2693	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
	Ammonium bromate	Forbidden									
EA	Ammonium carbamate (*RQ-5000/2270*)	ORM-A	NA9083	None	173.505	173.510	50 pounds	No limit	1,2	1,2	Keep away from heat.
EA	Ammonium carbonate (*RQ-5000/2270*)	ORM-A	NA9084	None	173.505	173.510	50 pounds	No limit	1,2	1,2	Keep away from heat, acids, alum and salts of iron or zinc.
	Ammonium chlorate	Forbidden									
E	Ammonium chloride (*RQ-5000/2270*)	ORM-E	NA9085	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium chromate (*RQ-1000/454*)	ORM-E	NA9086	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium citrate (*RQ-5000/2270*)	ORM-E	NA9087	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium dichromate (*ammonium bichromate*) (*RQ-1000/454*)	Oxidizer	UN1439	Oxidizer	173.153	173.154 173.235	25 pounds	100 pounds	1,2	1,2	
EA	Ammonium fluoborate (*RQ-5000/2270*)	ORM-B	NA9088	173.505	None	173.510	25 pounds	100 pounds	1,2	1,2	
EA	Ammonium fluoride (*RQ-5000/2270*)	ORM-B	UN2505	173.505	173.505	173.800	25 pounds	100 pounds	1,2	1,2	
	Ammonium fulminate	Forbidden									
E	Ammonium hydrogen fluoride, solid (*RQ-5000/2270*)	Corrosive material	UN1727	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
E	Ammonium hydrogen fluoride solution (*RQ-5000/2270*)	Corrosive material	UN2817	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Keep dry
A	Ammonium hydrogen sulfate	ORM-B	UN2506	None	173.505	173.800	25 pounds	100 pounds			
A	Ammonium hydrosulfide solution	ORM-A	NA2683	None	173.505	173.605	10 gallons	55 gallons			
E	Ammonium hydroxide (*containing not more than 44% ammonia*) (*RQ-1000/454*)	Corrosive material	NA2672	Corrosive	173.244	173.245	2 gallons	2 gallons	1	4	
	Ammonium nitrate-carbonate mixture	Oxidizer	UN2068	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate fertilizer, *containing no more than 0.2% carbon*	Oxidizer	UN2067	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate - fuel oil mixture. See High explosive										
	Ammonium nitrate - fuel oil mixture (*Containing only prilled ammonium nitrate and fuel oil*). *See* Blasting agent, n.o.s.										
	Ammonium nitrate mixed fertilizer	Oxidizer	UN2069	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate (no organic coating)	Oxidizer	NA1942	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate (organic coating)	Oxidizer	NA1942	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate-phosphate	Oxidizer	UN2070	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Ammonium nitrate, solution (*containing not less than 15% water*). *See 173.154(a)(17) and 173.154(a)(18)*	Oxidizer	NA2426	Oxidizer							
	Ammonium nitrite	Forbidden									
E	Ammonium oxalate (*RQ-5000/2270*)	ORM-A	NA2449	None	173.505	173.510	50 pounds	200 pounds	1,2	1,2	
	Ammonium perchlorate	Oxidizer	UN1442	Oxidizer	173.153	173.239a	25 pounds	100 pounds	1,2	4	Stow away from powdered metals
	Ammonium perchlorate. *See* High explosive										
	Ammonium permanganate	Oxidizer	NA9190	Oxidizer	None	173.154	Forbidden	Forbidden	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide. This material may be forbidden in water transportation by certain countries
	Ammonium picrate, dry. See High explosive										
	Ammonium picrate, wet (*with 10% or more water*)	Flammable solid	UN1310	Flammable solid	173.192		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Ammonium picrate, wet, with 10% or more water, over 16 ounces in one outside packaging. See High explosive										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
A	Ammonium polysulfide solution	ORM-A	UN2818	None	173.505	173.605	10 gallons	55 gallons			
EA	Ammonium silicofluoride (*RQ-1000/454*)	ORM-B	UN2854	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
E	Ammonium sulfamate (*RQ-5000/2270*)	ORM-E	NA9089	None	None	173.510	No limit	No limit	1,2	1,2	
W	Ammonium sulfate nitrate	ORM-C	NA1477	None	173.505	173.910			1,2	1,2	Must not be accepted for transportation while hot. Separate by an intervening hold or compartment from Class A explosives. Separate from other explosives, corrosive materials, flammable solids, liquids, or gases, oxidizing materials, organic peroxides, or organic materials
E	Ammonium sulfide solution (*RQ-5000/2270*)	Flammable liquid	UN2683	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
E	Ammonium sulfite (*RQ-5000/2270*)	ORM-E	NA9090	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium tartrate (*RQ-5000/2270*)	ORM-E	NA9091	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium thiocyanate (*RQ-5000/2270*)	ORM-E	NA9092	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ammonium thiosulfate (*RQ-5000/2270*)	ORM-E	NA9093	None	None	173.510	No limit	No limit	1,2	1,2	
	Ammunition, chemical (containing a Poison A liquid or gas). See Chemical ammunition, nonexplosive (*containing a Poison A material*)										
	Ammunition, chemical (containing a Poison B material). See Chemical ammunition, nonexplosive (*containing a Poison B material*)										
	Ammunition, chemical (containing an irritating liquid or solid). See Chemical ammunition, nonexplosive (*containing an irritating material*)										
	Ammunition, chemical, explosive, with Poison A material	Class A explosive		Explosive A and Poison gas	None	173.59	Forbidden	Forbidden	6	5	No other cargo may be stowed in the same hold with these items
	Ammunition, chemical, explosive, with Poison B material	Class A explosive		Explosive A and Poison	None	173.59	Forbidden	Forbidden	6	5	No other cargo may be stowed in the same hold with these items
	Ammunition, chemical, explosive, with irritant	Class A explosive		Explosive A and Irritant	None	173.59	Forbidden	Forbidden	6	5	No other cargo may be stowed in the same hold with these items
	Ammunition for cannon with empty projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon with explosive projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with gas projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with illuminating projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with incendiary projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with inert loaded projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon without projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2		5
	Ammunition for cannon with smoke projectile	Class A explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with solid projectile	Class B explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for cannon with tear gas projectile	Class A Explosive		Explosive A	None	173.54	Forbidden	Forbidden	6	5	
	Ammunition for cannon with tear gas projectile	Class B Explosive		Explosive B	None	173.89	Forbidden	Forbidden	1,2	5	
	Ammunition for small-arms with explosive projectile	Class A explosive		Explosive A	None	173.58	Forbidden	Forbidden	6	5	
	Ammunition for small-arms with incendiary projectile	Class A explosive		Explosive A	None	173.58	Forbidden	Forbidden	6	5	
	Ammunition, non-explosive. See 173.55										
	Ammunition, rocket. See Rocket ammunition with ...										
	Ammunition, small-arms. *See* Small-arms ammunition										
E	Amyl acetate (*RQ-1000/454*)	Flammable liquid	UN1104	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Amyl acid phosphate	Corrosive material	UN2819	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Amylamine	Flammable liquid	UN1106	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Amyl chloride	Flammable liquid	UN1107	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Amylene, *normal*	Flammable liquid	UN1108	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	1,3	
	Amyl formate	Flammable liquid	UN1109	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Amyl mercaptan	Flammable liquid	UN1111	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	1	
	Amyl nitrite	Flammable liquid	UN1113	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	tert-Amyl peroxy-2-ethylhexanoate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2898								
	tert-Amyl peroxyneodecanoate, *not more than 75% with phlegmatizer. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2891								
	Amyl trichorosilane	Corrosive material	UN1728	Corrosive	None	173.280	Forbidden	10 gallons	1	5	Keep dry
E	Anhydrous ammonia. *See* Ammonia, anhydrous										
	Anhydrous hydrazine. *See* Hydrazine, anhydrous										
E	Anhydrous hydrofluoric acid. *See* Hydrogen fluoride										
	Aniline oil drum, empty *See 173.347(d)*	Poison B							1,2	1	Do not accept unless returnable package notice is on drum and the instructions thereon have been carried out
+E	Aniline oil, liquid (*RQ-1000/454*)	Poison B	UN1547	Poison	None	173.347	Forbidden	55 gallons	1,2	1,2	Stow away from oxidizing materials and acids
	Anisoyl chloride	Corrosive material	UN1729	Corrosive	173.244	173.279	1 quart	1 quart	1	1	Keep dry
	Antifreeze compound, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Antifreeze compound, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Antifreeze preparation, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Antifreeze preparation, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
E	Antimonous chloride. *See* Antimony trichloride										
A	Antimony lactate, solid	ORM-A	UN1550	None	173.505	173.510	No limit	No limit			
E	Antimony pentachloride (*RQ-1000/454*)	Corrosive material	UN1730	Corrosive	None	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Antimony pentachloride solution (*RQ-1000/454*)	Corrosive material	UN1731	Corrosive	173.244	173.245	1 quart	5 pints	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Antimony pentafluoride	Corrosive material	UN1732	Corrosive	None	173.246	Forbidden	25 pounds	1	5	Keep dry
EA	Antimony potassium tartrate, solid (*RQ-1000/454*)	ORM-A	UN1551	None	173.505	173.510	No limit	No limit	1,2	1,2	
	Antimony sulfide and a chlorate, mixtures of	Forbidden									
A	Antimony sulfide, solid	ORM-A	NA1325	None	173.505	173.510	No limit	No limit			
E	Antimony tribromide, solid (*RQ-1000/454*)	Corrosive material	NA1549	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry.
E	Antimony tribromide solution (*RQ-1000/454*)	Corrosive material	NA1549	Corrosive	173.244	173.245	1 quart	5 pints	1	1	Keep dry.
E	Antimony trichloride, solid (*RQ-1000/454*)	Corrosive material	UN1733	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
E	Antimony trichloride solution (*RQ-1000/454*)	Corrosive material	UN1733	Corrosive	173.244	173.245	1 quart	5 pints	1	1	Keep dry
E	Antimony trifluoride, solid (*RQ-1000/454*)	Corrosive material	NA1549	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry.
E	Antimony trifluoride solution (*RQ-1000/454*)	Corrosive material	NA1549	Corrosive	173.244	173.245	1 quart	5 pints	1	1	Keep dry.
E	Antimony trioxide (*RQ-5000/2270*)	ORM-E	NA9201	None	None	173.510	No limit	No limit	1,2	1,2	
E	Aqua ammonia solution *(containing 44% or less ammonia). See* Ammonium hydroxide										
	Argon.	Nonflammable gas	UN1006	Nonflammable gas	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,3	
	Argon, liquid pressurized	Nonflammable gas	UN1951	Nonflammable gas	None	173.304	Forbidden	300 pounds	1,3	1,3	
	Arsenic acid, solid	Poison B	UN1554	Poison	173.364	173.366	50 pounds	200 pounds	1,2	1,2	
	Arsenic acid solution	Poison B	UN1553	Poison	173.345	173.348	1 quart	55 gallons	1,2	1,2	
	Arsenical compound, liquid, n.o.s., *or* Arsenical mixture, liquid, n.o.s.	Poison B	UN1556	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Arsenical compound, solid, n.o.s., *or* Arsenical mixture, solid, n.o.s.	Poison B	UN1557	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	Keep dry
	Arsenical dip, liquid *(sheep dip)*	Poison B	NA1557	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Arsenical dust	Poison B	UN1562	Poison	173.364	173.368	50 pounds	200 pounds	1,2	1,2	
	Arsenical pesticide *(compounds and preparations)*, liquid	Flammable liquid	UN2760	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Arsenical pesticide *(compounds and preparations)*, liquid	Poison B	UN2759	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Arsenical pesticide *(compounds and preparations)*, solid	Poison B	UN2759	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	
	Arsenic bromide, solid	Poison B	UN1555	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Arsenic chloride *(arsenious)* liquid. *See* Arsenic trichloride										
E	Arsenic disulfide. *See* Arsenic sulfide, solid										
	Arsenic iodide, solid	Poison B	NA1557	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Arsenic pentoxide, solid (*RQ-5000/2270*)	Poison B	UN1559	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Special requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Arsenic, solid	Poison B	UN1558	Poison	173.364	173.366	50 pounds	200 pounds	1,2	1,2	
	Arsenic sulfide and a chlorate, mixtures of	Forbidden									
E	Arsenic sulfide, solid (*RQ-5000/2270*)	Poison B	NA1557	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	Keep dry
E	Arsenic trichloride, liquid (*RQ-5000/2270*)	Poison B	UN1560	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
E	Arsenic trioxide, solid (*RQ-5000/2270*)	Poison B	UN1561	Poison	173.364	173.366 173.368	50 pounds	200 pounds	1,2	1,2	
E	Arsenic trisulfide (*RQ-5000/2270*)	Poison B	NA1557	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
E	Arsenic, white, solid. *See* Arsenic trioxide, solid										
E	Arsenious acid, solid. *See* Arsenic trioxide, solid										
	Arsenious and mercuric iodide solution	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Arsine	Poison A	UN2188	Poison gas and Flammable gas	None	173.328	Forbidden	Forbidden	1	5	
	Asbestos	ORM-C		None	173.1090	173.1090	No limit	No limit	1,2	1,2	Stow and handle to avoid airborne particles.
	Ascaridole (organic peroxide)	Forbidden									
W	Asphalt, *at or above its flashpoint*	ORM-C	NA1999	None	None	None	Forbidden	Forbidden	1	5	When applicable, no fire or residue thereof may be present in the furnace heating the substance while the vehicle is on board a cargo vehicle
	Asphalt, cut back	Flammable liquid	NA1999	Flammable liquid	173.118	173.131	1 quart	10 gallons	1,2	1	
	Asphalt, cut back	Combustible liquid	NA1999	None	173.118a	None	No limit	No limit	1,2	1,2	
	Automobile, motorcycle, tractor, or other self-propelled vehicle. See Motor vehicle										
	Automobile, motorcycle, tractor, or other self-propelled vehicle, engine, or other mechanical apparatus, with charged electric storage battery, wet. See Motor vehicle										
	Azaurolic acid (salt of), (dry)	Forbidden									
	3-Azido-1,2-Propylene glycol dinitrate	Forbidden									
	5-Azido-1-hydroxy tetrazole	Forbidden									
	Azidodithiocarbonic acid	Forbidden									
	Azidoethyl nitrate	Forbidden									
	Azido guanidine picrate (dry)	Forbidden									
	Azido hydroxy tetrazole (mercury and silver salts)	Forbidden									
E	Azinphos methyl (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.364	173.365	50 pounds	200 pounds	1,2	4	
	1-Aziridinyl phosphine oxide (tris). *See* Tris-(1-aziridinyl) phosphine oxide										
	Azotetrazole (dry)	Forbidden									
	Bags, burlap, used, must be classed for the hazardous material previously contained in bag. See 173.28, 173.29										
	Bags, sodium nitrate, empty and unwashed	Flammable solid	UN1353	Flammable solid	None	173.153	Forbidden	25 pounds	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Barium azide, wet, *50% or more water*	Flammable solid	UN1571	Flammable solid	None	173.239	Forbidden	1 pound	1,2	1,2	Stow away from heavy metals
	Barium chlorate	Oxidizer	UN1445	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals
	Barium chlorate, wet	Oxidizer	NA1445	Oxidizer	173.153	173.163	25 pounds	200 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals
E	Barium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1565	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Barium nitrate	Oxidizer	UN1446	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
A	Barium oxide	ORM-B	UN1884	None	173.505	173.500	25 pounds	100 pounds			
	Barium perchlorate	Oxidizer	UN1447	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow away from powdered metals
	Barium permanganate	Oxidizer	UN1448	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Barium peroxide	Oxidizer	UN1449	Oxidizer	173.153	173.158	25 pounds	100 pounds	1,2	1,2	Keep dry
	Barrel, empty. *See* Drum, empty										
	Battery charger with electrolyte (acid) *or* alkaline battery fluid	Corrosive material	NA2794	Corrosive	None	173.219	Forbidden	5 pints	1,2	1,2	
	Battery, dry. Not subject to Parts 170-189 of this subchapter										
	Battery, electric storage, wet	Corrosive material	NA2794	Corrosive	173.260	173.260	Forbidden	No limit	1,2	1,2	
	Battery, electric storage, wet, with automobile, auto parts, engine (*or other specifically named mechanical apparatus*)	Corrosive material	NA2794	Corrosive	173.250	173.260	No limit	No limit	1,2	1,2	Keep dry
	Battery, electric storage, wet, with containers of electrolyte (acid) *or* alkaline battery fluid	Corrosive material	NA2794	Corrosive	None	173.258	Forbidden	2 gallons	1,2	1,2	
	Battery fluid. See Electrolyte (acid) *or* Alkaline battery fluid										
	Battery, lithium. See 173.206(f)										
W	Battery parts *(plates, grids, etc. unwashed, exhausted)*	ORM-C		None	173.505	173.915			1,2	4	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Benzaldehyde	Combustible liquid	UN1989	None	173.118a	None	No limit	No limit	1,2	1,2	
E	Benzene (*benzol*) (*RQ-1000/454*)	Flammable liquid	UN1114	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Benzene diazonium chloride (dry)	Forbidden									
	Benzene diazonium nitrate (dry)	Forbidden									
	Benzene phosphorus dichloride	Corrosive material	UN2798	Corrosive	None	173.250a	Forbidden	5 pints	1	5	
	Benzene phosphorus thiodichloride	Corrosive material	UN2799	Corrosive	None	173.250a	Forbidden	5 pints	1	5	
	Benzene triozonide	Forbidden									
	Benzidine	Poison B	UN1885	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1	
	Benzine	Flammable liquid	UN1115	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Benzoic acid (*RQ-5000/2270*)	ORM-E	NA9094	None	None	173.510	No limit	No limit	1,2	1,2	
	Benzoic derivative pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2770	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Benzoic derivative pesticide (*compounds and preparations*), liquid	Poison B	UN2769	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Benzoic derivative pesticide (*compounds and preparations*), solid	Poison B	UN2769	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Benzonitrile (*RQ-1000/454*)	Combustible liquid	UN2224	None	173.118b	None	No limit	No limit	1,2	1,2	
	Benzoxidiazoles (dry)	Forbidden									
	Benzoyl azide	Forbidden									
E	Benzoyl chloride(*RQ-1000/454*)	Corrosive material	UN1736	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Benzoyl peroxide	Organic peroxide	NA2085	Organic peroxide	None	173.157 173.158	Forbidden	25 pounds	1,2	1	
	Benzoyl peroxide, *more than 77% but less than 95% with water. See* Benzoyl peroxide.		UN2088								
	Benzoyl peroxide, *not less than 30% but not more than 52% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2089								
	Benzoyl peroxide, *not more than 72% as a paste. See* Organic peroxide, solid, n.o.s.		UN2087								
	Benzoyl peroxide, *not more than 77% with water. See* Benzoyl peroxide.		UN2090								
	Benzoyl peroxide, *technically pure or* Benzoyl peroxide, *more than 52% with inert solid. See* Benzoyl peroxide.		UN2085								
	Benzyl bromide (*bromotoluene, alpha*)	Corrosive material	UN1737	Corrosive	None	173.281	Forbidden	5 pints	1	5	Keep dry
E	Benzyl chloride (*RQ-100/45.4*)	Corrosive material	UN1738	Corrosive	173.244	173.295	Forbidden	1 quart	1	4	Keep dry
	Benzyl chloroformate (*benzyl chlorocarbonate*)	Corrosive	UN1739	Corrosive	None	173.288	Forbidden	5 pints	1	5	Keep dry
E	Beryllium chloride (*RQ-5000/2270*)	Poison B	NA1566	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Beryllium compound, n.o.s.	Poison B	UN1566	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Beryllium fluoride (*RQ-5000/2270*)	Poison B	NA1566	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Beryllium nitrate (*RQ-5000/2270*)	Oxidizer	UN2464	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Biphenyl triozonide	Forbidden									
	Bipyridilium pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2782	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Bipyridilium pesticide (*compounds and preparations*), liquid	Poison B	UN2781	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Bipyridilium pesticide (*compounds and preparations*), solid	Poison B	UN2781	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Black powder	Class A explosive		Explosive A	None	173.60	Forbidden	Forbidden	6	5	
	Black powder igniter with empty cartridge bag	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Blasting agent, n.o.s.[1]	Blasting agent		Blasting agent	None	173.114a	Forbidden	100 pounds	1,2	1,2	
	Blasting caps. See Detonators, Class A *or* Class C explosives										
	Blasting caps, electric. See Detonators, Class A *or* Class C explosives										
	Blasting caps, percussion activated. See Detonators, Class A *or* Class C explosives										
	Blasting caps with detonating cord. See Detonators *and* Detonating primers										
	Blasting caps with metal clad mild detonating fuze. See Detonators, Class A *or* Class C explosives										
	Blasting caps with safety fuse. See Detonators, Class A *or* Class C explosives										
	Blasting caps with shock tubes. See Detonators, Class A *or* Class C explosives										
	Blasting gelatin. See High explosive										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Blasting powder. See Black powder										
W	Bleaching powder, *containing 39% or less available chlorine*	ORM-C	UN2208	None	173.505	173.929			1,2	1,2	Keep dry. Stow separate from flammable liquids and acids. (Stow away from oils, grease, and similar organic materials.
	Boiler compound, liquid	Corrosive material	NA1760	Corrosive	173.244	173.249	1 quart	10 gallons	1,2	1,2	
	Bomb, explosive. See Explosive bomb										
	Bomb, explosive with gas, smoke, or incendiary material. See Explosive bomb										
	Bomb, fireworks. See Fireworks, special										
	Bomb, gas, smoke, or incendiary, nonexplosive. See Chemical ammunition, nonexplosive										
	Bomb, incendiary, or smoke without bursting charge. See Fireworks, special										
	Bomb, practice, with electric primer or electric squib (non-explosive). See 173.55										
	Bomb, sand-loaded or empty (non-explosive). See 173.55										
A	Bone oil	ORM-A		None	173.505	173.510	No limit	No limit			
	Booster, explosive	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Bordeaux arsenite, liquid	Poison B	NA2759	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Bordeaux arsenite, solid	Poison B	NA2759	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Boron tribromide	Corrosive material	UN2692	Corrosive	None	173.251	Forbidden	1 quart	1	5	
	Boron trichloride	Corrosive material	UN1741	Corrosive	None	173.251	Forbidden	1 quart	1,2	5	Stow in well ventilated space. Shade from radiant heat. Segregation same as for nonflammable gases.
+	Boron trifluoride	Nonflammable gas	UN1008	Nonflammable gas and Poison	None	173.302	Forbidden	Forbidden	1	5	Stow away from living quarters and foodstuffs
	Boron trifluoride-acetic acid complex	Corrosive material	UN1742	Corrosive	173.244	173.247	1 quart	1 gallon	1,2	1,2	
	Bottles, having previously contained a hazardous material and not cleaned. See 173.29										
W	Box toe board (*nitrocellulose base*)	ORM-C		None	173.505	173.925			1,3	1,3	Provide cool stowage in a compartment having a temperature not exceeding 150 deg F., well away from any sources of heat, and in position to protect or move, even to jettison in event of fire. Separate from explosives, flammable liquids or gases, oxidizing materials, organic peroxides, or corrosive liquids.
	Box toe gum	Combustible liquid	UN2060	None	173.118a	None	No limit	No limit	1,2	1,2	
	Box toe gum	Flammable liquid	UN2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Bromine	Corrosive material	UN1744	Corrosive	None	173.252	Forbidden	1 quart	1	5	Keep cool
	Bromine azide	Forbidden									
	Bromine pentafluoride	Oxidizer	UN1745	Oxidizer	None	173.246	Forbidden	100 pounds	1	5	Shade from radiant heat. Segregation same as for corrosives
	Bromine trifluoride	Oxidizer	UN1746	Oxidizer and Poison	None	173.246	Forbidden	100 pounds	1	5	Shade from radiant heat. Segregation same as for corrosives
	4-Bromo-1,2-dinitrobenzene (unstable at 59 deg C.)	Forbidden									
	1-Bromo-2-nitrobenzene (unstable at 59 deg C.)	Forbidden									
	Bromoacetic acid, solid	Corrosive material	UN1938	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Bromoacetic acid solution	Corrosive material	UN1938	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permited under deck
	Bromoacetone, liquid	Poison A	UN1569	Poison gas	None	173.329	Forbidden	Forbidden	1	5	Segregation same as for flammable liquids
	Bromobenzene	Combustible liquid	UN2514	None	173.118a	None	No limit	No limit	1,2	1,2	
A	Bromochloromethane	ORM-A	UN1887	None	173.505	173.615	10 gallons	55 gallons			
	Bromosilane	Forbidden									
	Bromotoluene, alpha. See Benzyl bromide										
	Brucine, solid (*dimethoxy strychnine*)	Poison B	UN1570	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
W	Burlap bags, cleaned (*vacuum cleaned, wheel cleaned, or otherwise mechanically brushed*). *See* Burlap cloth										
W	Burlap bags, new. *See* Burlap cloth										
AW	Burlap bags, used and unwashed, *or* not cleaned	ORM-C		None	173.505	173.930	No limit	No limit	1	1	Keep cool
W	Burlap cloth (*hessian*)	ORM-C		None	173.505	173.931			1,2	1,2	Keep dry. Stow away from organic liquids
	Burnt cotton, not repicked	Flammable solid	NA1325	Flammable solid	None	173.150	Forbidden	Forbidden	1	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Burnt fiber	Flammable solid	NA1372	Flammable solid	None	173.150	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials or organic peroxides.

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/Λ/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Burster, explosive	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
+	Butadiene, inhibited	Flammable gas	UN1010	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	Stow away from living quarters
	Butane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
	1,2,4-Butanetriol trinitrate	Forbidden									
	tert-Butoxycarbonyl azide	Forbidden									
	n-Butyl-4,4-di-(tert-butylperoxy)valerate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2140								
	n-Butyl-4,4-di-(tert-butylperoxy)valerate, *not more than 52% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2141								
E	Butyl acetate (*RQ-5000/2270*)	Flammable liquid	UN1123	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	n-Butyl acid phosphate. *See* Acid butyl phosphate										
	Butyl alcohol	Flammable liquid	NA1120	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
E	Butylamine (*RQ-1000/454*)	Flammable liquid	UN1125	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Butyl bromide, *normal*	Flammable liquid	UN1126	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Butyl chloride	Flammable liquid	UN1127	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	tert-Butyl cumyl peroxide, *technically pure or* tert-Butyl cumene peroxide, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2091								
	Butyl ether	Flammable liquid	UN1149	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Butyl formate	Flammable liquid	UN1128	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	tert-Butyl hydroperoxide, *more than 72% but not more than 90% with water. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2094								
	tert-Butyl hydroperoxide, *not more than 72% with water. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2093								
	tert-Butyl hydroperoxide, *not more than 80% in di-tert-butyl peroxide and solvent. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2092								
	tert-Butyl hydroperoxide, *not more than 80% in di-tert-butyl peroxide or solvent. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2092								
	tert-Butyl hydroperoxide, more than 90% with water	Forbidden									
	n-Butyl isocyanate	Flammable liquid	UN2485	Flammable liquid and Poison	173.118	173.119	1 quart	10 gallons	1,2	1	
	tert-Butyl isopropyl benzene hydroperoxide	Organic peroxide	NA2091	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Butyl mercaptan	Flammable liquid	UN2347	Flammable liquid	None	173.141	Forbidden	10 gallons	1,3	5	
	tert-Butyl peroxy-2-ethylhexanoate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2143								
	tert-Butyl peroxy-2-ethylhexanoate, *not more than 30%* with 2,2-Di-(tert-butylperoxy)butane, *not more than 35%, with not less than 35% phlegmatizer. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2886								
	tert-Butyl peroxy-2-ethylhexanoate, *not more than 12%* with 2,2-Di-(tert-butylperoxy)butane, *not more than 14% with not less than 14% phlegmatizer and 60% inert inorganic solid. See* Organic peroxide, solid, n.o.s.		UN2887								
	tert-Butyl peroxy-2-ethylhexanoate, *not more than 50% with phlegmatizer. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2888								
	tert-Butyl peroxy-3,5,5-trimethylhexanoate *or* tert-Butyl peroxyisononanoate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2104								
	3-tert-Butyl peroxy-3-phenylphthalide, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2596								

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	tert-Butyl peroxyacetate, *not more than 76% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2095								
	tert-Butyl peroxyacetate, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2096								
	tert-Butyl peroxyacetate, more than 76% in solution	Forbidden									
	tert-Butyl peroxybenzoate, *not more than 75% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2098								
	tert-Butyl peroxybenzoate, *not more than 50% with inert inorganic solid. See* Organic peroxide, solid, n.o.s.		UN2890								
	tert-Butyl peroxybenzoate, *technically pure or* tert-Butyl peroxybenzoate, *more than 75% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2097								
	tert-Butyl peroxycrotonate, *not more than 76% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2183								
	n-Butyl peroxydicarbonate, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2169								
	n-Butyl peroxydicarbonate, *not more than 27% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2170								
	n-Butyl peroxydicarbonate, more than 52% in solution	Forbidden									
	tert-Butyl peroxydiethylacetate, *33%* with tert-Butyl peroxybenzoate, *33%, and solvent. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2551								
	tert-Butyl peroxydiethylacetate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2144								
	tert-Butyl peroxyisobutyrate, *more than 52% but not more than 77% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2142								
	tert-Butyl peroxyisobutyrate, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2582								
	tert-Butyl peroxyisobutyrate, more than 77% in solution	Forbidden									
	tert-Butyl peroxyisopropyl carbonate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2163								
	tert-Butyl peroxymaleate, *not more than 55% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2100								
	tert-Butyl peroxymaleate, *not more than 55% as a paste. See* Organic peroxide, solid, n.o.s.		UN2101								
	tert-Butyl peroxymaleate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2099								
	tert-Butyl peroxyneodecanoate, *not more than 77% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2177								
	tert-Butyl peroxyneodecanoate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2594								
	tert-Butyl peroxyphthalate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2105								
	tert-Butyl peroxypivalate, *not more than 77% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2110								
	Butyl phosphoric acid. *See* Acid butyl phosphate										
E	n-Butyl phthalate (*RQ-100/45.4*)	ORM-E	NA9095	None	None	173.510	No limit	No limit	1,2	1,2	
	Butyl trichlorosilane	Corrosive material	UN1747	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Butyraldehyde	Flammable liquid	UN1129	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Butyric acid (*RQ-5000/2270*)	Corrosive material	UN2820	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Cabazide	Forbidden									
E	Cadmium acetate (*RQ-100/45.4*)	ORM-E	NA2570	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cadmium bromide (*RQ-100/45.4*)	ORM-E	NA2570	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cadmium chloride (*RQ-100/45.4*)	ORM-E	NA2570	None	None	173.510	No limit	No limit	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
E	Calcium arsenate, solid (*RQ-1000/454*)	Poison B	UN1573	Poison	173.364	173.367 173.368	50 pounds	200 pounds	1,2	1,2	
E	Calcium arsenite, solid (*RQ-1000/454*)	Poison B	NA1574	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Calcium bisulfite solution. *See* Calcium hydrogen sulfite solution										
E	Calcium carbide (*RQ-5000/2270*)	Flammable solid	UN1402	Flammable solid and Dangerous when wet	None	173.178	Forbidden	25 pounds	1,2	1,2	Keep dry. Stow away from copper, its alloys, and salts
	Calcium chlorate	Oxidizer	UN1452	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals and cyanide
	Calcium chlorite	Oxidizer	UN1453	Oxidizer	None	173.160	Forbidden	100 pounds	1,2	1,2	Separate from ammonium compounds, powdered materials, and cyanides
E	Calcium chromate (*RQ-1000/454*)	ORM-E	NA9096	None	None	173.510	No limit	No limit	1,2	1,2	
AW	Calcium cyanamide, not hydrated (*containing more than 0.1% calcium carbide*)	ORM-C	UN1403	None	None	173.945	25 pounds	200 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
E	Calcium cyanide, solid *or* Calcium cyanide mixture, solid (*RQ-10/4.54*)	Poison B	UN1575	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from corrosive liquids. Keep dry
E	Calcium dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9097	None	None	173.510	No limit	No limit	1,2	1,2	
	Calcium hydrogen sulfite solution	Corrosive material	NA2693	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
E	Calcium hypochlorite, hydrated (*minimum 5.5% but not more than 10% water, and containing more than 39% available chlorine*) (*RQ-100/45.4*)	Oxidizer	UN2880	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
E	Calcium hypochlorite mixture, *dry. (Containing more than 39% available chlorine)* (*RQ-100/45.4*)	Oxidizer	UN1748	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	Keep cool and dry
	Calcium, metal	Flammable solid	NA1401	Flammable solid and Dangerous when wet	173.153	173.154	25 pounds	100 pounds	1,2	4	Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet
	Calcium, metal, crystalline	Flammable solid	NA1401	Flammable solid and Dangerous when wet	None	173.231	Forbidden	25 pounds	1,2	5	Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet
	Calcium nitrate (*See 173.182(a) Note*)	Oxidizer	UN1454	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
AW	Calcium oxide	ORM-B	UN1910	None	173.505	173.850	25 pounds	100 pounds	1,2	1,2	Keep dry. Stow away from explosives, acids, combustible materials, and ammonium salts
	Calcium permanganate	Oxidizer	UN1456	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Calcium peroxide	Oxidizer	UN1457	Oxidizer	173.153	173.156	25 pounds	100 pounds	1,2	1,2	Keep dry
	Calcium phosphide	Flammable solid	UN1360	Flammable solid and Dangerous when wet	None	173.161	Forbidden	25 pounds	1	5	Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet
	Calcium resinate	Flammable solid	UN1313	Flammable solid	None	173.166	Forbidden	125 pounds	1	5	
	Calcium resinate, fused	Flammable solid	UN1314	Flammable solid	None	173.166	Forbidden	125 pounds	1	5	
AW	Camphene	ORM-A	NA9011	None	173.505	173.610	No limit	No limit	1,3	1,3	Stow away from foodstuffs and living quarters
	Camphor oil	Combustible liquid	UN1130	None	173.118a	None	No limit	No limit	1,2	1,2	
	Cannon primer	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	5	
	Caprylyl peroxide solution	Organic peroxide	NA2129	Organic peroxide	173.153	173.221	1 quart	1 quart	1,2	4	Keep cool. Stow separate from combustible materials, explosives, or acids
	Caps, blasting. See Detonators, Class A *or* Class C explosives										
	Caps, toy. See Toy caps										
E	Captan (*RQ-10/4.54*)	ORM-E	NA9099	None	None	173.510	100 pounds	No limit	1,2	1,2	
	Carbamate pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2758	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Carbamate pesticide (*compounds and preparations*), liquid	Poison B	UN2757	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Carbamate pesticide (*compounds and preparations*), solid.	Poison B	UN2757	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
EA	Carbaryl (*RQ-100/45.4*)	ORM-A	NA2757	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Carbofuran (*RQ-10/4.54*)	Poison B	NA2757	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+E	Carbolic acid. *See* Phenol										
E	Carbolic acid, liquid (*liquid tar acid containing over 50% phenol*). *See* Phenol, liquid										
E	Carbon bisulfide, *or* Carbon disulfide (*RQ-5000/2270*)	Flammable liquid	UN1131	Flammable liquid	None	173.121	Forbidden	Forbidden	1	5	Keep cool. Not permitted on any vessel transporting explosives
	Carbon dioxide, liquefied	Nonflammable gas	UN2187	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Carbon dioxide-nitrous oxide mixture	Nonflammable gas	UN1015	Nonflammable gas	173.306	173..304	150 pounds	300 pounds	1,2	1,2	
	Carbon dioxide-oxygen mixture	Nonflammable gas	UN1014	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
AW	Carbon dioxide, solid, *or* Dry ice, *or* Carbonice	ORM-A	UN1845	None	None	173.615	440 pounds	440 pounds	1	1	Stow away from open ventilators. Stow away from cyanides or cyanide mixtures, liquid or dry
+	Carbon monoxide	Flammable gas	UN1016	Flammable gas	173.306	173.302	Forbidden	150 pounds	1	4	
	Carbon remover, liquid	Flammable liquid	UN1132	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
EAW	Carbon tetrachloride (*RQ-5000/2270*)	ORM-A	UN1846	None	173.505	173.620	1 quart	55 gallons	1,2	1,2	Stow away from living quarters
	Carbonyl chloride. See Phosgene										
	Carboys, empty, must be classed for the hazardous material previously contained in carboy. See 173.29										
	Cartridge bags, empty, with black powder igniter	Class C explosive		Explosive C	None	173.100	50 pounds	150 pounds	1,3	1,3	
	Cartridge cases, empty, primed	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Cartridge, practice ammunition	Class C explosive		Explosive C	None	173.101a	50 pounds	150 pounds	1,2	1,2	
	Case oil. See Gasoline *or* Naptha										
	Casinghead gasoline. See Gasoline										
W	Castor Beans	ORM-C		None	173.505	173.952			1,2	1,2	Stow away from living quarters and foodstuffs. Bulk shipments permitted in tight vans or containers only on cargo vessels (Castor beans only)
W	Castor pomace. *See* Castor beans										
E	Caustic, potash, dry, solid, flake, bead, *or* granular. *See* Potassium hydroxide, dry, *etc.*										
E	Caustic potash, liquid *or* solution. *See* Potassium hydroxide solution										
E	Caustic soda, dry, solid, flake, bead, *or* granular. *See* Sodium hydroxide, dry, *etc.*										
E	Caustic soda, liquid *or* solution. *See* Sodium hydroxide solution										
W	*Cellosolve. See* Ethylene glycol monoethyl ether										
W	*Cellosolve acetate. See* Ethylene glycol monoethyl ether acetate										
	Cement, adhesive, n.o.s. *See* Cement, liquid, n.o.s.										
	Cement, container, linoleum, tile, *or* wallboard, liquid	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
	Cement, leather	Flammable liquid	NA1133	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cement, liquid, n.o.s.	Combustible liquid	NA1133	None	173.118a	None	No limit	No limit	1,2	1,2	
	Cement, liquid, n.o.s.	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	10 gallons	1,2	1	
	Cement, pyroxylin	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
	Cement, roofing, liquid	Flammable liquid	NA1133	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cement, rubber	Flammable liquid	NA1133	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
	Cesium metal	Flammable solid	UN1407	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Charcoal, activated	Flammable solid	UN1362	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,3	1,3	
	Charcoal briquettes *or* briquets	Flammable solid	NA1361	Flammable solid	173.162	173.162	50 pounds	50 pounds	1,2	1,2	
	Charcoal screenings, made from 'pinon' wood	Flammable solid	NA1361	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,2	1,	
	Charcoal screenings, wet	Forbidden									
	Charcoal, shell	Flammable solid	NA1361	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,2	1,2	
	Charcoal, wet	Forbidden									
	Charcoal, wood, ground, crushed, granulated, *or* pulverized	Flammable solid	NA1361	Flammable solid	173.162	173.162	25 pounds	200 pounds	1,2	1,2	
	Charcoal, wood, lump	Flammable solid	NA1361	Flammable solid	173.162	173.162	50 pounds	50 pounds	1,2	1,2	
	Charcoal wood screenings, other than 'pinon' wood screenings	Flammable solid	NA1361	Flammable solid	None	173.162	Forbidden	Forbidden	1	1	
	Charged oil well jet perforating gun (*total explosive contents in guns 20 pounds or more per motor vehicle*)	Class A explosive		Explosive A	None	173.53 172.90	Forbidden	Forbidden			Forbidden
	Charged oil well jet perforating gun (*total explosive contents in guns not exceeding 20 pounds per motor vehicle or special offshore down hole tool pallet*)	Class C explosive		Explosive C	None	173.53 173.110	Forbidden	Forbidden	1,2	5	Forbidden

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Chemical ammunition, explosive. See Ammunition, chemical, explosive, with ...										
	Chemical ammunition, nonexplosive (*containing a Poison B material*)	Poison B	UN2016	Poison	173.345	173.350	Forbidden	55 gallons			See correct shipping name of applicable Poison B material for stowage, special handling, and special segregation requirements
	Chemical ammunition, nonexplosive (*containing an irritating material*)	Irritating material	UN2017	Irritant	None	173.383	Forbidden	20 pounds			See correct shipping name of applicable Irritant material for stowage, special handling, and special segregation requirements
	Chemical ammunition, nonexplosive (*containing a Poison A material*)	Poison A	UN2016	Poison gas	None	173.330	Forbidden	Forbidden			See correct shipping name of applicable Poison A material for stowage, special handling, and special segregation requirements
	Chemical kit	Corrosive material	NA1760	Corrosive	173.286		1 quart	1 quart	1,3	1,3	
	Chlorate and borate mixture (*containing more than 28% chlorate*)	Oxidizer	UN1458	Oxidizer	173.153	173.229	25 pounds	100 pounds	1,2	4	Stow away from ammonium compounds and away from powdered metals
	Chlorate and magnesium chloride mixture (*containing more than 28% chlorate*)	Oxidizer	UN1459	Oxidizer	173.153	173.229	25 pounds	100 pounds	1,2	4	Stow away from ammonium compounds, and away from powdered metals
	Chlorate explosive, dry. See High explosive										
	Chlorate, n.o.s.	Oxidizer	UN1461	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	4	Stow away from ammonium compounds and away from powdered metals
	Chlorate, n.o.s., wet	Oxidizer	NA1461	Oxidizer	173.153	173.163	25 pounds	200 pounds	1,2	4	Stow away from ammonium compounds and away from powdered metals
	Chlorate of potash. *See* Potassium chlorate										
	Chlorate of soda. *See* Sodium chlorate										
	Chlorate powder. *See* High explosive										
E	Chlordane, liquid (*RQ-1/0.454*)	Flammable liquid	NA2762	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Chlordane, liquid (*RQ-1/0.454*)	Combustible liquid	NA2762	None	173.118a	None	No limit	No limit	1,2	1,2	
	Chloric acid	Oxidizer	NA2626	Oxidizer and Poison	None	173.237	Forbidden	Forbidden			Forbidden
	Chloride of phosphorus. *See* Phosphorus trichloride										
	Chloride of sulfur. *See* Sulfur chloride										
W	Chlorinated lime (*chloride of lime.*) *See* Bleaching powder										
+E	Chlorine (*RQ-10/4.54*)	Nonflammable gas	UN1017	Nonflammable gas and Poison	None	173.304 173.314 173.315	Forbidden	Forbidden	1,2	5	Stow in a well-ventilated space. Stow away from organic materials
	Chlorine azide	Forbidden									
	Chlorine dioxide hydrate, frozen	Oxidizer	NA9191	Oxidizer and Poison	None	173.237	Forbidden	Forbidden			Forbidden
	Chlorine dioxide (not hydrate)	Forbidden									
	Chlorine trifluoride	Oxidizer	UN1749	Oxidizer and Poison	None	173.246	Forbidden	100 pounds	1,3	5	Stow in well ventilated area away from organic material
	Chloroacetic acid, liquid *or* solution	Corrosive material	UN1750	Corrosive	173.244	173.294	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
	Chloroacetic acid, solid	Corrosive material	UN1751	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Chloroacetophenone, gas, liquid, *or* solid (*CN*)	Irritating material	UN1697	Irritant	None	173.382	Forbidden	75 pounds	1	5	
	Chloroacetyl chloride	Corrosive material	UN1752	Corrosive	None	173.253	Forbidden	1 quart	1	5	Keep dry
E	Chlorobenzene(*RQ-100/45.4*)	Flammable liquid	UN1134	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
E	Chlorobenzol. *See* Chlorobenzene										
	p-Chlorobenzoyl peroxide	Organic peroxide	UN2113	Organic peroxide	None	173.157 173.158	Forbidden	25 pounds	1	1	
	p-Chlorobenzoyl peroxide, *not more than 75% with water. See* p-Chlorobenzoyl peroxide.		UN2113								
	p-Chlorobenzoyl peroxide, *not more than 52% as a paste. See* Organic peroxide, solid, n.o.s.		UN2114								
	p-Chlorobenzoyl peroxide, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2115								
	Chlorodinitrobenzene. See Dinitrochlorobenzene										
EAW	Chloroform (*RQ-5000/2270*)	ORM-A	UN1888	None	173.505	173.630	10 gallons	55 gallons	1,2	1,2	Stow away from living quarters and foodstuffs
+	4-Chloro-o-toluidine hydrochloride	Poison B	UN1579	Poison	None	173.362	Forbidden	1 quart	1,2	1,2	
	3-Chloroperoxybenzoic acid, *not more than 86% with 3-chlorobenzoic acid See* Organic peroxide, solid, n.o.s.		UN2755								
	Chlorophenyltrichlorosilane	Corrosive material	UN1753	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
+	Chloropicrin, absorbed	Poison B	NA1583	Poison	None	173.357	Forbidden	Forbidden	1	5	Keep cool
+	Chloropicrin and methyl chloride mixture	Poison A	UN1582	Flammable gas and Poison gas	None	173.329	Forbidden	Forbidden	1	5	Keep cool

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
+	Chloropicrin and nonflammable, nonliquefied compressed gas mixture	Poison A	NA1955	Nonflammable gas and Poison gas	None	173.323	Forbidden	Forbidden	1	5	Keep cool
+	Chloropicrin, liquid	Poison B	UN1580	Poison	None	173.257	Forbidden	Forbidden	1	5	Keep cool
+	Chloropicrin mixture (*containing no compressed gas or Poison A liquid*)	Poison B	UN1583	Poison	None	173.257	Forbidden	Forbidden	1	5	Keep cool
A	Chloroplatinic acid, solid	ORM-B	UN2507	None	173.505	173.800	25 pounds	100 pounds			
	Chloroprene, inhibited	Flammable liquid	UN1991	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Chloroprene, uninhibited	Forbidden									
	2-Chloropropene	Flammable liquid	UN2456	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
E	Chlorosulfonic acid (*RQ-1000/454*)	Corrosive material	UN1754	Corrosive	173.244	173.254	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Chlorosulfonic acid-sulfur trioxide mixture (*RQ-1000/45.4*)	Corrosive material	UN1754	Corrosive	173.244	173.254	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
EA	Chlorpyrifos (*RQ-1/0.454*)	ORM-A	NA2783	None	173.505	173.510	100 pounds	No limit	1,2	1,2	
E	Chromic acetate (*RQ-1000/454*)	ORM-E	NA9101	None	None	173.510	No limit	No limit	1,2	1,2	
E	Chromic acid mixture, dry (*RQ-1000/454*)	Oxidizer	NA1463	Oxidizer	173.153	173.164	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
E	Chromic acid, solid (*RQ-1000/454*)	Oxidizer	NA1463	Oxidizer	173.153	173.164	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs. Stow separate from flammable liquids and solids
E	Chromic acid solution (*RQ-1000/454*)	Corrosive material	UN1755	Corrosive	173.244	173.257	1 quart	1 gallon	1	1	
E	Chromic anhydride. *See* Chromic acid, solid										
	Chromic fluoride, solid	Corrosive material	UN1756	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
	Chromic fluoride solution	Corrosive material	UN1757	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
E	Chromic sulfate (*RQ-1000/454*)	ORM-E	NA9100	None	None	173.510	No limit	No limit	1,2	1,2	
E	Chromic trioxide. *See* Chromic acid, solid										
	Chromium oxychloride *or* Chromyl chloride	Corrosive material	UN1758	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Chromous chloride (*RQ-1000/454*)	ORM-E	NA9102	None	None	173.510	No limit	No limit	1,2	1,2	
	Cigar and cigarette lighter fluid. See Lighter fluid										
	Cigarette lighter (*or other similar ignition device*)	Flammable gas	UN1057	Flammable gas	173.21 173.10	173.306	21 ounces	25 pounds	1	1	
	Cigarette lighter (*or other similar ignition device*)	Flammable liquid	UN1226	Flammable liquid	173.21 173.10	173.118	Forbidden	Forbidden	1	1	
	Cigarette load	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Cloud gas cylinder. See Chemical ammunition, nonexplosive										
	Coal briquettes, hot	Forbidden									
	Coal facings. *See* Coal ground bituminous, *etc.*										
	Coal gas. See Hydrocarbon gas, nonliquefied										
	Coal, ground bituminous, sea coal, coal facings, *etc.*	Flammable solid	NA1361	Flammable solid	173.165		Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Coal oil (*export shipment only*). *See* Kerosene										
	Coal tar distillate	Combustible liquid	UN1137	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar distillate	Flammable liquid	UN1136	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Coal tar dye, liquid (*not otherwise specifically named in 172.101*)	Corrosive material	NA2801	Corrosive	173.244	173.249a	1 quart	10 gallons	1,2	1,2	
	Coal tar light oil	Combustible liquid	NA1137	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar light oil	Flammable liquid	NA1136	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Coal tar naptha	Combustible liquid	NA2553	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar naptha	Flammable liquid	NA2553	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Coal tar oil	Combustible liquid	NA1137	None	173.118a	None	No limit	No limit	1,2	1,2	
	Coal tar oil	Flammable liquid	NA1136	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Coating solution	Flammable liquid	UN1139	Flammable liquid	173.118	173.132	1 quart	15 gallons	1,2	1	
E	Cobaltous bromide (*RQ-1000/454*)	ORM-E	NA9103	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cobaltous formate (*RQ-1000/454*)	ORM-E	NA9104	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cobaltous sulfamate (*RQ-1000/454*)	ORM-E	NA9105	None	None	173.510	No limit	No limit	1,2	1,2	
	Cobalt resinate, precipitated	Flammable solid	UN1318	Flammable solid	None	173.166	Forbidden	125 pounds	1,2	1,2	
	Cocculus, solid (*fishberry*)	Poison B	UN1584	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
W	Coconut meal pellets *containing at least 6% and not more than 13% moisture and not more than 10% residual fat content*	ORM-C		None	173.505	173.955			1,2	4	Keep dry
	Coir. *See* Fibers										
	Coke, hot	Forbidden									
	Collodion	Flammable liquid	NA2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cologne spirits (*alcohol*)	Flammable liquid	NA1170	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Columbian spirits (*wood alcohol*)	Flammable liquid	NA1230	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Combination fuze	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Combination primer	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	5	
	Combustible liquid, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Commercial shaped charge. See High explosive										
	Common fireworks. *See* Fireworks, common										
	Compound, cleaning, liquid	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Compound, cleaning, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Compound, cleaning, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Compound, cleaning, liquid (*containing phosphoric acid, acetic acid, sodium hydroxide or potassium hydroxide*)	Corrosive material	NA1760	Corrosive	173.244	173.249a	1 quart	1 quart	1,2	1,2	
	Compound, cleaning, liquid (containing hydrochloric (muriatic) acid)	Corrosive material	NA1789	Corrosive	173.244	173.263	1 quart	1 gallon	1	1	
	Compound, cleaning, liquid (containing hydrofluoric acid)	Corrosive material	NA1790	Corrosive	172.244	173.256	1 quart	1 gallon	1	4	
	Compound, enamel	Flammable liquid	NA1263	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid	Combustible liquid	NA1142	None	173.118a				1,2	1,2	
	Compound, lacquer, paint, *or* varnish removing, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Compound, polishing, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.129	1 quart	55 gallons	1,2	1	
	Compound, rust preventing *or* Compound, rust removing	Corrosive material	NA1760	Corrosive	173.144	173.245	1 quart	1 gallon	1,2	1,2	
	Compound, tree *or* weed killing, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Compound, tree *or* weed killing, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Compound, tree *or* weed killing, liquid	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Compound, tree *or* weed killing, liquid	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Compound, tree *or* weed killing, solid	Oxidizer	NA1479	Oxidizer	173.153	173.154 173.229	25 pounds	100 pounds			
	Compound, vulcanizing, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Compound, vulcanizing, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	172.119	1 quart	10 gallons	1,2	1	
	Compound, water treatment, liquid. *See* Water treatment, liquid										
+	Compressed gas, n.o.s.	Flammable gas	UN1954	Flammable gas	173.306	173.302 173.304 173.305	Forbidden	300 pounds	1	4	
	Compressed gas, n.o.s.	Nonflammable gas	UN1956	Nonflammable gas	173.306 173.307	173.302 173.304 173.305	150 pounds	300 pounds	1,2	1,2	
	Consumer commodity	ORM-D		None	None	173.510 173.1200	65 pounds gross	65 pounds gross			Not subject to requirements of Part 176
	Container, reused or empty, must be classed for the hazardous material previously contained. See 173.28, 173.29										
E	Copper acetoarsenite, solid (*RQ-100/45.4*)	Poison B	UN1585	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	
	Copper acetylide	Forbidden									
	Copper amine azide	Forbidden									
	Copper arsenite, solid	Poison B	UN1586	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Copper based pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2776	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Copper based pesticide (*compounds and preparations*), liquid	Poison B	UN2775	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Copper based pesticide (*compounds and preparations*), solid	Poison B	UN2775	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
EA	Copper chloride (*RQ-10/4.54*)	ORM-B	UN2802	None	173.505	173.800	25 pounds	100 pounds	1,2	1,2	
	Copper cyanide	Poison B	UN1587	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Copper tetramine nitrate	Forbidden									
W	Copra	ORM-C	UN1363	None	173.505	173.980			1,2	1,2	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Copra pellets. See Coconut meal pellets										
	Cordeau detonant fuse	Class C explosive		Explosive C	None	173.104	50 pounds	500 pounds	1,2	1,2	
	Corrosive liquid, n.o.s.	Corrosive material	UN1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	For material that meets only the corrosion to skin criteria of 49 CFR 173.240(a)(1), 'under deck' stowage is also authorized if the description includes the additional entry specified by 172.203(g).
	Corrosive liquid, poisonous, n.o.s.	Corrosive material	UN2922	Corrosive and Poison	173.244	173.245	1 quart	1 quart	1	4	
	Corrosive solid, n.o.s.	Corrosive material	UN1759	Corrosive	173.244	173.245b	25 pounds	100 pounds	1	4	For material that meets only the corrosion to skin criteria of 49 CFR 173.240(a)(1), 'under deck' stowage is also authorized if the description includes the additional entry specified by 172.203(g).
	Cosmetics, liquid, n.o.s.	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Cosmetics, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Cosmetics, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cosmetics, n.o.s.	Flammable solid	NA1325	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Cosmetics, n.o.s.	Oxidizer	NA1479	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Cosmetics, solid, n.o.s.	Corrosive material	NA1759	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
W	Cotton	ORM-C		None	173.505	173.965			1,2	1,2	Segregation same as for flammable solids. See 176.900 to 176.904
W	Cotton batting	ORM-C		None	173.505	173.970			1,2	1,2	Keep dry. Stow away from vegetable or animal oils. See 176.900 to 176.904
W	Cotton batting dross. *See* Cotton batting										
	Cotton, burnt. See Burnt cotton										
W	Cotton seed hull fiber *or* shavings, palp, *or* cut linters. See Cotton batting										
	Cotton sweepings. *See* Cotton waste										
W	Cotton wadding. *See* Cotton batting										
W	Cotton waste	ORM-C		None	173.505	173.975			1,2	1,2	Keep dry. Stow away from vegetable or animal oils. See 176.900 to 176.904
	Cotton waste, oily (*with more than 5% of animal or vegetable oil*)	Flammable solid	UN1364	Flammable solid			Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Coumaphos (*RQ-10/4.54*)	Poison B	NA2783	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Creosote, coal tar	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Creosote oil. See Creosote coal tar										
E	Cresol (*RQ-1000/454*)	Corrosive material	NA2076	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Crotonaldehyde (*RQ-100/45.4*)	Flammable liquid	UN1143	Flammable liquid and Poison	173.118	173.119	1 quart	1 gallon	1,2	1	
	Crotonic acid	Corrosive material	UN2823	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Crotonylene	Flammable liquid	UN1144	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Crude nitrogen fertilizer solution (*more than 25.3 p.s.i.g.*)	Nonflammable gas	NA1043	Nonflammable gas	173.306	173.304 173.314	Forbidden	500 pounds	1,3	1,3	
	Crude oil, petroleum	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Crude oil, petroleum	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cumene hydroperoxide	Organic peroxide	UN2116	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Cumene hydroperoxide, *technically pure. See* Cumene hydroperoxide.		UN2116								
E	Cupric acetate (*RQ-100/45.4*)	ORM-E	NA9106	None	None	173.510	No limit	No limit	1,2	1,2	
	Cupric cyanide. See Copper cyanide										
E	Cupric nitrate (*RQ-100/45.4*)	Oxidizer	NA1479	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
E	Cupric oxalate (*RQ-100/45.4*)	ORM-E	NA2440	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cupric sulfate (*RQ-10/4.54*)	ORM-E	NA9108	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cupric sulfate, ammoniated (*RQ-100/45.4*)	ORM-E	NA9110	None	None	173.510	No limit	No limit	1,2	1,2	
E	Cupric tartrate (*RQ-100/45.4*)	ORM-E	NA9111	None	None	173.510	No limit	No limit	1,2	1,2	
	Cupriethylene-diamine solution	Corrosive material	UN1761	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Cyanide *or* cyanide mixture, dry	Poison B	UN1588	Poison	173.364	173.370	25 pounds	200 pounds	1,2	1,2	Keep dry. Stow away from acids
	Cyanide solution, n.o.s.	Poison B	NA1588	Poison	173.345	173.252	1 quart	55 gallons	1,2	1,2	Stow away from acids

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Cyanogen bromide	Poison B	UN1889	Poison	None	173.379	Forbidden	25 pounds	1	5	Shade from radiant heat. Segregation same as for corrosive materials
E	Cyanogen chloride *containing less than 0.9% water (RQ-10/4.54)*	Poison A	UN1589	Nonflammable gas and Poison gas	None	173.328	Forbidden	Forbidden	1	5	Shade from radiant heat
	Cyanogen gas	Poison A	UN1026	Flammable gas and Poison gas	None	173.328	Forbidden	Forbidden	1	5	
	Cyanuric triazide	Forbidden									
E	Cyclohexane *(RQ-1000/454)*	Flammable liquid	UN1145	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Cyclohexanone peroxide, *50 to 85% peroxide*	Organic peroxide	UN2119	Organic peroxide	173.157	173.158	Forbidden	25 pounds	1	1	
	Cyclohexanone peroxide, *as a paste with not more than 9% by weight active oxygen. See* Cyclohexanone peroxide, *50 to 85% peroxide.*		UN2896								
	Cyclohexanone peroxide, *in solution with not more than 9% by weight active oxygen. See* Cyclohexanone peroxide, *50 to 85% peroxide*		UN2118								
	Cyclohexanone peroxide, *not over 50% peroxide*	Organic peroxide	UN2896	Organic peroxide	173.153	173.154	2 pounds	25 pounds	1,2	1,2	
	Cyclohexanone peroxide and di-(1-hydroxy cyclohexyl) peroxide mixture. *See appropriate cyclohexanone peroxide entry*										
	Cyclohexenyl trichlorosilane	Corrosive material	UN1762	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Cyclohexylamine	Flammable liquid	UN2357	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Cyclohexyl trichlorosilane	Corrosive material	UN1763	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Cyclopentane	Flammable liquid	UN1146	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Cyclopentane, methyl	Flammable liquid	UN2298	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Cyclopropane	Flammable gas	UN1027	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	1	
	Cyclotetramethylene tetranitramine (dry) (HMX)	Forbidden									
	Cyclotetramethylene tetranitramine, wet with not less than 10% water. See High explosive.										
	Cyclotrimethylene trinitramine, desensitized. See High explosive										
	Cyclotrimethylene trinitramine, wet with not less than 10% water. See High explosive										
	Cylinder, empty, including ton tanks, must be classed for the hazardous material previously contained in cylinder. See 173.29										
EA	2,4-D. *See* 2,4-Dichlorophenoxyacetic acid										
EA	DDT *or* Dichlorodiphenyltrichloroethane *(RQ-1/.454)*	ORM-A	NA2761	None	173.505	173.510	No limit	No limit	1,2	1,2	
	Dead oil. See Creosote, coal tar										
	Decaborane	Flammable solid	UN1868	Flammable solid and Poison	173.118a	None	No limit	No limit	1,2	1,2	
	Decahydronaphthalene	Combustible liquid	UN1147	None	173.118a	None	No limit	No limit	1,2	1,2	
	Decalin. See Decahydronaphthalene										
	Decanoyl peroxide, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2120								
	Delay electric igniter	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Denatured alcohol	Flammable liquid	NA1986	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
	Depth bomb. See Explosive bomb										
EA	2,4-D ester. *See* 2,4-Dichlorophenoxyacetic acid ester										
	Detonating fuze, Class A, *with or without radioactive components*	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Detonating fuze, Class C explosive	Class C explosive		Explosive C	None	173.113	50 pounds	150 pounds	1,3	1,3	
	Detonating primers, Class A explosives. *See 173.53*	Class A explosive		Explosive A	None	173.68	Forbidden	Forbidden	6	5	Do not stow detonating primers, Class A explosives with any high explosives. Do not handle at the same time high explosives are being loaded.

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Detonating primers, Class C explosives. *See 173.100*	Class C explosive		Explosive C	None	173.63	173.1003(d)	150 pounds	1,2	1,2	The maximum net quantity in one package for this material shipped aboard passenger vessel is limited to 50 pounds. Must not be stowed in portable magazine or metal locker. Do not stow detonating primers, Class C explosives with high explosives. Do not handle at the same time high explosives are being loaded.
	Detonators, Class A explosives. *See 173.53*	Class A explosive		Explosive A	None	173.66	Forbidden	Forbidden	6	–	Do not stow detonators, Class A with any high explosives. Do not handle at the same time high explosives are being loaded.
	Detonators, Class C explosives. *See 173.100*	Class C explosive		Explosive C	None	173.66	173.1003(d)	150 pounds	1,2	1,2	The maximum net quantity in one package for this material shipped aboard passenger vessel is limited to 50 pounds. Must be stowed in portable magazine or metal locker. Do not stow detonators, Class C explosives with high explosives. Do not handle at the same time high explosives are being loaded.
	Detonators, commercial. See Detonators, Class A *or* Class C explosives										
	Di-(1-hydroxycyclohexyl) peroxide, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2148								
	Di-(1-hydroxytetrazole) (dry)	Forbidden									
	Di-(1-naphthoyl)peroxide	Forbidden									
	Di-(2-ethylhexyl) peroxydicarbonate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2122								
	Di-(2-ethylhexyl) peroxydicarbonate, *not more than 67% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2123								
	Di-(2-ethylhexyl) phosphoric acid	Corrosive material	NA1902	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Di-(2-methylbenzoyl)peroxide, *not more than 85% with water. See* Organic peroxide, solid, n.o.s.		UN2593								
	1,3-Di-(2-tert-butylperoxyisopropyl) benzene, *technically pure or more than 40% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2112								
	1,3-Di-(2-tert-butylperoxyisopropyl) benzene and 1,4-Di-(2-tert-butylperoxyisopropyl) benzene mixture, *technically pure or more than 40% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2112								
	1,4-Di-(2-tert-butylperoxyisopropyl) benzene, *technically pure or more than 40% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2112								
	Di-(3,5,5-trimethyl-1,2-dioxolanyl-3)peroxide, *not more than 50% as a paste, with phlegmatizer. See* Organic peroxide, solid, n.o.s.		UN2597								
	2,2-Di-(4,4-di-tert-butylperoxycyclohexyl)propane, *not more than 42% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2168								
	2,2-Di-(4,4-di-tert-butylperoxycyclohexyl) propane, more than 42% with inert solid	Forbidden									
	Di-(4-tert-butylcyclohexyl)peroxydicarbonate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2154								
	Di-(4-tert-butylcyclohexyl)peroxydicarbonate, *not more than 42%, stable dispersion, in water. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2894								
	Diacetone alcohol	Flammable liquid	UN1148	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Diacetone alcohol peroxide, *not more than 57% in solution with not more than 9% hydrogen peroxide, not less than 26% diacetone alcohol and not less than 9% water; total active oxygen content not more than 9%. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2163								
	Diacetone alcohol peroxides, more than 57% in solution with more than 9% hydrogen peroxide, less than 26% diacetone alcohol and less than 9% water; total active oxygen content more than 9% by weight	Forbidden									
	Diacetyl	Flammable liquid	UN2346	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	p-Diazidobenzene	Forbidden									
	1,2-Diazidoethane	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
EA	Diazinon (*RQ-1/.454*)	ORM-A	NA2783	None	173.505	173.510	No limit	No limit	1,2	1,2	
	1,1'-Diazoaminonaphthalene	Forbidden									
	Diazoaminotetrazole (dry)	Forbidden									
	Diazodinitrophenol. *See* Initiating explosive										
	Diazodinitrophenol (dry)	Forbidden									
	Diazodiphenylmethane	Forbidden									
	Diazonium nitrates (dry)	Forbidden									
	Diazonium perchlorates (dry)	Forbidden									
	1,3-Diazopropane	Forbidden									
	Dibenzyl peroxydicarbonate, *not more than 87% with water. See* Organic peroxide, solid, n.o.s.		UN2149								
	Dibenzyl peroxydicarbonate, more than 87% with water	Forbidden									
	Di-(beta-nitroxyethyl)ammonium nitrate	Forbidden									
+	Diborane *or* diborane mixtures	Flammable gas	UN1911	Flammable gas and Poison	None	173.302	Forbidden	Forbidden	1	5	Separate from Chlorine and materials bearing the oxidizer label.
	Dibromoacetylene	Forbidden									
A	Dibromodifluoromethane	ORM-A	UN1941	None	173.505	173.605	10 gallons	55 gallons			
EW	1,2-Dibromoethane. *See* Ethylene dibromide										
E	Dicamba (*RQ-1000/454*)	ORM-E	NA2769	None	None	173.510	No limit	No limit	1,2	1,2	
	Dicetyl peroxydicarbonate, *not more than 42%, stable dispersion, in water. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2895								
	Dicetyl peroxydicarbonate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2164								
E	Dichlobenil (*RQ-1000/454*)	ORM-E	NA2769	None	None	173.510	No limit	No limit	1,2	1,2	
E	Dichlone (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	1,2	1,2	
	N,N'-Dichlorazodicarbonamidine (salts of), (dry)	Forbidden									
E	*1,1-Dichloro-2,2-bis(parachlorophenyl) ethane. See* TDE										
	Dichloroacetic acid	Corrosive material	UN1764	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
	Dichloroacetyl chloride	Corrosive material	UN1765	Corrosive	173.244	173.247	1 quart	1 gallon	1	4	Keep dry
	Dichloroacetylene	Forbidden									
EA	Dichlorobenzene, ortho, liquid (*RQ-100/45.4*)	ORM-A	UN1591	None	173.505	173.510	No limit	No limit	1,2	1,2	
EA	Dichlorobenzene, para, solid (*RQ-100/45.4*)	ORM-A	UN1592	None	173.505	173.510	No limit	No limit	1,2	1,2	
	2,4-Dichlorobenzoyl peroxide, *not more than 75% with water. See* Organic peroxide, solid, n.o.s.		UN2137								
	2,4-Dichlorobenzoyl peroxide, *not more than 52% as a paste. See* Organic peroxide, solid, n.o.s.		UN2138								
	2,4-Dichlorobenzoyl peroxide, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2139								
	2,4-Dichlorobenzoyl peroxide, more than 75% with water	Forbidden									
	Dichlorobutene	Flammable liquid	NA2924	Flammable liquid and Corrosive	173.118	173.119	1 quart	1 quart	1,2	1	
	Dichlorobutene	Corrosive material	NA2924	Corrosive	173.244	173.245 173.245a	1 quart	10 gallons	1	4	
A	Dichlorodifluoroethylene	ORM-A	NA9018	None	173.505	173.605	10 gallons	55 gallons			
	Dichlorodifluoromethane	Nonflammable gas	UN1028	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane and difluoroethane mixture (*constant boiling mixture*)	Nonflammable gas	UN2602	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-dichlorotetrafluoroethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-monochlorodifluoromethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-trichloromonofluoromethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-trichloromonofluoromethane-monochlorodifluoromethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Dichlorodifluoromethane-trichlorotrifluoroethane mixture	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+ / E A / W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
EA	Dichlorodiphenyltrichloroethane. *See* DDT										
	Dichloroethylene	Flammable liquid	UN1150	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dichloroisopropyl ether	Corrosive material	UN2490	Corrosive	173.244	173.254	1 quart	10 gallons	1,2	1,2	
A	Dichloromethane *or* Methylene chloride	ORM-A	UN1593	None	173.505	173.505	10 gallons	55 gallons			
	Dichloropentane	Flammable liquid	UN1152	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
EA	2,4-Dichlorophenoxyacetic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	173.505	173.510	50 pounds	No limit	1,2	1,2	
E	2,4-Dichlorophenoxyacetic acid ester (*RQ-100/45.4*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
	Dichlorophenyltrichlorosilane	Corrosive material	UN1766	Corrosive	None	173.250	Forbidden	10 gallons	1	1	Keep dry
E	Dichloropropane. *See* Propylene dichloride										
E	Dichloropropene (*RQ-5000/2270*)	Flammable liquid	UN2047	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dichloropropene and propylene dichloride mixture	Flammable liquid	NA2047	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	2,2-Dichloropropionic acid (*RQ-5000/2270*)	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Dichlorvos (*RQ-10/4.54*)	Poison B	NA2763	Poison	173.345	173.346	Forbidden	1 quart	1,2	1,2	
	Dicumyl peroxide *50% solution*	Organic peroxide	NA2121	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Dicumyl peroxide, *technically pure or* Dicumyl peroxide, *with inert solid. See* Dicumyl peroxide, dry.		UN2121								
	Dicumyl peroxide, dry	Organic peroxide	UN2121	Organic peroxide	173.153	173.154	2 pounds	25 pounds	1,2	1,2	
	Dicyclohexyl peroxydicarbonate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2152								
	Dicyclohexyl peroxydicarbonate, *not more than 91% with water. See* Organic peroxide, solid, n.o.s.		UN2153								
EA	Dieldrin (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit	1,2	1,2	
	Diesel Fuel. *See* Fuel oil										
	Diethanol nitrosamine dinitrate (dry)	Forbidden									
E	Diethylamine (*RQ-1000/454*)	Flammable liquid	UN1154	Flammable liquid	173.118	173.119	Forbidden	5 pints	1,3	4	
	Diethyl cellosolve. *See* Ethylene glycol diethyl ether										
	Diethyl dichlorosilane	Flammable liquid	UN1767	Flammable liquid	None	173.155	Forbidden	10 gallons	1	1	Keep dry. Segregation same as for corrosives
	Diethylene glycol dinitrate. See 173.51	Forbidden									
	Diethylgold bromide	Forbidden									
	Diethyl ketone	Flammable liquid	UN1156	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Diethyl peroxydicarbonate, *not more than 27% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2175								
	Diethyl peroxydicarbonate, more than 27% in solution	Forbidden									
	1,1-Difluoro-1-chloroethane. *See* Difluoromonochloroethane										
+	Difluoroethane	Flammable gas	UN1030	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	500 pounds	1,2	1	
+	Difluoromonochloroethane	Flammable gas	UN2517	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	500 pounds	1,2	1	
	Difluorophosphoric acid, anhydrous	Corrosive material	UN1768	Corrosive	None	173.275	Forbidden	1 gallon	1,2	1,2	
	2,2-Dihydroperoxy propane, *not more than 25% with inert organic solid. See* Organic peroxide, solid, n.o.s.		UN2178								
	Dihydropyran	Flammable liquid	UN2376	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	4	
	1,8-Dihydroxy-2,4,5,7-tetranitroanthraquinone (chrysamminic acid)	Forbidden									
	Diodoacetylene	Forbidden									
	Diisobutyl ketone	Combustible liquid	UN1157	None	173.118a	None	No limit	No limit	1,2	1,2	
	Diisobutyryl peroxide, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2182								
	Diisooctyl acid phosphate	Corrosive material	UN1902	Corrosive	173.144	173.256	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
	Diisopropylamine	Flammable liquid	UN1158	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Diisopropylbenzene hydroperoxide solution, *not over 72% peroxide*	Organic peroxide	UN2171	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Diisopropylbenzene hydroperoxide, *not more than 72% in solution. See* Diisopropylbenzene hydroperoxide solution, *not more than 72% peroxide.*		UN2171								
	Diisopropylbenzene hydroperoxide, more than 72% in solution	Forbidden									
	Diisopropyl ether	Flammable liquid	UN1159	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Diisotridecyl peroxydicarbonate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2889								
	2,5-Dimethyl-2,5-di-(2-ethylhexanoylperoxy)hexane, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2157								
	2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2172								
	2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane, *not more than 82% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2173								
	2,5-Dimethyl-2,5-dihydroperoxy hexane, *not more than 82% with water. See* Dimethylhexane dihydroperoxide, *with 18% or more water.*		UN2174								
	2,5-Dimethyl-2,5-dihydroperoxy hexane, more than 82% with water	Forbidden									
	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2155								
	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane, *not more than 52% with inert solid. See* Organic peroxide, solid n.o.s.		UN2156								
	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2158								
	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3, *not more than 52% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2159								
+E	Dimethylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1032	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	
E	Dimethylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	UN1160	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	2,3-Dimethylbutane	Flammable liquid	UN2457	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Dimethyl carbonate	Flammable liquid	UN1161	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dimethyl chlorothiophosphate	Corrosive material	NA2922	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	1,4-Dimethylcyclohexane	Flammable liquid	UN2263	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dimethyldichlorosilane	Flammable liquid	UN1162	Flammable liquid	None	173.135	Forbidden	5 pints	1,2	1	
+	Dimethyl ether	Flammable gas	UN1033	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Dimethylhexane dihydroperoxide (dry)	Forbidden									
	Dimethylhexane dihydroperoxide, (with 18% or more water)	Organic peroxide	UN2174	Organic peroxide	None	173.157	Forbidden	25 pounds	1	1	
	Dimethylhydrazine, unsymmetrical (*UDMH*)	Flammable liquid	UN1163	Flammable liquid and Poison	None	173.145	Forbidden	5 pints	1,2	1	Keep dry. Separate from corrosive and oxidizing materials, and organic peroxides.
	Dimethyl phosphorochloridothioate. *See* Dimethyl clorothiophosphate.										
	Dimethyl sulfate	Corrosive material	UN1595	Corrosive	None	173.255	Forbidden	1 quart	1	5	Keep cool
	Dimethyl sulfide	Flammable liquid	UN1164	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
	Dimyristyl peroxydicarbonate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2595								
	Dimyristyl peroxydicarbonate, *not more than 22%, stable dispersion, in water. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2892								
	1,4-Dinitro-1,1,4,4-tetramethylolbutanetetranitrate (dry)	Forbidden									
	2,4-Dinitro-1,3,5-trimethylbenzene	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5)		(6)		(7)		
					Packaging		Maximum net quantity in one package		Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	1,3-Dinitro-4,5-dinitrosobenzene	Forbidden									
	1,3-Dinitro-5,5-dimethyl hydantoin	Forbidden									
	Dinitro-7,8-dimethylglycoluril (dry)	Forbidden									
E	Dinitrobenzene, solid, *or* Dinitrobenzol, solid (*RQ-1000/454*)	Poison B	UN1597	Poison	173.204	173.571	50 pounds	200 pounds	1,2	1,2	
E	Dinitrobenzene solution (*RQ-1000/454*)	Poison B	UN1597	Poison	173.245	173.246	1 quart	55 gallons	1,2	1,2	
	Dinitrochlorobenzene	Poison B	UN1577	Poison	173.204	173.203	50 pounds	200 pounds	1,2	1,2	
A	Dinitrocyclohexylphenol	ORM-A	NA9029	None	173.505	173.510	No limit	No limit			
	1,2-Dinitroethane	Forbidden									
	1,1-Dinitroethane (dry)	Forbidden									
	Dinitroglycoluril	Forbidden									
	Dinitromethane	Forbidden									
E	Dinitrophenol solution (*RQ-1000/454*)	Poison B	UN1599	Poison	173.245	173.202a	1 quart	55 gallons	1,2	1,2	Stow away from heavy metals and their compounds. If flash point is 141 deg F or less segregation same as for flammable liquids
	Dinitropropylene glycol	Forbidden									
	2,4-Dinitroresorcinol (heavy metal salts of), (dry)	Forbidden									
	4,6-Dinitroresorcinol (heavy metal salts of), (dry)	Forbidden									
	3,5-Dinitrosalicylic acid (lead salt), (dry)	Forbidden									
	Dinitrosobenzylamidine and salts of (dry)	Forbidden									
	2,2-Dinitrostilbene	Forbidden									
E	Dinitrotoluene (*RQ-1000/454*)	ORM-E	UN1600	None	None	173.510	No limit	No limit	1,2	1,2	
	a,a'-Di-(nitroxy)methylether	Forbidden									
	1,9-Dinitroxy pentamethylene-2,4,6,8-tetramine (dry)	Forbidden									
	Di-n-propyl peroxydicarbonate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2176								
	Dioxane	Flammable liquid	UN1165	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dioxolane	Flammable liquid	UN1166	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Diphenylaminechloroarsine (*DM*)	Irritating material	UN1698	Irritant	None	173.202	Forbidden	75 pounds	1	5	
	Diphenyl dichlorosilane	Corrosive material	UN1769	Corrosive	None	173.250	Forbidden	10 gallons	1	1	
	Diphenyl methyl bromide, solid	Corrosive material	UN1770	Corrosive	173.244	173.245b	25 pounds	100 pounds	1	4	
	Diphenyl methyl bromide solution	Corrosive material	UN1770	Corrosive	173.244	173.247	1 quart	1 gallon	1,2	1,2	
	Diphosgene. See Phosgene										
E	Diquat (*RQ-1000/454*)	ORM-E	NA2781	None	None	173.510	No limit	No limit	1,2	1,2	
	Di-sec-butyl peroxydicarbonate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2150								
	Di-sec-butyl peroxydicarbonate, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2151								
	Disinfectant, liquid	Corrosive material	UN1903	Corrosive	173.244	173.245	1 quart	10 gallons	1	4	
	Disinfectant, liquid	Poison B	UN1601	Poison	173.245	173.246	1 quart	55 gallons	1,2	1	
	Disinfectant, liquid, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Disinfectant, solid	Poison B	UN1601	Poison	173.204	173.203	50 pounds	200 pounds	1,2	1	
	Dispersant gas *or* Refrigerant gas. *See 173.314 NOTE 13 and 173.315 NOTE 9*										
	Distearyl peroxydicarbonate, *not more than 85% with stearyl alcohol. See* Organic peroxide, solid, n.o.s.		UN2592								
E	Disulfoton (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.204	173.203	Forbidden	1 quart	1,2	5	
	Di-tert-Butyl peroxide, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2102								
	1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane, *technically pure. See* Organic peroxide, liquid *or* solution n.o.s.		UN2145								
	1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane, *not more than 57% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2146								
	1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane, *not more than 58% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2147								
	2,2-Di-(tert-butylperoxy)butane, *not more than 55% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2111								
	2,2-Di-(tert-butylperoxy) butane, more than 55% in solution	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	1,1-Di-(tert-butylperoxy)cyclohexane, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2179								
	1,1-Di-(tert-butylperoxy)cyclohexane, *not more than 77% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2180								
	1,2-Di-(tert-butylperoxy)cyclohexane, *not more than 77% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2181								
	1,1-Di-(tert-butylperoxy)cyclohexane, *not more than 40% with inert inorganic solid, with not less than 13% phlegmatizer. See* Organic peroxide, solid, n.o.s.		UN2885								
	1,1-Di-(tert-butylperoxy)cyclohexane, *not more than 50% with phlegmatizer. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2897								
	Di-(tert-butylperoxy) phthalate, more than 55% in solution	Forbidden									
	Di-(tert-butylperoxy)phthalate, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2106								
	Di-(tert-butylperoxy)phthalate, *not more than 55% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2107								
	Di-(tert-butylperoxy)phthalate, *not more than 55% as a paste. See* Organic peroxide, solid, n.o.s.		UN2108								
	2,2-Di-(tert-butylperoxy)propane, *not more than 50% with phlegmatizer. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2883								
	2,2-Di-(tert-butylperoxy)propane, *not more than 40% with inert inorganic solid with not less than 13% phlegmatizer. See* Organic peroxide, solid, n.o.s.		UN2884								
	Dithiocarbamate pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2772	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Dithiocarbamate pesticide (*compounds and preparations*), liquid	Poison B	UN2771	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Dithiocarbamate pesticide (*compounds and preparations*), solid	Poison B	UN2771	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Diuron (*RQ-100/45.4*)	ORM-E	NA2767	None	None	173.510	No limit	No limit	1,2	1,2	
	Divinyl ether	Flammable liquid	UN1167	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
E	Dodecylbenzenesulfonic acid (*RQ-1000/454*)	Corrosive material	NA2584	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Dodecyl trichlorosilane	Corrosive material	UN1771	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Dressing, leather	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Dressing, leather	Flammable liquid	NA1142	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Drier. See Paint drier, liquid										
	Drill cartridge. See 173.55										
	Drugs, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Drugs, n.o.s.	Flammable solid	NA1325	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Drugs, n.o.s.	Oxidizer	NA1479	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Drugs, n.o.s,	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Drugs, n.o.s. liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Drugs, n.o.s. liquid	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,3	1	
	Drugs, n.o.s. solid	Corrosive material	NA1759	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Drugs, n.o.s. solid	Poison B	NA2811	Poison	173.364	173.365	50 pounds	200 pounds	1,3	1,3	
	Drums, empty, must be classed for the hazardous material previously contained in drum. See 173.29										
	Dry ice. *See* Carbon dioxide, solid										
	Dye intermediate, liquid	Corrosive material	UN2801	Corrosive	173.244	173.249a	1 quart	10 gallons	1,2	1,2	Stow away from foodstuffs and living quarters
	Dynamite. See High explosive										
E	EDTA. *See* Ethylenediaminetetraacetic acid										
	Electric blasting caps. See Detonators, Class A *or* Class C explosives										
	Electric squib	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Electric storage battery, wet. *See* Battery, electric storage, wet										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Electrolyte (acid) *or* alkaline battery fluid, packed with dry-storage battery	Corrosive material	NA2797	Corrosive	None	173.258	Forbidden	5 pints	1,2	1,2	
	Electrolyte (acid) *or* alkaline battery fluid, packed with battery charger, radio current supply device, *or* electronic equipment and actuating device.	Corrosive material	NA2797	Corrosive	None	173.259	Forbidden	5 pints	1,2	1,2	
	Electrolyte (acid) battery fluid (*not over 47% acid*)	Corrosive material	UN2796	Corrosive	173.244	173.257	1 quart	5 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Empty cartridge bag with black powder igniter	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Enamel. *See* Paint, Enamel, Lacquer, *etc.*										
E	Endosulfan (*RQ-1/0.454*)	Poison B	NA2761	Poison	173.364	173.365	1 pound	10 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
E	Endrin (*RQ-1/0.454*)	Poison B	NA2761	Poison	173.364	173.365	1 pounds	10 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Engine, internal combustion				173.120						
	Engine starting fluid	Flammable gas	UN1960	Flammable gas	None	173.304	Forbidden	60 pounds	1,2	5	
E	Epichlorohydrin (*RQ-1000/454*)	Flammable liquid	UN2023	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Eradicator, paint *or* grease, liquid	Flammable liquid	UN1850	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Escape *or* Evacuation slide, inflatable. *See* Life rafts, inflatable										
E	Etching acid, liquid, n.o.s. (*RQ-1000/454*)	Corrosive material	NA1760	Corrosive	None	173.299	Forbidden	10 pounds	1	5	
+	Ethane	Flammable gas	UN1035	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	4	
	Ethanol amine dinitrate	Forbidden									
E	Ethion (*RQ-10/4.54*)	Poison B	NA2783	Poison	173.364	173.365	Forbidden	1 quart	1,2	5	
	Ethyl-3,3-di-(tert-butylperoxy)butyrate, *technically pure.* *See* Organic peroxide, liquid *or* solution, n.o.s.		UN2184								
	Ethyl-3,3-di-(tert-butylperoxy)butyrate, *not more than 77% in solution.* *See* Organic peroxide, liquid *or* solution, n.o.s.		UN2185								
	Ethyl-3,3-di-(tert-butylperoxy)butyrate, *not more than 50% with inert inorganic solid.* *See* Organic peroxide, solid, n.o.s.		UN2598								
	Ethyl acetate	Flammable liquid	UN1173	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl acrylate, inhibited	Flammable liquid	UN1917	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl alcohol	Flammable liquid	UN1170	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1	
E	Ethyl aldehyde. *See* Acetaldehyde										
E	Ethyl benzene (*RQ-1000/454*)	Flammable liquid	UN1175	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl borate	Flammable liquid	UN1176	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	Keep dry
	Ethyl butyl acetate	Combustible liquid	UN1177	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl butyl ether	Flammable liquid	UN1179	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl butyraldehyde	Flammable liquid	UN1178	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl butyrate	Flammable liquid	UN1180	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Ethyl chloride	Flammable liquid	UN1037	Flammable liquid	None	173.123	Forbidden	See 173.123	1,2	1	Segregation same as for flammable gases
	Ethyl chloroacetate	Combustible liquid	UN1181	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl chloroformate (*chlorocarbonate*)	Flammable liquid	UN1182	Flammable liquid and Poison	None	173.289	Forbidden	5 pints	1,2	1	
	Ethyl chlorothioformate	Corrosive material	UN2826	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1,2	1	
	Ethyl crotonate	Flammable liquid	UN1862	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl dichlorosilane	Flammable liquid	UN1183	Flammable liquid	None	173.135	Forbidden	5 pints	1,2	1	
+	Ethylene	Flammable gas	UN1962	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	4	
	Ethylene chlorohydrin	Poison B	UN1135	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	Segregation same as for flammable liquids
E	Ethylenediamine (*RQ-1000/454*)	Corrosive material	UN1604	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Ethylene diamine diperchlorate	Forbidden									
E	Ethylenediaminetetraacetic acid (*RQ-5000/2270*)	ORM-E	NA9117	None	None	173.510	No limit	No limit	1,2	1,2	
EAW	Ethylene dibromide (*RQ-1000/454*)	ORM-A	UN1605	None	173.505	173.620	1 quart	55 gallons	1,2	1,2	Stow away from living quarters
E	Ethylene dichloride (*RQ-5000/2270*)	Flammable liquid	UN1184	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Ethylene glycol diethyl ether (*diethyl 'Cellosolve'*)	Combustible liquid	UN1153	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol dinitrate	Forbidden									
	Ethylene glycol monoethyl ether (*'Cellosolve'*)	Combustible liquid	UN1171	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monoethyl ether acetate (*'Cellosolve acetate'*)	Combustible liquid	UN1172	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monomethyl ether (*methyl 'Cellosolve'*)	Combustible liquid	UN1188	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene glycol monomethyl ether acetate (*methyl 'Cellosolve acetate'*)	Combustible liquid	UN1189	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethylene-imine, inhibited	Flammable liquid	UN1185	Flammable liquid and Poison	None	173.139	Forbidden	5 pints	1,2	1	
	Ethylene oxide	Flammable liquid	UN1040	Flammable liquid	None	173.124	Forbidden	See 173.124	1,2	1	Segregation same as for flammable gases
	Ethyl ether	Flammable liquid	UN1155	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Ethyl formate	Flammable liquid	UN1190	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Ethylhexaldehyde	Combustible liquid	UN1191	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl hydroperoxide (explodes above 100 deg C)	Forbidden									
	Ethyl lactate	Combustible liquid	UN1192	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl mercaptan	Flammable liquid	UN2363	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	1	
	Ethyl methyl ether	Flammable liquid	UN1039	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	1	Segregation same as for flammable gases
	Ethyl methyl ketone	Flammable liquid	UN1193	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl nitrate (*nitric ether*)	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	Forbidden	Forbidden	1,2	1	
	Ethyl nitrite (nitrous ether)	Flammable liquid	UN1194	Flammable liquid	None	173.119	Forbidden	Forbidden	1,3	5	
	Ethyl perchlorate	Forbidden									
	Ethyl phenyl dichlorosilane	Corrosive material	UN2435	Corrosive	None	173.280	Forbidden	10 gallons	1	5	
	Ethyl phosphonothioic dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Ethyl phosphonous dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Ethyl phosphorodichloridate	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Ethyl propionate	Flammable liquid	UN1195	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Ethyl silicate (*tetraethyl orthosilicate*)	Combustible liquid	UN1292	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ethyl trichlorosilane	Flammable liquid	UN1196	Flammable liquid	None	173.135	Forbidden	5 pints	1,2	1	
	Etiologic agent, n.o.s.	Etiologic agent	NA2814	Etiologic agent	173.386	173.387	See 173.386	4 liters			Not permitted except under specific conditions approved by the Department
W	Excelsior (shredded wood) *when dry, clear, and free from oil*	ORM-C		None	173.505	173.980			1,3	1,3	Stow away from organic, corrosive, or oxidizing materials
	Explosive auto alarm	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Explosive bomb	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with these items
	Explosive cable cutter	Class C explosive		Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Explosive, forbidden. See Sec. 173.51	Forbidden									
	Explosive mine	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with these items
	Explosive, new approval, and evaluation. See 173.86										
	Explosive power device, Class B	Class B explosive		Explosive B	None	173.94	Forbidden	150 pounds	1,2	5	
	Explosive power device, Class C	Class C explosive		Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Explosive projectile	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with this material
	Explosive release device	Class C explosive		Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Explosive rivet	Class C explosive		Explosive C	None	173.100	50 pounds	150 pounds	1,2	1,2	
	Explosive, sample for laboratory examination				173.86		Forbidden	See 173.86			

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not exempted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Explosive torpedo	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	Magazine stowage authorized. No other cargo may be stowed in the same hold with this material
	Extract, liquid, flavoring	Flammable liquid	UN1197	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Fabric with animal or vegetable oil. See Fibers *or* fabric, containing not more than 5% animal *or* vegetable fat										
AW	Feed, wet, mixed	ORM-C		None	173.505	173.990	Forbidden	Forbidden	3	3	Stow in cool, dry, well ventilated compartment. Do not stow bags over ten tiers high without flooring off. Do not overstow
W	Felt, waste. *See* Cotton waste										
	Felt, waste, wet. *See* Waste wool, wet										
E	Ferric ammonium citrate (*RQ-1000/454*)	ORM-E	NA9118	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ferric ammonium oxalate (*RQ-1000/454*)	ORM-E	NA9119	None	None	173.510	No limit	No limit	1,2	1,2	
	Ferric arsenate, solid	Poison B	UN1606	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Ferric arsenite, solid	Poison B	UN1607	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
EA	Ferric chloride, solid, *anhydrous* (*RQ-1000/454*)	ORM-B	UN1773	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
E	Ferric chloride solution (*RQ-1000/454*)	Corrosive material	UN2582	Corrosive	173.244	173.245	1 quart	10 quarts	1,2	1,2	
E	Ferric fluoride (*RQ-100/45.4*)	ORM-E	NA9120	None	None	173.510	No limit	No limit	1,2	1,2	
E	Ferric nitrate (*RQ-1000/454*)	Oxidizer	UN1466	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
E	Ferric sulfate (*RQ-1000/454*)	ORM-E	NA9121	None	None	173.510	No limit	No limit	1,2	1,2	
W	Ferrochrome, exothermic	ORM-C		None	173.505	173.985			1	1	
W	Ferromanganese, exothermic. *See* Ferrochrome, exothermic										
W	Ferrophosphorus	ORM-A		None	173.505	173.635			1,2	1,2	Keep dry. Stow away from living quarters
AW	Ferrosilicon, *containing 30% or more but not more than 70% silicon*	ORM-A	UN1408	None	173.505	173.645	Forbidden	25 pounds	1,2	1,2	Keep dry. Stow away from living quarters. Segregation same as for flammable solids labeled Dangerous When Wet
E	Ferrous ammonium sulfate (*RQ-1000/454*)	ORM-E	NA9122	None	None	173.510	No limit	No limit	1,2	1,2	
	Ferrous arsenate (*iron arsenate*), solid	Poison B	UN1608	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
EA	Ferrous chloride, solid (*RQ-100/45.4*)	ORM-B	NA1759	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Ferrous chloride, solution (*RQ-100/45.4*)	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
E	Ferrous sulfate (*RQ-1000/454*)	ORM-E	NA9125	None	None	173.510	No limit	No limit	1,2	1,2	
	Fertilizer ammoniating solution *containing free ammonia (more than 25.3 p.s.i.g.)*	Nonflammable gas	UN1043	Nonflammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1,2	4	
	Fertilizer, tankage. *See* Garbage, tankage										
	Fibers *or* fabric, containing not more than 5% animal *or* vegetable oil	Flammable solid	NA1373	Flammable solid	None	173.170	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
W	Fibers (*jute, hemp, flax, sisal, coir, kapok, and similar vegetable fibers*)	ORM-C	NA1372	None	173.505	173.965			1,2	1,2	Stow away from animal or vegetable oils. Segregation same as for flammable solids
	Fibers, burnt	Flammable solid	NA1372	Flammable solid	None	173.169	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Film (*nitrocellulose*)	Flammable solid	NA1324	Flammable solid	None	173.177	50 pounds	200 pounds	1,3	1,3	Stow away from other flammable cargo or substances
	Film, photographic, (including scrap film), safety, nonflammable, or slow burning. Not subject to requirements of this subchapter										
	Firecracker. See Fireworks, common *or* special										
	Firecracker salute. See Fireworks, common *or* special										
	Fire extinguisher	Nonflammable gas	UN1044	Nonflammable gas	173.306		150 pounds	500 pounds	1,2	1,2	
	Fire extinguisher charge containing not more than 50 grains of propellant explosive per unit. Not subject to requirements of this subchapter.										
	Fire extinguisher charge containing sulfuric acid	Corrosive material	UN1774	Corrosive	173.261		1 quart	1 gallon	1,2	1,2	
	Fireworks, common	Class C explosive		Explosive C	None	173.100 173.108	50 pounds	200 pounds	1,3	1,3	Passenger vessels in metal lockers only
	Fireworks, exhibition display piece. See Fireworks, special										
	Fireworks, special	Class B explosive		Explosive B	None	173.88 173.91	Forbidden	200 pounds	3	3	Passenger vessels in metal lockers only. Toy torpedoes must not be packed with other special fireworks
W	Fish meal *or* fish scrap containing 6% to 12% water	ORM-C	NA2216	None	173.505	173.995			1,2	1,2	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. *Use double strip stowage* for cargo 6-12 percent moisture containing not more than 12 percent fat. *Use single strip stowage* for cargo 6-12 percent moisture containing 12-15 percent fat.
	Fish meal *or* fish scrap containing less than 6% or more than 12% water	Flammable solid	NA1374	Flammable solid	None	173.171	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Fissile radioactive material. *See* Radioactive material, fissile										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Flame retardant compound liquid	Corrosive material	NA1760	Corrosive	173.244	173.291	1 quart	10 gallons	1,2	1,2	
+	Flammable gas n.o.s. *See* Compressed gas, n.o.s.										
	Flammable liquid, corrosive, n.o.s.	Flammable liquid	UN2924	Flammable liquid and Corrosive	173.118	173.119	1 quart	1 quart	1,2	1	
	Flammable liquid, n.o.s.	Flammable liquid	UN1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Flammable liquid, poisonous, n.o.s.	Flammable liquid	UN1992	Flammable liquid and Poison	173.118	173.119	1 quart	10 gallons	1,2	1	
	Flammable solid, corrosive, n.o.s.	Flammable solid	UN2925	Flammable solid and Corrosive	173.153	173.154	25 pounds	25 pounds	1	4	
	Flammable solid, n.o.s.	Flammable solid	UN1325	Flammable solid	173.153	173.154	25 pounds	25 pounds	1,2	1,2	
	Flammable solid, poisonous, n.o.s.	Flammable solid	UN2926	Flammable solid and Poison	173.153	173.154	25 pounds	25 pounds	1,2	1	
	Flare. See Fireworks, common										
	Flare, airplane. See Fireworks, special										
	Flash cartridge. See Fireworks, special *or* Low explosives										
	Flash cracker. See Fireworks, common *or* special										
	Flash powder. See Fireworks, special *or* Low explosives										
	Flax. See Fibers										
	Flexible linear shaped charge, metal clad	Class C explosive		Explosive C	None	173.104	50 pounds	300 pounds	1,3	1,3	
	Flowers of sulfur. *See* Sulfur										
	Flue dust, poisonous	Poison B	NA2811	Poison	173.364	173.368	50 pounds	200 pounds	1,2	1,2	
	Fluoboric acid	Corrosive material	UN1775	Corrosive	173.244	173.283	1 quart	1 gallon	1,2	1,2	
E	Fluoric acid. *See* Hydrofluoric acid										
	Fluorine	Nonflammable gas	UN1045	Poison and Oxidizer	None	173.302	Forbidden	Forbidden	1	5	Stow in well ventilated space away from organic materials
	Fluorophosphoric acid, anhydrous. *See* Monofluorophosphoric acid, anhydrous										
	Fluorosilicic acid. *See* Hydrofluorosilicic acid										
	Fluorosulfonic acid *or* Fluosulfonic acid	Corrosive material	UN1777	Corrosive	None	173.274	Forbidden	1 gallon	1	5	Keep dry
	Forbidden explosives. See 173.51	Forbidden									
	Forbidden materials. See 173.21	Forbidden									
EAW	Formaldehyde solution (*flash point more than 141 deg F.; in containers of 110 gallons or less*) (*RQ-1000/454*)	ORM-A	UN2209	None	173.505	173.510	10 gallons	55 gallons	1,2	4	
E	Formaldehyde solution (*flash point not more than 141 deg F.; in containers over 110 gallons*) (*RQ-1000/454*)	Combustible liquid	UN1198	None	173.118a	None	10 gallons	55 gallons	1,2	1,2	
EAW	Formaldehyde solution (*flash point not more than 141 deg F.; in containers of 110 gallons or less*) (*RQ-1000/454*)	ORM-A	UN1198	None	173.505	173.510	10 gallons	55 gallons	1,2	4	
E	Formaldehyde solution (*flash point more than 141 deg F.; in containers over 110 gallons*) (*RQ-1000/454*)	Combustible liquid	UN2209	None	173.118a	None	10 gallons	55 gallons	1,2	1,2	
	Formalin. *See* Formaldehyde solution										
E	Formic acid (*RQ-5000/2270*)	Corrosive material	UN1779	Corrosive	173.244	173.245 173.289	1 quart	5 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
E	Formic acid solution (*RQ-5000/2270*)	Corrosive material	NA1779	Corrosive	173.244	173.245 173.289	1 quart	5 gallons	1,2	1,2	
	Fuel, aviation, turbine engine	Flammable liquid	UN1863	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Fuel, aviation, turbine engine	Combustible liquid	UN1863	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fuel oil	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fuel oil, Diesel. *See* Fuel oil										
	Fuel oil, No. 1, 2, 4, 5 *or* 6	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fulminate of mercury (dry)	Forbidden									
	Fulminate of mercury, wet. See Initiating explosive										
	Fulminating gold	Forbidden									
	Fulminating mercury	Forbidden									
	Fulminating platinum	Forbidden									
	Fulminating silver	Forbidden									
	Fulminic acid	Forbidden									
E	Fumaric acid (*RQ-5000/2270*)	ORM-E	NA9126	None	None	173.510	No limit	No limit	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5)		(6)		(7)		
					Packaging		Maximum net quantity in one package		Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Fumaryl chloride	Corrosive material	UN1780	Corrosive	173.244	173.245	1 quart	1 quart	1	1	Glass carboys not permitted
	Fumigant. See 173.152(a) Note 1										
	Furan	Flammable liquid	UN2389	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Furfural (*RQ-1000/454*)	Combustible liquid	UN1199	None	173.118a	None	No limit	No limit	1,2	1	
	Fusee (*railway or highway*)	Flammable solid	NA1325	Flammable solid	None	173.154a	50 pounds	200 pounds	1,3	1,3	
	Fuse igniter	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Fuse, instantaneous	Class C explosive		Explosive C	173.100		50 pounds	150 pounds	1,2	1,2	
	Fuse lighter	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Fusel oil	Combustible liquid	UN1201	None	173.118a	None	No limit	No limit	1,2	1,2	
	Fuse, mild detonating, metal clad	Class C explosive		Explosive C	None	173.104	50 pounds	300 pounds	1,2	1,2	
	Fuse, safety	Class C explosive		Explosive C	173.100	173.100	50 pounds	300 pounds	1,2	1,2	
	Fuze, combination	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Fuze, detonating	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Fuze, detonating, Class C explosive	Class C explosive		Explosive C	None	173.113	50 pounds	150 pounds	1,3	1,3	
	Fuze, detonating, radioactive	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
	Fuze, percussion	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Fuze, time	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Fuze, tracer	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Galactsan trinitrate	Forbidden									
	Gallium metal, liquid	ORM-B	UN2803	None	None	173.861	Forbidden	Forbidden	1	5	None
	Gallium metal, solid	ORM-B	UN2803	None	None	173.862	40 pounds	40 pounds	1,3	1	Shade from radiant heat
W	Garbage tankage *containing 8% or more water*	ORM-C		None	173.505	173.1000			1,2	1,2	
	Garbage tankage, *containing less than 8% water*	Flammable solid	NA1325	Flammable solid	None	173.208	Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Gas cylinder, empty. *See* Cylinder, empty										
	Gas drips, hydrocarbon	Combustible liquid	UN1864	None	173.118a	None	No limit	No limit	1,2	1,2	
	Gas drips, hydrocarbon	Flammable liquid	UN1864	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Gas identification set	Poison A	NA9035	Poison gas	None	173.331	Forbidden	Forbidden	1	5	
	Gas identification set	Irritating material	NA9035	Irritant	None	173.331	Forbidden	Forbidden	1	5	
	Gas mine. See Explosive mine										
	Gasohol (*gasoline mixed with ethyl alcohol*). *See* Gasoline										
	Gas oil. *See* Fuel oil										
	Gasoline (*including casing-head and natural*)	Flammable liquid	NA1257	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	4	
	Gelatine Dynamite. See High explosive										
	Germane	Poison A	UN2192	Poison gas and Flammable gas	None	173.323	Forbidden	Forbidden	1	5	
	Glycerol-1,3-dinitrate	Forbidden									
	Glycerol monogluconate trinitrate	Forbidden									
	Glycerol monolactate trinitrate	Forbidden									
	Grenade *without bursting charge. (With incendiary material)*	Class B explosive		Explosive B	None	173.91	Forbidden	Forbidden	3	3	Passenger vessels in metal lockers only
	Grenade *without bursting charge. (With smoke charge)* (Smoke grenade)	Class C explosive		Explosive C	None	173.108	50 pounds	150 pounds	1,3	1,3	
	Grenade *without bursting charge. (With Poison A gas charge)*	Poison A	NA2016	Poison gas	None	173.330	Forbidden	Forbidden			*See* correct shipping name of applicable Poison A material for stowage, special handling, and special segregation requirements
	Grenade *without bursting charge. (With Poison B charge)*	Poison B	NA2016	Poison	None	173.330	Forbidden	Forbidden			*See* correct shipping name of applicable Poison B material for stowage, special handling, and special segregation requirements
	Grenade, empty, primed	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Grenade, hand *or* rifle, explosive (*with or without gas, smoke, or incendiary material*)	Class A explosive		Explosive A	None	173.56	Forbidden	Forbidden	1,2	5	No other cargo may be stowed in the same hold with these items

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Grenade, tear gas	Irritating material	NA2017	Irritant	None	173.385	Forbidden	75 pounds	1,2	1	
	Guanidine nitrate	Oxidizer	UN1467	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Separate from nitro-compounds, chlorates, and acids
	Guanyl nitrosamino guanylidene hydrazine. See Initiating explosive										
	Guanyl nitrosamino guanylidene hydrazine (dry)	Forbidden									
	Guanyl nitrosamino guanyl tetrazene. See Initiating explosive										
	Guided missile, without warhead. See Rocket motor, Class A explosive *or* Rocket motor, Class B explosive										
	Guided missile with warhead. See Rocket ammunition with explosive, illuminating, gas, incendiary, *or* smoke projectile										
	Guncotton. See High explosive										
E	Guthion. *See* Azinphos methyl										
	Hafnium metal, dry. (*See 173.214 Note 3*)	Flammable solid	UN2545	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	
	Hafnium metal, wet	Flammable solid	UN1326	Flammable solid	None	173.214	Forbidden	150 pounds	1,2	5	
	Hair, wet	Flammable solid	NA1372	Flammable solid	None	173.172	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Hand signal device	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,2	1,2	
W	Hay	ORM-C	UN1327	None	173.505	173.1005			1,2	1,2	Segregation same as for flammable solids. Stow away from animal or vegetable oils
W	Hay or straw (*loose, wet, or damp*)		UN1327								Forbidden for water shipment
E	Hazardous substance, liquid *or* solid, n.o.s.	ORM-E	NA9188	None	None	173.1300	No limit	No limit	1,2	1,2	
E	Hazardous waste, liquid *or* solid, n.o.s.	ORM-E	NA9189	None	173.505	173.1300	Forbidden	550 pounds	1,2	1,2	
	Hazardous waste, meeting the definition of a hazard class other than ORM-E. See 172.101(c)(10)										
	Heater for refrigerator car, liquid fuel type (*containing fuel*)	Flammable liquid	NA1993	Flammable liquid	173.146		Forbidden	Forbidden	1,2	1	
	Helium	Nonflammable gas	UN1046	Nonflammable gas	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,2	
	Helium-oxygen mixture	Nonflammable gas	NA1980	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
E	Heptachlor (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Heptane	Flammable liquid	UN1206	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
W	*Hessian. See* Burlap cloth										
E	Hexachlorocyclopentadiene (*RQ-1/0.454*)	Corrosive material	UN2646	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
W	Hexachloroethane	ORM-A	NA9037	None	173.505	173.650			1,2	1,2	
	Hexadecyltrichlorosilane	Corrosive material	UN1781	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Hexadiene	Flammable liquid	UN2458	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
	Hexaethyl tetraphosphate and compressed gas mixture	Poison A	UN1612	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat
	Hexaethyl tetraphosphate, liquid	Poison B	UN1611	Poison	None	173.358	Forbidden	1 quart	1	4	
	Hexaethyl tetraphosphate mixture, dry (*containing more than 2% hexaethyl tetraphosphate*)	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1,2	5	
	Hexaethyl tetraphosphate mixture, dry (*containing not more than 2% hexaethyl tetraphosphate*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	4	
	Hexaethyl tetraphosphate mixture, liquid (*containing more than 25% hexaethyl tetraphosphate*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1,2	5	
	Hexaethyl tetraphosphate mixture, liquid (*containing not more than 25% hexaethyl tetraphophate*)	Poison B	UN2783	Poison	173.359	173.359	1 quart	1 quart	1,2	4	
	Hexafluorophosphoric acid	Corrosive material	UN1782	Corrosive	None	173.275	Forbidden	1 gallon	1,2	1,2	
	Hexafluoropropylene	Nonflammable gas	UN1858	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1	4	
	Hexafluoropropylene oxide	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,2	1,2	
	Hexaldehyde	Flammable liquid	UN1207	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxocyclononane, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2165								

§172.101 Hazardous Materials Table (cont'd)

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+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxocyclononane, *not more than 52% with inert solid. See* Organic peroxide, solid, n.o.s.		UN2166								
	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxocyclononane, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2167								
	Hexamethylenediamine, solid	Corrosive material	UN2280	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
	Hexamethylenediamine, solution	Corrosive material	UN1783	Corrosive	173.244	173.292	1 quart	10 gallons	1,2	1,2	
	Hexamethyleneimine	Corrosive material	UN2493	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Hexamethylene triperoxide diamine (dry)	Forbidden									
	Hexamethylol benzene hexanitrate	Forbidden									
	Hexane	Flammable liquid	UN1208	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	2,2',4,4',6,6'-Hexanitro-3,3'-dihydroxyazobenzene (dry)	Forbidden									
	Hexanitroazoxy benzene	Forbidden									
	2,2',3',4,4',6-Hexanitrodiphenylamine	Forbidden									
	2,3',4,4',6,6'-Hexanitrodiphenylether	Forbidden									
	N,N'-(hexanitrodiphenyl)ethylene dinitramine (dry)	Forbidden									
	Hexanitrodiphenyl urea	Forbidden									
	Hexanitroethane	Forbidden									
	Hexanitrooxanilide	Forbidden									
	Hexanoic acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Hexyltrichlorosilane	Corrosive material	UN1784	Corrosive	None	173.290	Forbidden	10 gallons	1	1	Keep dry
	High explosive	Class A explosive		Explosive A	173.055	173.61 to 173.97	Forbidden	Forbidden	6	5	
	High explosive, liquid	Class A explosive		Explosive A	None	173.62	Forbidden	Forbidden	6	5	
	Hydraulic accumulator. *See* Accumulator, pressurized										
	Hydrazine, anhydrous	Flammable liquid	UN2029	Flammable liquid and Poison	None	173.276	Forbidden	5 pints	1	5	Segregation same as for corrosives
	Hydrazine, aqueous solution	Corrosive material	UN2030	Corrosive	None	173.276	Forbidden	5 pints	1	5	
	Hydrazine azide	Forbidden									
	Hydrazine chlorate	Forbidden									
	Hydrazine dicarbonic acid diazide	Forbidden									
	Hydrazine perchlorate	Forbidden									
	Hydrazine selenate	Forbidden									
	Hydriodic acid	Corrosive material	UN1787	Corrosive	173.244	173.245	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
	Hydrobromic acid, *more than 49% strength*	Corrosive material	UN1788	Corrosive	None	173.292	Forbidden	Forbidden	1	1	Glass carboys not permitted on passenger vessel
	Hydrobromic acid, anhydrous. *See* Hydrogen bromide										
	Hydrobromic acid not more than 49% strength	Corrosive material	UN1788	Corrosive	173.244	173.292	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
+	Hydrocarbon gas, liquefied	Flammable gas	UN1965	Flammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1,2	1	
+	Hydrocarbon gas, nonliquefied	Flammable gas	UN1964	Flammable gas	173.306	173.302	Forbidden	300 pounds	1,2	1	
E	Hydrochloric acid (*RQ-5000/2270*)	Corrosive material	UN1789	Corrosive	173.244	173.293	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
E	Hydrochloric acid, anhydrous. *See* Hydrogen chloride										
E	Hydrochloric acid mixture (*RQ-5000/2270*)	Corrosive material	NA1789	Corrosive	173.244	173.293	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
E	Hydrochloric acid solution, inhibited (*RQ-5000/2270*)	Corrosive material	UN1789	Corrosive	173.244	173.293	1 quart	1 gallon	1	1	Glass carboys not permitted on passenger vessel
E	Hydrocyanic acid (*prussic*) solution (*5% or more hydrocyanic acid*) (*RQ-10/4.54*)	Poison A	UN1613	Flammable gas and Poison gas	None	173.302	Forbidden	Forbidden	1	5	Shade from radiant heat. Aqueous solutions containing more than 50 percent hydrogen cyanide are not permitted in transportation by water
E	Hydrocyanic acid, liquefied (*RQ-10/4.54*)	Poison A	NA1051	Flammable gas and Poison gas	None	173.302	Forbidden	Forbidden	1	5	
	Hydrocyanic acid (prussic), unstabilized	Forbidden									
+E	Hydrocyanic acid solution, less than 5% hydrocyanic acid (*RQ-10/4.54*)	Poison B	UN1613	Poison	None	173.301	Forbidden	25 pounds	1	5	Shade from radiant heat
E	Hydrofluoric acid, anhydrous. *See* Hydrogen fluoride										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Hydrofluoric acid solution (*RQ-5000/2270*)	Corrosive material	UN1790	Corrosive	173.244	173.264	1 quart	1 gallon	1	4	
E	Hydrofluoric and sulfuric acid mixture (*RQ-5000/2270*)	Corrosive material	UN1786	Corrosive	None	173.290	Forbidden	1 gallon	1	5	
	Hydrofluoroboric acid. *See* Fluoboric acid										
	Hydrofluorosilicic acid	Corrosive material	NA1778	Corrosive	None	173.265	1 quart	1 gallon	1,2	1,2	
+	Hydrogen	Flammable gas	UN1049	Flammable gas	173.306	173.302 173.314	Forbidden	300 pounds	1,2	54	
	Hydrogen bromide	Nonflammable gas	UN1048	Nonflammable gas	173.306	173.304	Forbidden	300 pounds	1	4	
E	Hydrogen chloride (*RQ-5000/2270*)	Nonflammable gas	UN1050	Nonflammable gas	173.306	173.304	Forbidden	300 pounds	1	4	
E	Hydrogen fluoride (*RQ-5000/2270*)	Corrosive material	NA1790	Corrosive	None	173.264	Forbidden	110 pounds	1	5	Segregation same as for nonflammable gases
	Hydrogen iodide solution. *See* Hydriodic acid										
+	Hydrogen, liquefied	Flammable gas	UN1966	Flammable gas	None	173.316	Forbidden	Forbidden			Forbidden
	Hydrogen peroxide solution (*40% to 52% peroxide*)	Oxidizer	UN2014	Oxidizer	173.244	173.266	Forbidden	Forbidden	1	4	Shade from radiant heat. Separate from permanganates. Keep away from powdered metals
	Hydrogen peroxide solution (*8% to 40% peroxide*)	Oxidizer	UN2014	Oxidizer	173.244	173.266	1 quart	1 gallon	1,2	1	Shade from radiant heat. Separate from permanganates. Keep away from powdered metals
	Hydrogen peroxide solution (*over 52% peroxide*)	Oxidizer	UN2015	Oxidizer and Corrosive	None	173.266	Forbidden	Forbidden	1	5	Shade from radiant heat. Separate from permanganates. Keep away from powdered metals. Concentrations greater than 60% hydrogen peroxide not permitted on any vessel except under conditions approved by the Department
+	Hydrogen selenide	Flammable gas	UN2202	Flammable gas and Poison	None	173.328	Forbidden	Forbidden	1	5	
E	Hydrogen sulfate. *See* Sulfuric acid										
+E	Hydrogen sulfide (*RQ-100/45.4*)	Flammable gas	UN1053	Flammable gas and Poison	None	173.304 173.314	Forbidden	300 pounds	1	5	
	Hydrosilicofluoric acid. *See* Hydrofluorosilicic acid										
	Hydroxyl amine iodide	Forbidden									
E	Hypochlorite solution *containing more than 7% available chlorine by weight* (*RQ-100/45.4*)	Corrosive material	NA1791	Corrosive	173.244	173.277	1 quart	4 gallons	1,2	1	Glass carboys in hampers not permitted under deck
EA	Hypochlorite solution containing not more than 7% available chlorine *by weight* (*RQ-100/45.4*)	ORM-B	NA1791	None	173.505	173.510	No limit	No limit			
	Hyponitrous acid	Forbidden									
	Igniter	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Igniter cord	Class C explosive		Explosive C	None	173.100	50 pounds	150 pounds	1,3	1,3	
	Igniter fuse, metal clad	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Igniter, jet thrust (jato)	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Igniter, jet thrust (jato)	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Igniter, rocket motor	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Igniter, rocket motor	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Illuminating projectile. *See* Fireworks, special										
	Iminobispropylamine	Corrosive material	UN2269	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Initiating explosive (*diazodinitrophenol*)	Class A explosive		Explosive A	None	173.70	Forbidden	Forbidden	6	5	
	Initiating explosive (*fulminate of mercury*)	Class A explosive		Explosive A	None	173.71	Forbidden	Forbidden	6	5	
	Initiating explosive (*guanyl nitrosamino guanylidene hydrazine*)	Class A explosive		Explosive A	None	173.72	Forbidden	Forbidden	6	5	
	Initiating explosive (*lead azide, dextrinated type only*)	Class A explosive		Explosive A	None	173.73	Forbidden	Forbidden	6	5	
	Initiating explosive (*lead mononitroresorcinate*)	Class A explosive		Explosive A	None	173.70	Forbidden	Forbidden	6	5	
	Initiating explosive (*lead styphnate (lead trinitroresorcinate)*)	Class A explosive		Explosive A	None	173.74	Forbidden	Forbidden	6	5	
	Initiating explosive (*nitro mannite*)	Class A explosive		Explosive A	None	173.75	Forbidden	Forbidden	6	5	
	Initiating explosive (*nitrosoguanidine*)	Class A explosive		Explosive A	None	173.76	Forbidden	Forbidden	6	5	

§172.101 Hazardous Materials Table (cont'd)

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+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Initiating explosive (*pentaerythrite tetranitrate*)	Class A explosive		Explosive A	None	173.77	Forbidden	Forbidden	6	5	
	Initiating explosive (*tetrazene (guanyl nitrosamine guanyl tetrazene)*)	Class A explosive		Explosive A	None	173.78	Forbidden	Forbidden	6	5	
	Initiating explosives (dry)	Forbidden									
	Ink	Combustible liquid	UN2867	None	173.118a	None	No limit	No limit	1,2	1,2	
	Ink	Flammable liquid	UN1210	Flammable liquid	173.118	173.144	1 quart	10 gallons	1,2	1	
	Inositol hexanitrate (dry)	Forbidden									
	Insecticide, dry, n.o.s.	Poison B	NA2588	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Insecticide, liquefied gas (*containing no Poison A or B material*)	Nonflammable gas	NA1968	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,3	1,3	
	Insecticide, liquefied gas, containing Poison A material *or* Poison B material	Poison A	NA1967	Poison gas	None	173.329 173.334	Forbidden	Forbidden	1	5	Shade from radiant heat
	Insecticide, liquid, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Insecticide, liquid, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Insecticide, liquid, n.o.s.	Poison B	NA2902	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
W	Insulation tape (*varnished cloth type*). *See* Oiled material										
	Inulin trinitrate (dry)	Forbidden									
	Iodine azide (dry)	Forbidden									
	Iodine monochloride	Corrosive material	UN1792	Corrosive	None	173.293	Forbidden	1 quart	1	5	Keep dry
	Iodine pentafluoride	Oxidizer	UN2495	Oxidizer and Poison	None	173.216	Forbidden	100 pounds	1	1	Keep dry
	Iodoxy compounds (dry)	Forbidden									
	Iridium nitratopentamine iridium nitrate	Forbidden									
E	Iron chloride, solid. *See* Ferric chloride, solid										
	Iron mass *or* sponge, *not properly oxidized*	Flammable solid	NA1383	Flammable solid	None	173.174	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Iron mass *or* sponge, spent	Flammable solid	UN1376	Flammable solid	None	173.174	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Iron oxide, spent. *See* Iron mass *or* sponge, spent										
E	Iron sesquichloride, solid. *See* Ferric chloride										
	Irritating agent, n.o.s.	Irritating material	NA1693	Irritant	None	173.382	Forbidden	75 pounds	1	1	Stow away from living quarters
	Isobutane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
	Isobutyl acetate	Flammable liquid	UN1213	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isobutylamine	Flammable liquid	UN1214	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isobutylene *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
	Isobutyric acid	Corrosive material	UN2529	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Isobutyric anhydride	Corrosive material	UN2530	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Isononanyl peroxide, *technically pure or* Isononanyl peroxide, *in solution*. *See* Organic peroxide, liquid *or* solution, n.o.s.		UN2128								
	Isooctane	Flammable liquid	UN1262	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isooctene	Flammable liquid	UN1216	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Isopentane	Flammable liquid	UN1265	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Isopentanoic acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Isoprene (*RQ-1000/454*)	Flammable liquid	UN1218	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Isopropanol	Flammable liquid	UN1219	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,0	1,2	
E	Isopropanolamine dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9127	None	None	173.510	No limit	No limit	1,2	1,2	
	Isopropyl acetate	Flammable liquid	UN1220	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isopropyl acid phosphate, solid	Corrosive material	UN1793	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
	Isopropyl alcohol. *See* Isopropanol										
	Isopropylamine	Flammable liquid	UN1221	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Isopropyl mercaptan	Flammable liquid	UN2708	Flammable liquid	None	173.141	Forbidden	10 gallons	1,3	5	

§172.101 Hazardous Materials Table (cont'd)

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	Isopropyl nitrate	Flammable liquid	UN1222	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Isopropyl percarbonate, stabilized	Organic peroxide	NA2134	Organic peroxide	None	173.282	Forbidden	Forbidden	5	5	
	Isopropyl percarbonate, unstabilized	Organic peroxide	NA2133	Organic peroxide	None	173.218	Forbidden	Forbidden	5	5	
	Isopropyl peroxydicarbonate, *technically pure. See* Isopropyl percarbonate, unstabilized		UN2133								
	Isopropyl peroxydicarbonate, *not more than 52% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2134								
	Isopropyl phosphoric acid, solid. *See* Isopropyl acid phosphate, solid										
	Isothiocyanic acid (polymerization hazard)	Forbidden									
	Jet thrust igniter. *See* Igniter, jet thrust										
	Jet thrust unit (*jato*)	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Jet thrust unit (*jato*)	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
W	*Jute. See* Fibers										
W	*Kapok. See* Fibers										
E	Kelthane (*RQ-5000/2270*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	1,2	1,2	
E	Kepone (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	1,2	1,2	
	Kerosene	Combustible liquid	UN1223	None	173.118a	None	No limit	No limit	1,2	1,2	
	Lacquer. *See* Paint, Enamel, Lacquer, Stain, *etc.*										
	Lacquer base *or* Lacquer chips, plastic (*Wet with alcohol or solvent*)	Flammable liquid	NA1263	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,2	1	
	Lacquer base, *or* Lacquer chips, dry	Flammable solid	NA2557	Flammable solid	173.153	173.175	25 pounds	100 pounds	1	1	
	Lacquer base, liquid. *See* Paint, Enamel, Lacquer, Stain, *etc.*										
	Lacquer removing, reducing, *or* thinning compound. *See* Compound, lacquer, paint, *or* varnish, removing, reducing *or* thinning liquid										
	Lauroyl peroxide	Organic peroxide	UN2124	Organic peroxide	173.153	173.157 173.158	2 pounds	25 pounds	1,2	1	
	Lauroyl peroxide, *not more than 42%, stable dispersion, in water. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2893								
	Lauroyl peroxide, *technically pure. See* Lauroyl peroxide.		UN2124								
E	Lead acetate (*RQ-5000/2270*)	ORM-E	UN1616	None	None	173.510	No limit	No limit	1,2	1,2	
E	Lead arsenate, solid (*RQ-5000/2270*)	Poison B	UN1617	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	
	Lead arsenite, solid	Poison B	UN1618	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Lead azide. See Initiating explosive										
	Lead azide (dry)	Forbidden									
EA	Lead chloride (*RQ-5000/2270*)	ORM-B	NA2291	None	173.505	173.800	25 pounds	100 pounds	1,2	1,2	
	Lead cyanide	Poison B	UN1620	Poison	173.370		25 pounds	No limit	1,2	1,2	Stow away from acids
W	Lead dross (*containing 3% or more free acid*)	ORM-C	NA1794	None	173.505	173.1010			1,2	1,2	Segregation same as for corrosive materials
EA	Lead fluoborate (*RQ-5000/2270*)	ORM-B	NA2291	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
EA	Lead fluoride (*RQ-1000/454*)	ORM-B	NA2811	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
E	Lead iodide (*RQ-5000/2270*)	ORM-E	NA2811	None	None	173.510	No limit	No limit	1,2	1,2	
	Lead mononitroresorcinate. See Initiating explosive										
	Lead mononitroresorcinate (dry)	Forbidden									
E	Lead nitrate (*RQ-5000/2270*)	Oxidizer	UN1469	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
	Lead peroxide	Oxidizer	UN1872	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
	Lead picrate (dry)	Forbidden									
W	Lead scrap. *See* Lead dross										
E	Lead stearate (*RQ-5000/2270*)	ORM-E	NA2811	None	None	173.510	No limit	No limit	1,2	1,2	
	Lead styphnate (dry)	Forbidden									
	Lead styphnate (lead trinitroresorcinate). See Initiating explosive										
E	Lead sulfate, solid (*containing more than 3% free acid*) (*RQ-5000/2270*)	Corrosive material	UN1794	Corrosive	173.244	173.2455	25 pounds	100 pounds	1,2	1,2	
E	Lead sulfide (*RQ-5000/2270*)	ORM-E	NA2291	None	None	173.510	No limit	No limit	1,2	1,2	
E	Lead thiocyanate (*RQ-5000/2270*)	ORM-E	NA2291	None	None	173.510	No limit	No limit	1,2	1,2	
	Leather bleach *or* dressing	Flammable liquid	NA1142	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Leather bleach *or* dressing	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Life-rafts, inflatable	ORM-C		None	None	173.906	1 per inaccessible cargo compartment	No limit	1,2	1,2	
	Lighter fluid	Flammable liquid	UN1226	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Lime-nitrogen. See Calcium cyanamide, not hydrated										
	Lime, unslaked. *See* Calcium oxide										
EA	Lindane (*RQ-1/.454*)	ORM-A	NA2761	None	173.505	173.510	No limit	No limit	1,2	1,2	
+	Liquefied hydrocarbon gas. *See* Hydrocarbon gas, liquefied										
	Liquefied nonflammable gas (*charged with nitrogen, carbon dioxide, or air*)	Nonflammable gas	NA1956	Nonflammable gas	173.306	173.304	300 pounds	300 pounds	1,2	1,2	
+	Liquefied petroleum gas	Flammable gas	UN1075	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Liquid other than one classed as flammable, corrosive, poison or irritant, charged with nitrogen, carbon dioxide, or air. See Compressed gas n.o.s.										
	Lithium acetylide-ethylene diamine complex	Flammable solid	NA2813	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Lithium aluminum hydride	Flammable solid	UN1410	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Lithium aluminum hydride, ethereal	Flammable liquid	UN1411	Flammable liquid	None	173.137	Forbidden	1 quart	1	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium amide, powdered	Flammable solid	UN1412	Flammable solid	173.153	173.168	25 pounds	100 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium battery. See 173.206(f).										
	Lithium borohydride	Flammable solid	UN1413	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Lithium chromate (*RQ-1000/454*)	ORM-E	NA9134	None	None	173.510	No limit	No limit	1,2	1,2	
	Lithium ferrosilicon	Flammable solid	UN2830	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hydride	Flammable solid	UN1414	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hydride in fused solid form	Flammable solid	UN2805	Flammable solid and Dangerous when wet	None	173.206	Forbidden	100 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hypochlorite compound, dry (*containing more than 39% available chlorine*)	Oxidizer	UN1471	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
	Lithium metal	Flammable solid	UN1415	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium metal, in cartridges	Flammable solid	NA1415	Flammable solid and Dangerous when wet	173.206	173.206	1 pound	25 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium nitride	Flammable solid	UN2806	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium peroxide	Oxidizer	UN1472	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
	Lithium silicon	Flammable solid	UN1417	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
	London purple, solid	Poison B	UN1621	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Low blasting explosive. See Low explosive										
	Low explosive	Class A explosive		Explosive A	None	173.60	Forbidden	Forbidden	6	5	
	Lye. See Sodium hydroxide, solid										
	Magnesium aluminum phosphide	Flammable solid	UN1419	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
+	Magnesium arsenate, solid	Poison B	UN1622	Poison	173.364	173.367	50 pounds	200 pounds	1,2	1,2	
	Magnesium dross, wet or hot. See 173.173	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Magnesium, metal (*powdered, pellets, turnings, or ribbons*)	Flammable solid	UN1869	Flammable solid and Dangerous when wet	173.153	173.220	25 pounds	100 pounds	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
	Magnesium nitrate	Oxidizer	UN1474	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Magnesium perchlorate	Oxidizer	UN1475	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
	Magnesium peroxide, solid	Oxidizer	UN1476	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
	Magnesium scrap (*borings, clippings, shavings, sheet, turnings, or scalpings*)	Flammable solid	NA2793	Flammable solid and Dangerous when wet	173.153	173.220	Forbidden	Forbidden	1,2	1,2	Segregation same as for flammable solids labeled Dangerous When Wet
A	Magnetized material	ORM-C	UN2807	Magnetized material	None	173.1020	No limit	No limit			
EA	Malathion (*RQ-10/4.54*)	ORM-A	NA2783	None	173.505	173.510	No limit	No limit	1,2	1,2	
EA	Maleic acid (*RQ-5000/2270*)	ORM-A	NA2215	None	173.505	173.510	50 pounds	200 pounds	1,2	1,2	Keep tightly closed.
EAW	Maleic anhydride (*RQ-5000/2270*)	ORM-A	UN2215	None	173.505	173.510	50 pounds	200 pounds	1,2	1,2	Stow away from foodstuffs
A	Manganese dioxide	ORM-B	NA1479	None	173.505	173.510	No limit	No limit			
	Mannitan tetranitrate	Forbidden									
	Matches, block. See Matches, strike anywhere										
	Matches, safety, *book, card, or strike-on-box*	Flammable solid	UN1944	Flammable solid	173.176	173.176	50 pounds	50 pounds	1,2	1	
	Matches, strike anywhere	Flammable solid	UN1331	Flammable solid	None	173.176	Forbidden	Forbidden	1,2	1	
E	Matting acid. *See* Sulfuric acid										
	Medicines, n.o.s.	Combustible liquid	UN1851	None	173.118a	None	No limit	No limit	1,2	1,2	
	Medicines, n.o.s.	Flammable liquid	UN1851	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Medicines, n.o.s.	Flammable solid	UN1851	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Medicines, n.o.s.	Oxidizer	UN1851	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Medicines, n.o.s., liquid	Corrosive material	UN1851	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Medicines, n.o.s., liquid	Poison B	UN1851	Poison	173.345	173.346	1 quart	55 gallons	1,3	1	
	Medicines, n.o.s., solid	Corrosive material	UN1851	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Medicines, n.o.s., solid	Poison B	UN1851	Poison	173.364	173.365	50 pounds	200 pounds	1,3	1,3	
	Memtetrahydro phthalic anhydride **	Corrosive material	NA1760	Corrosive	None	173.298	Forbidden	1 quart	1,2	1	
	p-Menthane hydroperoxide, *technically pure. See* Paramenthane hydroperoxide		UN2125								
	Mercaptan mixture, aliphatic	Flammable liquid	NA1228	Flammable liquid	None	173.141	Forbidden	10 gallons	1,3	5	
	Mercaptan mixture, aliphatic (*in containers over 110 gallons*)	Combustible liquid	NA1228	None	173.118a	None	Forbidden	10 gallons	1,2	1,2	
AW	Mercaptan mixture, aliphatic (*in containers of 110 gallons or less). See 173.141(b)*	ORM-A	NA1228	None	173.505	173.510	Forbidden	10 gallons	1,3	5	Stow in well ventilated space away from living quarters
E	Mercaptodimethur (*RQ-100/45.4*)	ORM-E	NA2757	None	None	173.510	No limit	No limit	1,2	1,2	
+	Mercuric acetate	Poison B	UN1629	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric ammonium chloride, solid	Poison B	UN1630	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric benzoate, solid	Poison B	UN1631	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric bromide, solid	Poison B	UN1634	Poison	173.364	173.365	Forbidden	25 pounds	1,2	1,2	
	Mercuric chloride, solid	Poison B	UN1624	Poison	173.364	173.372	Forbidden	25 pounds	1,2	1,2	
+E	Mercuric cyanide, solid (*RQ-1/.454*)	Poison B	UN1636	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Mercuric iodide, solid	Poison B	UN1638	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric iodide solution	Poison B	NA1638	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
E	Mercuric nitrate (*RQ-10/4.54*)	Oxidizer	UN1625	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
+	Mercuric oleate, solid	Poison B	UN1640	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric oxide, solid	Poison B	UN1641	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric oxycyanide, solid	Poison B	UN1642	Poison	173.364	173.365	25 pounds	200 pounds	1,2	1,2	Stow away from acids
+	Mercuric potassium cyanide, solid	Poison B	UN1626	Poison	173.364	173.365 173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
+	Mercuric potassium iodide, solid	Poison B	UN1643	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric salicylate solid	Poison B	UN1644	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric subsulfate, solid	Poison B	NA2025	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+E	Mercuric sulfate, solid (*RQ-10/4.54*)	Poison B	UN1645	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+E	Mercuric sulfocyanate, solid *or* Mercuric thiocyanate, solid (*RQ-10/4.54*)	Poison B	UN1646	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurol *or* Mercury nucleate, solid	Poison B	UN1639	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous acetate, solid	Poison B	UN1629	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercurous azide	Forbidden									
+	Mercurous bromide, solid	Poison B	UN1634	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous gluconate, solid	Poison B	UN1637	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous iodide, solid	Poison B	NA1638	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Mercurous nitrate, solid (*RQ-10/4.54*)	Oxidizer	UN1627	Oxidizer	173.153	173.154	50 pounds	100 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
+	Mercurous oxide, black, solid	Poison B	UN1641	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous sulfate, solid	Poison B	UN1628	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury acetylide	Forbidden									
	Mercury based pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2778	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Mercury based pesticide (*compounds and preparations*), liquid	Poison B	UN2777	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Mercury based pesticide (*compounds and preparations*), solid	Poison B	UN2777	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury compound, n.o.s., solid	Poison B	UN2025	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury fulminate. See Initiating explosive										
	Mercury iodide aquabasic ammonobasic (Iodide of Million's base)	Forbidden									
A	Mercury, metallic	ORM-B	NA2809	None	None	173.960	173.960	See 173.960			
	Mercury nitride	Forbidden									
	Mercury oxycyanide	Forbidden									
	Mesityl oxide	Flammable liquid	UN1229	Flammable liquid	None	173.119	1 quart	10 gallons	1,2	1,2	
	Metal alkyl solution, n.o.s.	Flammable liquid	NA9195	Flammable liquid	173.118	173.119	1 quart	1 gallon	1,2	1	
W	Metal borings, shavings, turnings, *or* cuttings (*ferrous metals only, except stainless steel*)	ORM-C	NA2793	None	173.505	173.1025			1,2	1,2	Keep dry, not permitted if temperature of material is at or above 130 deg F
	Metal salts of methyl nitramine (dry)	Forbidden									
+	Methane	Flammable gas	UN1971	Flammable gas	173.306	173.302	Forbidden	300 pounds	1,2	4	
	Methanol. *See* Methyl alcohol										
	Methazoic acid	Forbidden									
E	Methoxychlor (*RQ-1/0.454*)	ORM-E	NA2761	None	None	173.510	No limit	No limit	1,2	1,2	
	Methyl acetate	Flammable liquid	UN1231	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl acetone	Flammable liquid	UN1232	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Methylacetylene-propadiene, stabilized	Flammable gas	UN1060	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Methyl acrylate, inhibited	Flammable liquid	UN1919	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methylal	Flammable liquid	UN1234	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Methyl alcohol	Flammable liquid	UN1230	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+E	Methylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1061	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
E	Methylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	UN1235	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	Stow away from mercury and its compounds
	Methylamine dinitramine and dry salts thereof	Forbidden									
	Methylamine nitroform	Forbidden									
	Methylamine perchlorate (dry)	Forbidden									
	Methylamyl acetate	Flammable liquid	UN1233	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Methyl amyl ketone	Combustible liquid	UN1110	None	173.118a	None	No limit	No limit	1,2	1,2	
+	Methyl bromide and more than 2% chloropicrin mixture, liquid	Poison B	NA1581	Poison	None	173.353	Forbidden	Forbidden	1	5	Shade from radiant heat
+	Methyl bromide and nonflammable, nonliquefied compressed gas mixture, liquid (*including up to 2% chloropicrin*)	Poison B	NA1955	Poison	None	173.353a	Forbidden	300 pounds	1	5	Stow away from living quarters
+E	Methyl bromide - ethylene dibromide mixture, liquid (*RQ-1000/454*)	Poison B	UN1647	Poison	None	173.353	Forbidden	55 gallons	1	1	
+	Methyl bromide, liquid (*including up to 2% chloropicrin*)	Poison B	NA1581	Poison	None	173.353	Forbidden	55 gallons	1	5	Stow away from living quarters. Segregation same as for nonflammable gas.
	Methyl butene	Flammable liquid	NA2460	Flammable liquid	None	173.119	Forbidden	10 gallons	1,2	5	
	Methyl butyrate	Flammable liquid	UN1237	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl cellosolve. See Ethylene glycol monomethyl ether										
	Methyl cellosolve acetate. See Ethylene glycol monomethyl ether acetate										
+	Methyl chloride	Flammable gas	UN1063	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	
+	Methyl chloride-methylene chloride mixture	Flammable gas	UN1912	Flammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1,2	4	
	Methyl chlorocarbonate. *See* Methyl chloroformate										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
A	Methyl chloroform. *See* 1,1,1-Trichloroethane										
	Methyl chloroformate	Flammable liquid	UN1238	Flammable liquid and Poison	None	173.288	Forbidden	5 pints	1,2	1	
	Methylchloromethyl ether, anhydrous	Flammable liquid	UN1239	Flammable liquid and Poison	None	173.143	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methylcyclohexane	Flammable liquid	UN2296	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methylcyclopentane	Flammable liquid	UN2298	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Methyl dichloroacetate	Corrosive material	UN2299	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Methyldichloroarsine	Poison A	NA1556	Poison gas	None	173.328	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methyl dichlorosilane	Flammable liquid	UN1242	Flammable liquid	None	173.136	Forbidden	5 pints	1,2	1	
	Methylene chloride. *See* Dichloromethane										
	Methylene glycol dinitrate	Forbidden									
	Methyl ethyl ether. *See* Ethyl methyl ether										
	Methyl ethyl ketone	Flammable liquid	UN1193	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl ethyl ketone peroxide, *in solution with not more than 9% by weight active oxygen. See* Organic peroxide, liquid, *or* solution, n.o.s.		UN2550								
	Methyl ethyl ketone peroxide, in solution with more than 9% by weight active oxygen	Forbidden									
	Methyl ethyl pyridine	Corrosive material	UN2300	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Methyl formate	Flammable liquid	UN1243	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Methylfuran	Flammable liquid	UN2301	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	a-Methylglucoside tetranitrate	Forbidden									
	a-Methylglycerol trinitrate	Forbidden									
	Methylhydrazine	Flammable liquid	UN1244	Flammable liquid and Poison	None	173.145	Forbidden	5 pints	1,2	1	Stow separate from oxidizing materials and corrosives
	Methyl isobutyl ketone peroxide, *in solution with not more than 9% by weight active oxygen. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2126								
	Methyl isobutyl ketone peroxide, in solution with more than 9% by weight active oxygen	Forbidden									
	Methyl isopropenyl ketone, inhibited	Flammable liquid	UN1246	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl magnesium bromide in ethyl ether *not over 40% concentration*	Flammable liquid	UN1928	Flammable liquid	None	173.149	Forbidden	Forbidden	1	1	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides
+E	Methyl mercaptan (*RQ-100/45.4*)	Flammable gas	UN1064	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
E	Methyl methacrylate monomer, inhibited (*RQ-5000/2270*)	Flammable liquid	UN1247	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Methyl methacrylate monomer, uninhibited (*high-purity, if acceptable under 173.21 of this subchapter*) (*RQ-5000/2270*)	Flammable liquid	NA1247	Flammable liquid	173.118	173.119	Forbidden	Forbidden	1,2	1	
	Methyl nitrate	Forbidden									
	N-Methyl-N'-nitro-N-nitrosoguanidine (*not exceeding 25 grams in one outside packaging*)	Flammable solid	NA1325	Flammable solid	None	173.179	Forbidden	Forbidden	4	5	
	Methyl norbornene dicarboxylic anhydride. *See* Memtetrahydro phthalic anhydride										
E	Methyl parathion, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,3	1,3	
E	Methyl parathion mixture, dry (*RQ-100/45.4*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	1,2	
E	Methyl parathion mixture, liquid, (containing 25% or less methyl parathion) (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	1/2 pint	1 quart	1,2	1,2	
E	Methyl parathion mixture, liquid, (*containing over 25% methyl parathion*) (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1,2	1,2	
	Methylpentadiene	Flammable liquid	UN2461	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl pentane	Flammable liquid	UN2462	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl phosphonothioic dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Methyl phosphonous dichloride	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Methyl picric acid (heavy metal salts of)	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Methyl propionate	Flammable liquid	UN1248	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl propyl ketone	Flammable liquid	UN1249	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl sulfate. *See* Dimethyl sulfate										
	Methyl sulfide. *See* Dimethyl sulfide										
	Methyltrichlorosilane	Flammable liquid	UN1250	Flammable liquid	None	173.135	Forbidden	10 gallons	1,2	1	
	Methyl trimethylol methane trinitrate	Forbidden									
	Methyl vinyl ketone, inhibited	Flammable liquid	UN1251	Flammable liquid	173.147	173.147	4 ounces	10 gallons	1,2	1	
E	Mevinphos (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.364	173.365	Forbidden	1 quart	2	2	
E	Mexacarbate (*RQ-1000/454*)	Poison B	NA2757	Poison	173.364	173.365	50 pounds	200 pounds	2	2	
	Mild detonating fuse, metal clad. See Fuse, mild detonating, metal clad										
	Mine, empty. See 173.55										
	Mine, explosive, with gaseous material. See Explosive mine										
	Mine rescue equipment containing carbon dioxide	Nonflammable gas		Nonflammable gas	173.306		150 pounds	300 pounds	1,2	1,2	
	Mining reagent, liquid (*containing 20% or more cresylic acid*)	Corrosive material	NA2022	Corrosive	173.244	173.245 173.249a	1 quart	10 gallons	1,2	1,2	
A	Mipafox	ORM-A	UN2783	None	173.505	173.510	No limit	No limit			
E	Mixed acid. *See* Nitrating acid										
A	Molybdenum pentachloride	ORM-B	UN2508	None	173.505	173.500	25 pounds	100 pounds			
	Monobromotrifluoromethane	Nonflammable gas	UN1009	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,2	1,2	
	Monochloroacetone, stabilized *or* inhibited	Irritating material	NA1695	Irritant	None	173.384	Forbidden	5 gallons	1	1	Stow away from living quarters
	Monochloroacetone (unstabilized)	Forbidden									
	Monochlorodifluoromethane	Nonflammable gas	UN1018	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Monochloroethylene. *See* Vinyl chloride										
	Monochloropentafluoroethane	Nonflammable gas	UN1020	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	
	Monochlorotetrafluoroethane	Nonflammable gas	UN1021	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,2	1,2	
	Monochlorotrifluoromethane	Nonflammable gas	UN1022	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	
	Monoethanolamine	Corrosive material	UN2491	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
E	Monoethylamine (*RQ-1000/454*)	Flammable liquid	UN1036	Flammable liquid	None	173.148	Forbidden	5 pints	1,2	5	Segregation same as for flammable gas
	Monofluorophosphoric acid, anhydrous	Corrosive material	UN1776	Corrosive	None	173.275	Forbidden	1 gallon	1,2	1,2	Keep dry
	Morpholine	Flammable liquid	UN2054	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Morpholine, aqueous, mixture	Flammable liquid	NA2054	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Morpholine, aqueous, mixture	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1	4	
	Mortar stain, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Mortar stain, liquid	Flammable liquid	NA1993	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Moth balls. See Naphthalene										
	Motion picture film. See Film										
E	Motor fuel antiknock compound *or* Antiknock compound (*RQ100/45.4*)	Poison B	UN1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flashpoint less than 141 deg F, segregation same as for flammable liquids
E	Motor fuel antiknock compound *or* Antiknock compound; containing tetraethyl lead (*RQ-100/45.4*)	Poison B	UN1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flashpoint is less than 141 DEG F, segregation same as for flammable liquids
	Motor fuel, n.o.s.	Combustible liquid	NA1203	None	173.118a	None	No limit	No limit	1,2	1,2	
	Motor fuel, n.o.s.	Flammable liquid	NA1203	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Motor, internal combustion				173.100						
	Motor vehicle, *etc., including automobile, motorcycle, truck, tractor, and other self-propelled vehicle or equipment powered by internal combustion engine, when offered new or used for transportation and which contain fuel in the engine or fuel tank or the electric storage battery is connected to either terminal of the electrical system*	ORM-C		None	173.100 173.250 173.257 173.306 175.505 176.905				1,2	1,2	
E	Muriatic acid. *See* Hydrochloric acid										
E	Naled (*RQ-10/4.54*)	ORM-E	NA2783	None	None	173.510	No limit	No limit	1,2	1,2	
	Naphtha	Combustible liquid	UN2553	None	173.118a	None	No limit	No limit	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Naphtha	Flammable liquid	UN2553	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Naphtha distillate	Combustible liquid	NA1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Naphtha distillate	Flammable liquid	NA1268	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
EAW	Naphthalene *or* Naphthalin (*RQ-5000/2270*)	ORM-A	UN1334	None	173.505	173.655	25 pounds	300 pounds	1,2	1,2	Segregation same as for flammable solids
	Naphthalene diozonide	Forbidden									
	Naphtha petroleum. See Petroleum naphtha										
	Naphtha, solvent	Combustible liquid	UN1256	None	173.118a	None	No limit	No limit	1,2	1,2	
	Naphtha, solvent	Flammable liquid	UN1256	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Naphthenic acid (*RQ-100/45.4*)	ORM-E	NA9137	None	None	173.510	No limit	No limit	1,2	1,2	
	Naphthyl amineperchlorate	Forbidden									
	Natural gasoline. See Gasoline										
	Neohexane	Flammable liquid	UN1208	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Neon	Nonflammable gas	UN1065	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	New explosive or explosive device. See 173.51 and 173.86										
E	Nickel ammonium sulfate (*RQ-5000/2270*)	ORM-E	NA9138	None	None	173.510	No limit	No limit	1,2	1,2	
	Nickel carbonyl	Flammable liquid	UN1259	Flammable liquid and Poison	None	173.126	Forbidden	Forbidden	1	5	Not permitted on a vessel carrying explosives. Shade from radiant heat. Segregation same as for flammable liquids 1a*
	Nickel catalyst, wet, *finely divided, activated, or spent. With not less than 40% water or other suitable liquid*	Flammable solid	UN1378	Flammable solid	None	173.233	Forbidden	100 pounds	1,2	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Nickel chloride (*RQ-5000/2270*)	ORM-E	NA9139	None	None	173.510	No limit	No limit	1,2	1,2	
+	Nickel cyanide, solid	Poison B	UN1653	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Nickel hydroxide (*RQ-1000/454*)	ORM-E	NA9140	None	None	173.510	No limit	No limit	1,2	1,2	
E	Nickel nitrate (*RQ-5000/2270*)	Oxidizer	UN2725	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Nickel picrate	Forbidden									
E	Nickel sulfate (*RQ-5000/2270*)	ORM-E	NA9141	None	None	173.510	No limit	No limit	1,2	1,2	
	Nicotine hydrochloride	Poison B	UN1656	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nicotine, liquid	Poison B	UN1654	Poison	None	173.346	Forbidden	55 gallons	1,2	1,2	
	Nicotine salicylate	Poison B	UN1657	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Nicotine sulfate, liquid	Poison B	UN1658	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
+	Nicotine sulfate, solid	Poison B	UN1658	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nicotine tartrate	Poison B	UN1659	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nitrated paper (unstable)	Forbidden									
	Nitrate, n.o.s.	Oxidizer	NA1477	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Nitrate of ammonia explosives. See High explosive										
	Nitrates of diazonium compounds	Forbidden									
E	Nitrating acid (*RQ-1000/454*)	Oxidizer	NA1796	Oxidizer	None	173.267	Forbidden	1 quart	1	5	Segregation same as for corrosive materials
E	Nitrating acid, spent (*RQ-1000/454*)	Corrosive material	NA1796	Corrosive	None	173.248	Forbidden	1 quart	1	5	
E	Nitric acid (*over 40%*) (*RQ-1000/454*)	Oxidizer	UN2031	Oxidizer and Corrosive	None	173.268	Forbidden	5 pints	1	5	Segregation same as for corrosive materials. Stow away from hydrazine, separate from diethylenetriamine
E	Nitric acid, 40% or less (*RQ-1000/454*)	Corrosive material	NA1760	Corrosive	None	173.268	Forbidden	5 pints	1	5	Stow away from hydrazine, separate from diethylenetriamine
E	Nitric acid, fuming (*RQ-1000/454*)	Oxidizer	UN2032	Oxidizer and Poison	None	173.268	Forbidden	Forbidden	1	5	Segregation same as for corrosive materials. Stow away from hydrazine, separate from diethylenetriamine
	Nitric ether. See Ethyl nitrate										
	Nitric oxide	Poison A	UN1660	Poison gas	None	173.337	Forbidden	Forbidden	1	5	
	2-Nitro-2-methylpropanol nitrate	Forbidden									
	6-Nitro-4-diazotoluene-3-sulfonic acid (dry)	Forbidden									
	p-Nitroaniline. *See* Nitroaniline										
	N-Nitroaniline	Forbidden									
+	Nitroaniline	Poison B	UN1661	Poison	173.364	173.373	50 pounds	200 pounds	1,2	1,2	
	m-Nitrobenzene diazonium perchlorate	Forbidden									
E	Nitrobenzene, liquid *or* Nitrobenzol, liquid (*oil of mirbane*) (*RQ-1000/454*)	Poison B	UN1662	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nitro carbonitrate. See Blasting agent, n.o.s.										
	Nitrocellulose, colloided, granular *or* flake, wet with not less than 20% alcohol *or* solvent, *or* block, wet with not less than 25% alcohol	Flammable liquid	NA2059	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	
	Nitrocellulose, colloided, granular *or* flake, wet with not less than 20% water	Flammable solid	NA2555	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,3	1	
	Nitrocellulose, dry. See High explosive										
	Nitrocellulose, wet with not less than 30% alcohol *or* solvent	Flammable liquid	NA2556	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Nitrocellulose, wet with not less than 20% water	Flammable solid	NA2555	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,3	1	
+	Nitrochlorobenzene, meta *or* para, solid	Poison B	NA1578	Poison	173.364	173.374	50 pounds	200 pounds	1,2	1,2	
+	Nitrochlorobenzene, ortho, liquid	Poison B	NA1578	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nitroethylene polymer	Forbidden									
	Nitroethyl nitrate	Forbidden									
	Nitrogen	Nonflammable gas	UN1066	Nonflammable gas	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,2	
E	Nitrogen dioxide, liquid (*RQ-1000/454*)	Poison A	UN1067	Poison gas and Oxidizer	None	173.336	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitrogen fertilizer solution	Nonflammable gas	NA1043	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,3	1,3	
	Nitrogen peroxide, liquid	Poison A	NA1067	Poison gas and Oxidizer	None	173.336	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gas. Stow away from organic materials
	Nitrogen, pressurized liquid	Nonflammable gas	UN1977	Nonflammable gas	None	173.304	Forbidden	300 pounds	1,3	1,3	
	Nitrogen tetroxide, liquid	Poison A	NA1067	Poison gas and Oxidizer	None	173.336	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitrogen trichloride	Forbidden									
	Nitrogen trifluoride	Nonflammable gas	UN2451	Nonflammable gas	None	173.302	Forbidden	300 pounds	1	5	Stow away from living quarters and organic materials
	Nitrogen triiodide	Forbidden									
	Nitrogen triiodide monoamine	Forbidden									
	Nitroglycerin, liquid, desensitized. See High explosive, liquid										
	Nitroglycerin, liquid, not desensitized. See 173.51	Forbidden									
	Nitroglycerin, spirits of. See Spirits of nitroglycerin										
	Nitroguanidine, dry. See High explosive										
	Nitroguanidine nitrate	Forbidden									
	Nitroguanidine, wet with not less than 20% water	Flammable solid	UN1336	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,2	4	
	1-Nitro hydantoin	Forbidden									
E	Nitrohydrochloric acid (*RQ-1000/454*)	Corrosive material	UN1798	Corrosive	None	173.278	Forbidden	5 pints	1	5	
E	Nitrohydrochloric acid, diluted (*RQ-1000/454*)	Corrosive material	NA1798	Corrosive	None	173.278	Forbidden	5 pints	1	5	
	Nitro isobutane triol trinitrate	Forbidden									
	Nitromannite. See High explosive										
	Nitromannite (dry)	Forbidden									
	Nitromethane	Flammable liquid	UN1261	Flammable liquid	173.118	173.149a	1 quart	10 gallons	1,2	1,2	
E	Nitromuriatic acid. *See* Nitrohydrochloric acid										
	N-Nitro-N-methylglycolamide nitrate	Forbidden									
E	Nitrophenol (*RQ-1000/454*)	ORM-E	UN1663	None	None	173.510	No limit	No limit	1,2	1,2	
	Nitrophenol pesticide, substituted (*compounds and preparations*), liquid *or* solid. *See* Substituted nitrophenol pesticide (*compounds and preparations*), liquid *or* solid										
	m-Nitrophenyldinitro methane	Forbidden									
	Nitrosoguanidine. *See* Initiating explosive										
	Nitrostarch, dry. *See* High explosive										
	Nitrostarch, wet with not less than 30% alcohol *or* solvent	Flammable liquid	NA1993	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,2	1	
	Nitrostarch, wet with not less than 20% water	Flammable solid	UN1337	Flammable solid	173.153	173.184	25 pounds	100 pounds	1	4	
	Nitrosugars (dry)	Forbidden									
	Nitrosyl chloride	Nonflammable gas	UN1069	Nonflammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1	4	
E	Nitrotoluene (*RQ-1000/454*)	ORM-E	UN1664	None	None	173.510	No limit	No limit	1,2	1,2	
	Nitrourea. See High explosive										
	Nitrous oxide	Nonflammable gas	UN1070	Nonflammable gas	173.306	173.304 173.315	150 pounds	300 pounds	1,2	1,2	Under deck stowage must be in well-ventilated space
+	Nitroxylol	Poison B	NA1665	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Nonflammable gas, n.o.s. *See* Compressed gas, n.o.s.										
+	Nonliquefied hydrocarbon gas. *See* Hydrocarbon gas, nonliquefied										
	Nonyltrichlorosilane	Corrosive material	UN1799	Corrosive	None	173.260	Forbidden	10 gallons	1	1	Keep dry
E	Nordhausen acid. *See* Sulfuric acid										
W	Oakum	ORM-C		None	173.505	173.1030			1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Octadecyltrichlorosilane	Corrosive material	UN1800	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	1,7-Octadiene-3,5-diyne-1,8-dimethoxy-9-octadecynoic acid	Forbidden									
	Octane	Flammable liquid	UN1262	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	n-Octanoyl peroxide, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2129								
	Octyltrichlorosilane	Corrosive material	UN1801	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Oil, *described as oil,* Oil, n.o.s., Petroleum oil, *or* Petroleum oil, n.o.s.	Combustible liquid	NA1270	None	173.118a	None	No limit	No limit	1,2	1,2	
	Oil, *described as oil,* Oil, n.o.s., Petroleum oil, *or* Petroleum oil, n.o.s.	Flammable liquid	NA1270	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Oiled clothing (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material										
AW	Oiled material (*manufactured article properly dried to prevent spontaneous heating*)	ORM-C	NA9053	None	173.505	173.1035	No limit	No limit	1,3	1,3	
	Oiled paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material										
	Oil of mirbane. See Nitrobenzene, liquid										
	Oil of vitriol. See Sulfuric acid										
	Oil well cartridge	Class C explosive		Class C explosive	None	173.112	50 pounds	150 pounds	1,3	1,3	
E	Oleum (*fuming sulfuric acid*) (*RQ-1000/454*)	Corrosive material	NA1831	Corrosive	None	173.272	Forbidden	5 pints	1,2	1	Under deck stowage must be in metal drums only. Keep dry.
	Organic peroxide liquid *or* solution, n.o.s.	Flammable liquid	NA1993	Flammable liquid and Organic peroxide	None	173.119	Forbidden	1 quart	1,2	5	Stow separate from combustible materials, explosives, or acids
	Organic peroxide, liquid, *or* solution, n.o.s.	Organic peroxide	NA9183	Organic peroxide	173.153	173.221	Forbidden	1 quart	1,2	1,2	Stow separate from combustible materials, explosives, or acids.
	Organic peroxide, mixture. *See* Organic peroxide, solid, n.o.s. *or* Organic peroxide, liquid *or* solution, n.o.s., *as appropriate.*		UN2756								
	Organic peroxide, sample, n.o.s. *See* Organic peroxide, solid, n.o.s. *or* Organic peroxide, liquid *or* solution, n.o.s., *as appropriate.*		UN2255								
	Organic peroxide, solid, n.o.s.	Organic peroxide		Organic peroxide	173.153	173.154	Forbidden	25 pounds	1,2	1,2	Stow separate from combustible materials, explosives, or acids.
	Organic peroxide, trial quantity, n.o.s. *See* Organic peroxide, solid, n.o.s. *or* Organic peroxide, liquid *or* solution, n.o.s., *as appropriate.*		UN2899								
	Organic phosphate mixture, Organic phosphate compound mixture, *or* Organic phosphorus compound mixture; liquid	Poison B	NA2783	Poison	173.359	173.359	1/2 pint	1 quart	1,2	5	
	Organic phosphate mixture, Organic phosphate compound mixture, *or* Organic phosphorus compound mixture; solid *or* dry	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	4	
	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound; mixed with compressed gas	Poison A	NA1955	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat
	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound; liquid	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,2	5	
	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound; solid *or* dry	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1,2	4	
	Organochlorine pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2762	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Organochlorine pesticide (*compounds and preparations*), liquid	Poison B	UN2761	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Organochlorine pesticide (*compounds and preparations*), solid	Poison B	UN2761	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Organophosphorus pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2784	Flammable liquid	None	173.119	Forbidden	1 quart	1,2	5	
	Organophosphorus pesticide (*compounds and preparations*), liquid	Poison B	UN2783	Poison	173.359	173.359	Forbidden	1 quart	1,2	5	
	Organophosphorus pesticide (*compounds and preparations*), solid	Poison B	UN2783	Poison	173.377	173.377	Forbidden	200 pounds	1,2	4	
	Organotin pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2787	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Organotin pesticide (*compounds and preparations*), liquid	Poison B	UN2786	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Organotin pesticide (*compounds and preparations*), solid	Poison	UN2786	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
A	ORM-A, n.o.s.	ORM-A	NA1693	None	173.505	173.510	No limit	No limit			

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
A	ORM-B, n.o.s.	ORM-B	NA1760	None	173.505	173.510	No limit	No limit			
	ORM-C. See 173.500 and 176.900										
	Orthonitroaniline. *See* Nitroaniline										
	Oxidizer, corrosive, liquid, n.o.s.	Oxidizer	NA9193	Oxidizer and Corrosive	None	173.245	Forbidden	1 quart	1	5	
	Oxidizer, corrosive, solid, n.o.s.	Oxidizer	NA9194	Oxidizer and Corrosive	173.153	173.154	25 pounds	25 pounds	1	4	
	Oxidizer material packed with other articles. See 173.152										
	Oxidizer, n.o.s. *or* Oxidizing material, n.o.s.	Oxidizer	UN1479	Oxidizer	173.153	173.154	25 pounds	25 pounds	1,2	1,2	
	Oxidizer, poisonous, liquid, n.o.s.	Oxidizer	NA9199	Oxidizer and Poison	None	173.154	Forbidden	1 quart	1	5	
	Oxidizer, poisonous, solid, n.o.s.	Oxidizer	NA9200	Oxidizer and Poison	173.153	173.154	25 pounds	25 pounds	1,2	4	
	Oxygen	Nonflammable gas	NA1072	Oxidizer	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,2	Under deck stowage must be in well ventilated space
	Oxygen, pressurized liquid	Nonflammable gas	NA1073	Oxidizer	None	173.304	Forbidden	Forbidden	1,3	1,3	Stow separate from acetylene. Do not overstow with other cargo
	Paint drier, liquid	Combustible liquid	UN1168	None	173.118a	None	No limit	No limit	1,2	1,2	
	Paint drier, liquid	Flammable liquid	UN1168	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Paint, Enamel, Lacquer, Stain, Shellac, *or* Varnish; Aluminum, Bronze, Gold, Wood filler, liquid *or* Lacquer base, liquid	Combustible liquid	UN1263	None	173.118a	None	No limit	No limit	1,2	1,2	
	Paint, Enamel, Lacquer, Stain, Shellac, *or* Varnish; Aluminum, Bronze, Gold, Wood filler, liquid *or* Lacquer base, liquid	Flammable liquid	UN1263	Flammable liquid	173.118	173.128	1 quart	55 gallons	1,2	1	
	Paint, reducing or thinning compound. See Compound, lacquer, paint, *or* varnish, removing, reducing *or* thinning, liquid										
	Paper caps. See Toy caps										
W	Paper scrap (*when dry, clean, and free from oil*)	ORM-C		None	173.505	173.1075			1,2	1,2	
	Paper stock, wet	Flammable solid	NA1325	Flammable solid	None	173.185	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Paper waste (*when dry, clean, and free from oil*). *See* Paper scrap										
	Paper waste, wet. *See* Waste Paper, wet										
EAW	Paraformaldehyde (*RQ-1000/454*)	ORM-A	UN2213	None	173.505	173.510	50 pounds	200 pounds	1,2	1,2	
	Paraldehyde	Flammable liquid	UN1264	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Paramenthane hydroperoxide	Organic peroxide	UN2125	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Paranitroaniline, solid. *See* Nitroaniline										
E	Parathion and compressed gas mixture (*RQ-1/.454*)	Poison A	NA1967	Poison gas	None	173.334	Forbidden	Forbidden	1,3	5	
E	Parathion, liquid (*RQ-1/.454*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,3	1,3	
E	Parathion mixture, dry (*RQ-1/.454*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,3	1,3	
E	Parathion mixture, liquid (*RQ-1/.454*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1,3	1,3	
E	Paris green, solid. *See* Copper acetoarsenite, solid										
E	PCB. *See* Polychlorinated biphenyls										
	Pelargonyl peroxide, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2130								
	Pentaborane	Flammable liquid	UN1380	Flammable liquid and Poison	None	173.128	Forbidden	Forbidden	1	5	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Pentachlorophenol (*RQ-10/4.54*)	ORM-E	NA2020	None	None	173.510	No limit	No limit	1,2	1,2	
	Pentaerythrite tetranitrate. See Initiating explosive										
	Pentaerythrite tetranitrate, desensitized, wet. See High explosive										
	Pentaerythrite tetranitrate (dry)	Forbidden									
	Pentane	Flammable liquid	UN1265	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,3	4	
	Pentanitroaniline (dry)	Forbidden									
	Pentolite, dry. See High explosive										
	Peracetic acid solution, *not over 43% peracetic acid and not over 6% hydrogen peroxide*	Organic peroxide	NA2131	Organic peroxide	173.223	173.223	1 pint	5 pints	1	4	Shade from radiant heat
	Perchlorate, n.o.s.	Oxidizer	NA1481	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
	Perchloric acid, *exceeding 50% but* not exceeding 72% strength	Oxidizer	UN1873	Oxidizer	None	173.269	Forbidden	5 pints	1	5	Segregation same as for corrosive materials. Stow away from hydrazine.
	Perchloric acid exceeding 72% strength	Forbidden									
	Perchloric acid, not over 50% acid	Oxidizer	UN1802	Oxidizer	173.244	173.269	Forbidden	5 pints	1	1	Segregation same as for corrosive materials. Stow away from hydrazine
+	Perchloromethyl mercaptan	Poison B	UN1670	Poison	173.345	173.360	Forbidden	10 pounds	1	4	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Percussion cap	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Percussion fuze	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
A	Perfluoro-2-butene	ORM-A	NA2422	None	173.505	173.605	10 gallons	55 gallons			
	Permanganate, n.o.s.	Oxidizer	NA1482	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds, hydrogen peroxide, and acids
E	*Permanganate of potash. See* Potassium permanganate										
	Peroxide, organic. See Organic Peroxide										
	Peroxyacetic acid, *not more than 43% and with not more than 6% hydrogen peroxide. See* Peracetic acid solution, *not over 43% peracetic acid and not over 6% hydrogen peroxide.*		UN2131								
	Peroxyacetic acid, more than 43% and with more than 6% hydrogen peroxide	Forbidden									
W	Pesticide, water reactive, *including but not limited to fungicides, and herbicides, etc., which contain manganese ethylenebisdithiocarbamate*	ORM-C	NA2210	None	173.505	173.1040			2	2	Keep dry
W	Petroleum coke (*uncalcined*)	ORM-C		None	173.505	173.1045			1,2	1,2	Not permitted if temperature of material is at or above 130 deg F
	Petroleum crude. See Crude oil										
	Petroleum distillate	Combustible liquid	UN1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Petroleum distillate	Flammable liquid	UN1268	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Petroleum ether	Flammable liquid	UN1271	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Petroleum gas, liquefied. *See* Liquefied petroleum gas										
	Petroleum naphtha	Combustible liquid	UN1255	None	173.118a	None	No limit	No limit	1,2	1,2	
	Petroleum naphtha	Flammable liquid	UN1255	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
A	Phencapton	ORM-A	NA2783	None	173.505	173.510	No limit	No limit			
+E	Phenol (*RQ-1000/454*)	Poison B	UN1671	Poison	173.364	173.369	50 pounds	250 pounds	1,2	1,2	
E	Phenol, liquid *or* solution (*liquid tar acid containing over 50% phenol*) (*RQ-1000/454*)	Poison B	NA2821	Poison	173.345	173.349	1 quart	55 gallons	1,2	1,2	
	Phenoxy pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2766	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Phenoxy pesticide (*compounds and preparations*), liquid	Poison B	UN2765	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Phenoxy pesticide (*compounds and preparations*), solid	Poison B	UN2765	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
A	Phenylenediamine, meta *or* para, solid	ORM-A	UN1673	None	173.505	173.510	No limit	No limit			
	Phenyldichloroarsine	Poison B	NA1556	Poison	None	173.355	Forbidden	30 gallons	1	5	
	m-Phenylene diaminediperchlorate (dry)	Forbidden									
	Phenyltrichlorosilane	Corrosive material	UN1804	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Phenylurea pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2768	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Phenylurea pesticide (*compounds and preparations*), liquid	Poison B	UN2767	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Phenylurea pesticide (*compounds and preparations*), solid	Poison B	UN2767	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Phosgene (*diphosgene*) (*RQ-5000/2270*)	Poison A	UN1076	Poison gas	None	173.333	Forbidden	Forbidden	1	5	
	Phosphine	Poison A	UN2199	Poison gas and Flammable gas	None	173.328	Forbidden	Forbidden	1	5	
E	Phosphoric acid (*RQ-5000/2270*)	Corrosive material	UN1805	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Phosphoric acid triethyleneimine. *See* Tris-(1-aziridiyl) phosphine oxide										
	Phosphoric anhydride (*phosphorus pentoxide*)	Corrosive material	NA1807	Corrosive	None	173.188	Forbidden	100 pounds	1,2	1,2	Keep dry. Glass bottles not permitted under deck
E	Phosphorus, amorphous, red (*RQ-1/.454*)	Flammable solid	UN1338	Flammable solid	None	173.189	Forbidden	11 pounds	1,2	1,2	
	Phosphorus bromide. *See* Phosphorus tribromide										
E	Phosphorus chloride. *See* Phosphorus trichloride										
	Phosphorus heptasulfide	Flammable solid	UN1339	Flammable solid	None	173.225	Forbidden	10 pounds	1,2	1	Separate from oxidizing materials
	Phosphorus oxybromide	Corrosive material	UN1939	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Phosphorus oxychloride (*RQ-5000/2270*)	Corrosive material	UN1810	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Phosphorus pentachloride, solid	Corrosive material	UN1806	Corrosive	None	173.191	Forbidden	5 pounds	1	1	Keep dry
E	Phosphorus pentasulfide (*RQ-1000/454*)	Flammable solid	UN1340	Flammable solid and Dangerous when wet	None	173.225	Forbidden	11 pounds	1,2	1,2	Separate from oxidizing material
	Phosphorus sesquisulfide	Flammable solid	UN1341	Flammable solid and Dangerous when wet	None	173.225	Forbidden	11 pounds	1,2	1	Separate from oxidizing materials
	Phosphorus tribromide	Corrosive material	UN1808	Corrosive	None	173.270	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Phosphorus trichloride (*RQ-5000/2270*)	Corrosive material	UN1809	Corrosive	None	173.271	Forbidden	1 quart	11	1	Keep dry. Glass carboys not permitted on passenger vessels
	Phosphorus trisulfide	Flammable solid	UN1343	Flammable solid	None	173.225	Forbidden	10 pounds	1,2	1	Separate from oxidizing materials
E	Phosphorus, white *or* yellow, dry (*RQ-1/.454*)	Flammable solid	UN1381	Flammable solid and Poison	None	173.190	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Phosphorus, white *or* yellow, in water (*RQ-1/.454*)	Flammable solid	UN1381	Flammable solid and Poison	None	173.190	Forbidden	25 pounds	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Phosphorus (white or red) and a chlorate, mixtures of	Forbidden									
E	Phosphoryl chloride. *See* Phosphorus oxychloride										
	Photographic film. See Film										
	Photographic flash powder. See Fireworks, special *or* Low explosive										
	Phthalimide derivative pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2774	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Phthalimide derivative pesticide (*compounds and preparations*), liquid	Poison B	UN2773	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Phthalimide derivative pesticide (*compounds and preparations*), solid	Poison B	UN2773	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Picrate, dry. See High explosive										
	Picrate of ammonia. See High explosive										
	Picric acid, dry. See High explosive										
	Picric acid, wet, with not less than 10% water	Flammable solid	NA1344	Flammable solid	173.192	173 193	1 pound	25 pounds	1	5	Under deck stowage permitted on cargo vessels if wet with more than 30% water. Stow away from heavy metals and their compounds
	Picric acid, wet with not less than 10% water, over 25 pounds. See High explosive										
	Pinane hydroperoxide, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2162								
	Pinane hydroperoxide solution *not over 45% peroxide.*	Organic peroxide	UN2162	Organic peroxide	173.153	173.224	1 quart	1 quart	1,2	4	
	Pinene	Flammable liquid	UN2368	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pine oil	Combustible liquid	UN1272	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pinwheels. *See* Fireworks, common										
	Pivaloyl chloride. *See* Trimethylacetyl chloride										
	Plastic solvent, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Plastic solvent, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Plutonium nitrate solution	Radioactive material	NA9185	Radioactive (See 172.403)	173.393	173.396			1,2	1,2	
	Poisonous liquid *or* gas, n.o.s.	Poison A	NA9035	Poison gas	None	173.328	Forbidden	Forbidden	1	5	
	Poisonous liquid, n.o.s. *or* Poison B, liquid, n.o.s.	Poison B	NA2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Poisonous solid, corrosive, n.o.s.	Poison B	UN2928	Poison and Corrosive	173.364	173.365	25 pounds	100 pounds	1	4	
	Poisonous solid, n.o.s. *or* Poison B, solid, n.o.s.	Poison B	NA2811	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1	
	Polish, metal, stove, furniture *or* wood, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Polish, metal, stove, furniture *or* wood, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.129	1 quart	55 gallons	1,2	1	
E	Polychlorinated biphenyls (*RQ-10/4.54*)	ORM-E	UN2315	None	None	173.510	No limit	No limit	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Polymerizable material. See 173.21										
E	Potassium arsenate, solid (*RQ-1000/454*)	Poison B	UN1677	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Potassium arsenite, solid (*RQ-1000/454*)	Poison B	UN1678	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Potassium bifluoride solution. *See* Potassium hydrogen fluoride solution										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Potassium bromate	Oxidizer	UN1484	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals.
	Potassium carbonyl	Forbidden									
	Potassium chlorate (*potash chlorate*)	Oxidizer	UN1485	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals.
E	Potassium chromate (*RQ-1000/454*)	ORM-E	NA9142	None	None	173.510	No limit	No limit	1,2	1,2	
E	Potassium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1680	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Potassium cyanide solution (*RQ-10/4.54*)	Poison B	UN1680	Poison	173.345	173.352	1 quart	55 gallons	1,2	1,2	Stow away from acids
	Potassium dichloro isocyanurate. See Potassium dichloro-s-triazinetrione										
	Potassium dichloro-s-triazinetrione, *dry (containing more than 39% available chlorine)*	Oxidizer	NA2465	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
EA	Potassium dichromate (*RQ-1000/454*).	ORM-A	NA1479	None	173.505	173.510	No limit	No limit	1,2	1,2	
A	Potassium fluoride	ORM-B	UN1812	None	173.505	173.510	No limit	No limit			
	Potassium fluoride solution	Corrosive material	UN1812	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
E	Potassium hydrate. *See* Potassium hydroxide										
	Potassium hydrogen fluoride solution	Corrosive material	NA1811	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
A	Potassium hydrogen sulfate, solid	ORM-B	UN2509	None	173.505	173.800	25 pounds	100 pounds			
E	Potassium hydroxide, dry solid, flake, bead, *or* granular (*RQ-1000/454*)	Corrosive material	UN1813	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry. Do not stow with metals or alloys such as brass, copper, tin, zinc, aluminum, solder, or lead
E	Potassium hydroxide, liquid *or* solution (*RQ-1000/454*)	Corrosive material	UN1814	Corrosive	173.244	173.249	1 quart	10 gallons	1,2	1,2	
	Potassium hypochlorite solution. *See* Hypochlorite solutions containing more than 7% available chlorine by weight										
A	Potassium metabisulfite	ORM-B	NA2693	None	173.505	173.510	No limit	No limit			
	Potassium, metal *or* metallic	Flammable solid	UN2257	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Potassium, metal liquid alloy	Flammable solid	UN1420	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Potassium nitrate	Oxidizer	UN1486	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
E	Potassium nitrate mixed (*fused*) with sodium nitrite. *See* Sodium nitrite mixed (*fused*) with potassium nitrate										
	Potassium nitrite	Oxidizer	UN1488	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and cyanides. Stow away from foodstuffs
	Potassium perchlorate	Oxidizer	UN1489	Oxidizer	173.153	173.219	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
E	Potassium permanganate (*RQ-100/45.4*)	Oxidizer	UN1490	Oxidizer	173.153	173.154 173.194	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Potassium peroxide	Oxidizer	UN1491	Oxidizer	None	173.154	Forbidden	100 pounds	1,2	1,2	Keep dry
	Potassium sulfide	Flammable solid	UN1382	Flammable solid	173.153	173.207	25 pounds	200 pounds	1,2	1,2	Separate from liquid acids, flammable gases or liquids, oxidizing materials or organic peroxides
	Pressurized product. See Compressed gas, n.o.s.										
	Primer. See Cannon primer, Combination primer, *or* Small-arms primer										
	Primer, detonating. See Detonating primers										
	Projectile, explosive. See Explosive projectile										
	Projectile, gas, nonexplosive. See Chemical ammunition, nonexplosive (*containing a Poison A, Poison B or irritating material, as appropriate*).										
	Projectile, gas, smoke, or incendiary, with burster or booster with or without detonating fuze. See Explosive projectile										
	Projectile, illuminating, incendiary or smoke, with expelling charge but without bursting charge. See Fireworks, special										
	Projectile, sand-loaded, empty or solid. See 173.55										
	Propane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
E	Propargite (*RQ-10/4.54*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
	Propargyl alcohol	Flammable liquid	NA1986	Flammable liquid and Poison	None	173.119	Forbidden	1 quart	1,2	5	
	Propellant explosive	Class A explosive		Explosive A	None	173.64	Forbidden	Forbidden	6	5	
	Propellant explosive in water (*smokeless powder*)	Class B explosive		Explosive B	None	173.93	Forbidden	Forbidden	1,3	5	Magazine stowage authorized

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Propellant explosive in water, unstable, condemned, *or* deteriorated (*smokeless powder*)	Class B explosive		Explosive B	None	173.93	Forbidden	Forbidden	1,3	5	Magazine stowage authorized
	Propellant explosive, liquid	Class B explosive		Explosive B	None	173.93	Forbidden	10 pounds	1,2	5	Magazine stowage authorized
	Propellant explosive, solid	Class B explosive		Explosive B	None	173.93	Forbidden	10 pounds	1,3	5	Magazine stowage authorized
	Propionaldehyde	Flammable liquid	UN1275	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Propionic acid (*RQ-5000/2270*)	Corrosive material	UN1848	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Separated by a complete compartment or hold from organic peroxides
E	Propionic acid solution (*RQ-5000/2270*)	Corrosive material	NA1848	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Separated by a complete compartment or hold from organic peroxides
E	Propionic anhydride (*RQ-5000/2270*)	Corrosive material	UN2496	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1	Keep dry
	Propionyl peroxide, *not more than 28% in solution. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2132								
	Propionyl peroxide, more than 28% in solution	Forbidden									
	Propyl acetate	Flammable liquid	UN1276	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyl alcohol	Flammable liquid	UN1274	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1,2	
	Propylamine	Flammable liquid	UN1277	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Propyl chloride	Flammable liquid	UN1278	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Propylene *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
	Propylenediamine	Flammable liquid	UN2258	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Propylene dichloride (*RQ-5000/2270*)	Flammable liquid	UN1279	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyleneimine, inhibited	Flammable liquid	UN1921	Flammable liquid	None	173.189	Forbidden	5 pints	1,2	1	
E	Propylene oxide (*RQ-5000/2270*)	Flammable liquid	UN1280	Flammable liquid	173.118	173.119	Forbidden	1 gallon	1,3	4	
	Propyl formate	Flammable liquid	UN1281	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyl mercaptan	Flammable liquid	UN2704	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	5	
	Propyl trichlorosilane	Corrosive material	UN1816	Corrosive	None	173.290	Forbidden	10 gallons	1	1	Keep dry
	Prussic acid. See Hydrocyanic acid, as appropriate										
E	Pyrethrins (*RQ-1000/454*)	ORM-E	NA9184	None	None	173.510	No limit	No limit	1,2	1,2	
	Pyridine	Flammable liquid	UN1282	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyridine perchlorate	Forbidden									
	Pyrophoric liquid, n.o.s. *or* Pyroforic liquid, n.o.s.	Flammable liquid	UN2845	Flammable liquid	None	173.124	Forbidden	Forbidden	1	5	Shade from radiant heat. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Pyrosulfuryl chloride	Corrosive material	UN1817	Corrosive	173.244	173.247	1 quart	1 quart	1	4	Keep dry. Glass carboys not permitted on passenger vessels
	Pyroxylin plastic scrap	Flammable solid	NA2006	Flammable solid	None	173.195	Forbidden	Forbidden	1	5	Shade from radiant heat
	Pyroxylin plastics, rods, sheets, rolls, *or* tubes	Flammable solid	NA2006	Flammable solid	173.197	173.197	50 pounds	550 pounds	1,3	1	
	Pyroxylin solution	Combustible liquid	NA2059	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pyroxylin solution	Flammable liquid	NA2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyroxylin solvent, n.o.s.	Combustible liquid	NA2059	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pyroxylin solvent, n.o.s.	Flammable liquid	NA2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyrrolidine	Flammable liquid	UN1922	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,2	1	
	Quebrachitol pentanitrate	Forbidden									
	Quicklime. *See* Calcium oxide										
E	Quinoline (*RQ-1000/454*)	ORM-E	UN2656	None	None	173.510	No limit	No limit	1,2	1,2	
	Radioactive device, n.o.s.	Radioactive material	UN2911	None	173.391				1,2	1,2	
	Radioactive material, fissile, n.o.s.	Radioactive material	UN2918	Radioactive	173.393	173.420			1,2	1,2	
	Radioactive material, limited quantity, n.o.s.	Radioactive material	UN2910	None	173.391				1,2	1,2	
	Radioactive material, low specific activity *or* LSA, n.o.s.	Radioactive material	UN2912	Radioactive	173.392	173.393			1,2	1,2	
	Radioactive material, n.o.s.	Radioactive material	NA9181	Radioactive	173.393	173.425			1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/Λ/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Radioactive material, special form, n.o.s.	Radioactive material	NA9182	Radioactive	173.393	173.394			1,2	1,2	
	Rags, oily	Flammable solid	UN1856	Flammable solid	None	173.199	Forbidden	Forbidden	1,2	1,2	Keep dry. Separate from flammable gases, or liquids, oxidizing materials, or organic peroxides
	Rags, wet	Flammable solid	NA1325	Flammable solid	None	173.200	Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Railway Fusee. See Fusee										
	Railway torpedo. *See* Torpedo, railway										
	Range oil. *See* Fuel oil										
	Reducing compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint *or* varnish, removing, reducing, *or* thinning, liquid										
	Refrigerant gas. *See* Dispersant Gas										
	Refrigerating machine	Nonflammable gas	UN2857	Nonflammable gas	173.306 173.307		No limit	No limit	1,3	1,3	
	Refrigerating machine	Flammable gas	NA1954	Flammable gas	173.306		No limit	No limit	1,3	1,3	
	Refrigerating machine	Flammable liquid	NA1993	Flammable liquid	173.130 173.306		No limit	No limit	1,2	1	
	Removing compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid										
	Resin solution (*resin compound, liquid*)	Combustible liquid	UN2868	None	173.118a	None	No limit	No limit	1,2	1,2	
	Resin solution (*resin compound, liquid*)	Flammable liquid	UN1866	Flammable liquid	173.118	173.119	1 quart	55 gallons	1,2	1	
E	Resorcinol (*RQ-5000/2270*)	ORM-E	UN2876	None	None	173.510	No limit	No limit	1,2	1,2	
	Rifle grenade. See Grenade, hand *or* rifle, explosive										
	Rifle powder. See Propellant explosive *or* Black powder										
	Road asphalt *or* tar, liquid *See* Asphalt, cut back										
	Road asphalt *or* tar (*when heated to or above its flash point*). *See* Asphalt										
	Road oil	Combustible liquid	NA1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Rocket ammunition with empty projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket ammunition with explosive projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with gas projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with illuminating projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with incendiary projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with inert loaded projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket ammunition with smoke projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with solid projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket body, with electric primer or electric squib. See 173.55										
	Rocket engine, liquid	Class B explosive		Explosive B	None	173.95	Forbidden	Forbidden	1,2	5	Magazine stowage authorized
	Rocket fireworks. See Fireworks, common										
	Rocket head. *See* Explosive projectile										
	Rocket motor	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Rocket motor	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Roman candle. See Fireworks, common										
W	Rosin (*colaphony*) *or* Resin	ORM-C		None	173.505	173.1060			1,2	1,2	
	Rough ammoniate tankage (*7% or more moisture content*)	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Temperature of tankage must not exceed 100 deg F
	Rough ammoniate tankage (*less than 7% moisture content*)	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1	5	
W	Rubber curing compound (*solid*)	ORM-C		None	173.505	173.1065			1,2	1,2	
	Rubber scrap *or* Rubber buffings	Flammable solid	NA1345	Flammable solid	173.153	173.201	10 pounds	10 pounds	1,2	1,2	
	Rubber shoddy *or* Rubber, regenerated *or* Rubber, reclaimed	Flammable solid	NA1345	Flammable solid	173.153	173.201	10 pounds	10 pounds	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Rubidium metal	Flammable solid	UN1423	Flammable solid and Dangerous when wet	None	173.206	Forbidden	225 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Rubidium metal, in cartridges	Flammable solid	NA1423	Flammable solid and Dangerous when wet	173.206		1 pound	25 pounds	1,2	4	Segregation same as for flammable solid labeled Dangerous When Wet
	Rum, denatured	Flammable liquid	NA1986	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Rust preventive coating	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Safety fuse. *See* Fuse, safety										
	Safety squib	Class C explosive		Explosive C	None	173.108	50 pounds	150 pounds	1,3	1,3	
	Salute. See Fireworks common *or* special										
	Sand acid. *See* Hydrofluorosilicic acid										
W	Sawdust (*when dry, clean, and free from oil*)	ORM-C		None	173.505	173.1070			1,2	1,2	Keep dry
	Selenic acid, liquid	Corrosive material	UN1905	Corrosive	None	173.245	Forbidden	5 pints	1,2	1,2	
	Selenium nitride	Forbidden									
E	Selenium oxide (*RQ-1000/454*)	Poison B	NA2811	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Self-lighting cigarette	Flammable solid	NA1325	Flammable solid	173.21		Forbidden	Forbidden	1,2	1,2	Keep dry
	Self propelled vehicle. *See* Motor vehicle										
	Shaped charge, commercial. See High explosive (*173.65(h)*)										
	Shaped charges (commercial) containing more than 8 ounces of explosives	Forbidden									
	Shellac. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish; *etc.*										
	Shell, fireworks. *See* Fireworks, common *or* special										
	Ship, distress signal. See Fireworks, special										
	Signal flare	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,2	1,2	
	Silicofluoric acid. *See* Hydrofluorosilicic acid										
	Silicon chloride *or* Silicon tetrachloride	Corrosive material	UN1818	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Silicon chrome, exothermic. *See* Ferrochrome, exothermic										
+	Silicon tetrafluoride	Nonflammable gas	UN1859	Nonflammable gas	173.308	173.302	Forbidden	300 pounds	1	4	Stow away from foodstuffs
	Silver acetylide (dry)	Forbidden									
	Silver azide (dry)	Forbidden									
	Silver chlorite (dry)	Forbidden									
+	Silver cyanide	Poison B	UN1684	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Silver fulminate (dry)	Forbidden									
E	Silver nitrate (*RQ-1/.454*)	Oxidizer	UN1493	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
	Silver oxalate (dry)	Forbidden									
	Silver picrate (dry)	Forbidden									
	Sisal. See Fibers										
	Sludge acid. *See* Acid, sludge										
	Small arms ammunition	Class C explosive		None	173.101		50 pounds	150 pounds	1,3	1,3	
	Small arms ammunition, irritating (*tear gas*) cartridge	Class C explosive		Irritant	None	173.101	Forbidden	150 pounds	1,3	1,3	
	Small arms primer	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	1,3	
	Smoke candle	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,3	1,3	
	Smoke generator. See Chemical ammunition, nonexplosive (*containing a Poison A, Poison B, or irritating material, as appropriate*)										
	Smoke grenade	Class C explosive		Explosive C	None	173.108	50 pounds	150 pounds	1,3	1,3	
	Smokeless powder for cannon or small arms. See Propellant explosive, *Class A or B, as appropriate*										
	Smokeless powder for small arms (*100 pounds or less*)	Flammable solid	NA1325	Flammable solid	173.88	173.197a	Forbidden	Forbidden	1,3	1,3	Segregation same as for explosives
	Smoke pot	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,3	1,3	
	Smoke projectile with bursting charge. See Explosive projectile										
	Smoke projectile with expelling charge but without bursting charge. See Fireworks, special										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Smoke signal	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,3	1,3	
	Soda amatol. See High explosive										
	Soda lime, solid	Corrosive material	UN1907	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Sodium acid sulfate, solid *or* solution. *See appropriate* Sodium hydrogen sulfate *entry*										
A	Sodium aluminate, solid	ORM-B	UN2812	None	173.505	173.800	25 pounds	100 pounds			
	Sodium aluminate solution	Corrosive material	UN1819	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
	Sodium aluminum hydride	Flammable solid	UN2835	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Sodium amide	Flammable solid	UN1425	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium arsenate (*RQ-1000/454*)	Poison B	UN1685	Poison	173.364	173.365 173.368	50 pounds	200 pounds	1,2	1,2	
E	Sodium arsenite (*solution*), liquid (*RQ-1000/454*)	Poison B	UN1686	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
+	Sodium azide	Poison B	UN1687	Poison	173.364	173.375	50 pounds	100 pounds	1,2	1,2	Stow away from heavy metals, especially lead and its compounds. Stow separate from acids
E	Sodium bifluoride, solid (*RQ-5000/2270*)	Corrosive material	UN2439	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
E	Sodium bifluoride, solution (*RQ-5000/2270*)	Corrosive material	UN2439	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
	Sodium bisulfate, solid *or* solution. *See* Sodium hydrogen sulfate, solid *or* solution										
E	Sodium bisulfite, solid. *See* Sodium hydrogen sulfite, solid										
	Sodium bromate	Oxidizer	UN1494	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorate (*soda chlorate*)	Oxidizer	UN1495	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,3	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorite	Oxidizer	UN1496	Oxidizer	None	173.160	Forbidden	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorite solution (*not exceeding 42% sodium chlorite*)	Corrosive material	UN1908	Corrosive	173.244	173.263	1 quart	4 gallons	1,2	1	Glass carboys in hampers not permitted under deck
E	Sodium chromate (*RQ-1000/454*)	ORM-E	NA9145	None	None	173.510	No limit	No limit	1,2	1,2	
E	Sodium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1689	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Sodium cyanide solution (*RQ-10/4.54*)	Poison B	UN1689	Poison	173.345	173.352	1 quart	55 gallons	1,2	1,2	Stow away from acids
	Sodium dichloroisocyanurate. *See* Sodium dichloro-s-triazinetrione										
	Sodium dichloro-s-triazinetrione (*dry, containing more than 39% available chlorine*)	Oxidizer	UN2465	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
EA	Sodium dichromate (*RQ-1000/454*)	ORM-A	NA1479	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Sodium dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9146	None	None	173.510	No limit	No limit	1,2	1,2	
EA	Sodium fluoride, solid (*RQ-5000/2270*)	ORM-B	UN1690	None	173.505	173.510	No limit	No limit	1,2	1,2	
E	Sodium fluoride solution (*RQ-5000/2270*)	Corrosive material	NA1690	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Stow away from acids
E	Sodium hydrate. *See* Sodium hydroxide										
	Sodium hydride	Flammable solid	UN1427	Flammable solid and Dangerous when wet	None	173.198	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
A	Sodium hydrogen sulfate, solid	ORM-B	UN1821	None	173.505	173.800	25 pounds	100 pounds			
	Sodium hydrogen sulfate solution	Corrosive material	UN2837	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
EA	Sodium hydrogen sulfite, solid (*RQ-5000/2270*)	ORM-B	NA2693	None	173.505	173.800	25 pounds	100 pounds	1,2	1,2	
E	Sodium hydrosulfide, solid (*RQ-5000/2270*)	Flammable solid	UN2318	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
E	Sodium hydrosulfide, solution (*RQ-5000/2270*)	Corrosive material	NA2922	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
	Sodium hydrosulfite (*sodium dithionite*)	Flammable solid	UN1384	Flammable solid	173.153	173.204	25 pounds	100 pounds	1,2	1,2	Keep dry. Below deck stowage in metal drums only. Separate from flammable gases, liquids, oxidizing materials, or organic peroxides
E	Sodium hydroxide, dry solid, flake, bead, *or* granular (*RQ-1000/454*)	Corrosive material	UN1823	Corrosive	173.244	173.245b	25 pounds	200 pounds	1,2	1,2	Keep dry
E	Sodium hydroxide, liquid *or* solution (*RQ-1000/454*)	Corrosive material	UN1824	Corrosive	173.244	173.249	1 quart	5 gallons	1,2	1,2	
E	*Sodium hypochlorite. See* Hypochlorite solution *or* Hypochlorite solution containing not more than 7% available chlorine										
A	Sodium metabisulfite	ORM-B	NA2693	None	173.505	173.510	No limit	No limit			

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Sodium, metal *or* metallic (*RQ-1000/454*)	Flammable solid	UN1428	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium, metal dispersion in organic solvent (*RQ-1000/454*)	Flammable solid	UN1429	Flammable solid and Dangerous when wet	None	173.230	Forbidden	10 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium, metal liquid alloy (*RQ-1000/454*)	Flammable solid	NA1421	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Combustible liquid	NA1289	None	173.118a	None	No limit	No limit	1,2	1,2	
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Flammable liquid	NA1289	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Corrosive material	NA1289	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
E	Sodium methylate, dry (*RQ-1000/454*)	Flammable solid	UN1431	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1	Segregation same as for flammable solids labeled Dangerous When Wet
	Sodium monoxide, solid	Corrosive material	UN1825	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	Keep dry
	Sodium nitrate	Oxidizer	UN1498	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Sodium nitrate bags. See Bags, sodium nitrate, empty and unwashed										
E	Sodium nitrite (*RQ-100/45.4*)	Oxidizer	UN1500	Oxidizer	173.153	173.234	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and cyanides. Bagged material not permitted on passenger vessels
E	Sodium nitrite mixed (*fused*) with potassium nitrate (*RQ-100/45.4*)	Oxidizer	UN1487	Oxidizer	173.153	173.183	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and cyanides
E	Sodium nitrite mixture (*sodium nitrate, sodium nitrite, and potassium nitrate*) (*RQ-100/45.4*)	Oxidizer	NA1487	Oxidizer	173.153	173.234	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and cyanides
A	Sodium pentachlorophenate	ORM-A	UN2567	None	173.505	173.510	No limit	No limit			
	Sodium perchlorate	Oxidizer	UN1502	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
	Sodium permanganate	Oxidizer	UN1503	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Sodium peroxide	Oxidizer	UN1504	Oxidizer	None	173.187	Forbidden	100 pounds	1,2	1	Keep dry. Stow away from powdered metals, permanganates, combustible packing of other cargo, and combustible foodstuffs
	Sodium phenolate, solid	Corrosive material	UN2497	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	
E	Sodium phosphate, dibasic (*RQ-5000/2270*)	ORM-E	NA9147	None	None	173.510	No limit	No limit	1,2	1,2	
E	Sodium phosphate, tribasic (*RQ-5000/2270*)	ORM-E	NA9148	None	None	173.510	No limit	No limit	1,2	1,2	
	Sodium phosphide	Flammable solid	UN1432	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1	5	
	Sodium picramate, wet (*with at least 20% water*)	Flammable solid	UN1349	Flammable solid	None	173.205	Forbidden	25 pounds	1,2	5	Stow away from heavy metals, especially lead, and its compounds
	Sodium picryl peroxide	Forbidden									
	Sodium potassium alloy (liquid)	Flammable solid	UN1422	Flammable solid and Dangerous when wet	None	173.202	Forbidden	25 pounds	1,2	5	Under deck stowage must be readily accessible. Segregation same as for flammable solid labeled Dangerous when wet.
	Sodium potassium alloy (solid)	Flammable solid	UN1422	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Under deck stowage must be readily accessible. Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium selenite (*RQ-1000/454*)	Poison B	UN2630	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Sodium sulfide, anhydrous	Flammable solid	UN1385	Flammable solid	173.153	173.207	25 pounds	300 pounds	1,2	1,2	Stow separate from liquid acids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Sodium tetranitride	Forbidden									
	Solvent, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Solvent, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Sparklers. See Fireworks, common										
	Spent iron mass. See Iron mass, spent										
	Spent iron sponge. See Iron sponge, spent										
	Spent mixed acid. See Nitrating acid, spent										
	Spent sulfuric acid. See Sulfuric acid, spent										
	Spirits of nitroglycerin, (*1 to 10%*)	Flammable liquid	NA1204	Flammable liquid	None	173.133	Forbidden	6 quarts	1,2	5	Segregation same as for explosives
	Spirits of nitroglycerin, not exceeding 1% nitroglycerin by weight	Flammable liquid	NA1204	Flammable liquid	173.118	173.133	1 quart	6 quarts	1,2	1	
E	Spirits of salt. *See* Hydrochloric acid										
	Sporting powder. See Black powder *or* Propellant explosive, solid										
	Spray starting fluid. See Engine starting fluid										
	Spreader cartridge. See Fireworks, special										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Squib, electric or safety. See Electric squib *or* Safety squib										
	Stain. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish; *etc.*										
	Stannic phosphide	Flammable solid	UN1433	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1	5	Segregation same as for flammable solid labeled Dangerous When Wet
A	Stannous chloride, solid	ORM-B	NA1759	None	173.505	173.510	No limit	No limit			
	Starter cartridge	Class B explosive		Explosive B	None	173.92	Forbidden	200 pounds	1,3	5	
	Starter cartridge	Class C explosive		Explosive C	None	173.102	50 pounds	150 pounds	1,3	1,3	
	Storage battery, wet. See Battery, electric storage, wet										
	Straw. *See* Hay										
	Strontium arsenite, solid	Poison B	UN1691	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Strontium chlorate	Oxidizer	UN1506	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
	Strontium chlorate, wet	Oxidizer	UN1506	Oxidizer	173.153	173.163	25 pounds	200 pounds	1,2	1,2	Stow separate from ammonium compounds. Stow away from powdered metals
E	Strontium chromate (*RQ-1000/454*)	ORM-E	NA9149	None	None	173.510	No limit	No limit	1,2	1,2	
	Strontium nitrate	Oxidizer	UN1507	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Strontium peroxide	Oxidizer	UN1509	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
E	Strychnine salt, solid (*RQ-10/4.54*)	Poison B	UN1692	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Strychnine, solid	Poison B	UN1692	Poison	173.364	173.365	Forbidden	200 pounds	1,2	1,2	
	Styphnate of lead. See Initiating explosive										
E	Styrene monomer, inhibited (*RQ-1000/454*)	Flammable liquid	UN2055	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Substituted nitrophenol pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2780	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Substituted nitrophenol pesticide (*compounds and preparations*), liquid	Poison B	UN2779	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Substituted nitrophenol pesticide (*compounds and preparations*), solid	Poison B	UN2779	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Succinic acid peroxide	Organic peroxide	UN2135	Organic peroxide	173.153	173.157 173.158	Forbidden	25 pounds	1	1	
	Succinic acid peroxide, *technically pure. See* Succinic acid peroxide.		UN2135								
	Sucrose octanitrate (dry)	Forbidden									
	Sulfur and chlorate, loose mixtures of	Forbidden									
E	Sulfur chloride (*mono and di*) (*RQ-1000/454*)	Corrosive material	UN1828	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Sulfur dioxide	Nonflammable gas	UN1079	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow away from living quarters
	Sulfur flower. *See* Sulfur, solid										
	Sulfur hexafluoride	Nonflammable gas	UN1080	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1,2	1,2	
E	Sulfuric acid (*For fuming sulfuric acid, see* Oleum) (*RQ-1000/454*)	Corrosive material	UN1830	Corrosive	173.244	173.272	1 quart	1 gallon	1	1	Keep dry. Under deck stowage is permitted on cargo vessels only in metal drums
E	Sulfuric acid, spent (*RQ-1000/454*)	Corrosive material	UN1832	Corrosive	None	173.248	Forbidden	1 quart	1	1	Under deck stowage is permitted on cargo vessels only in metal drums
	Sulfuric anhydride. *See* Sulfur trioxide										
	Sulfurous acid	Corrosive material	UN1833	Corrosive	173.244	173.245	2 gallons	2 gallons	1,2	1	Glass carboys in hampers not permitted under deck
W	Sulfur, solid	ORM-C	UN1350	None	173.505	173.1080			1,2	1,2	Protect from sparks and open flame. Stow separate from oxidizing materials. Segregation same as for flammable solids
	Sulfur trioxide	Corrosive material	UN1829	Corrosive	173.244	173.273	Forbidden	1 gallon	1,2	1,2	Keep dry. Glass bottles not permitted under deck
	Sulfuryl chloride	Corrosive material	UN1834	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Sulfuryl fluoride	Nonflammable gas	UN2191	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,3	1	
	Sulphur. *See* Sulfur, solid										
	Supplementary charge (explosive)	Class A explosive		Explosive A	None	173.69	Forbidden	Forbidden	6	5	
EA	2,4,5-T. *See* 2,4,5-Trichlorophenoxyacetic acid.										
E	2,4,5-T amine, ester, *or* salt. *See* 2,4,5-Trichlorophenoxyacetic acid, amine, ester, *or* salt										
	Tankage. See Garbage tankage										
	Tankage fertilizer	Flammable solid	NA1325	Flammable solid	None	173.209	Forbidden	Forbidden	1	5	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Tankage, rough ammoniate	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1	5	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Tank car, containing residual phosphorus and filled with water or inert gas. See 173.190										
	Tank car, empty (*previously used for a hazardous material*), *See 173.29*										
	Tank car, empty (*previously used for a Poison A material*), *See 172.510 and 173.29*										
	Tank, portable, empty (*previously used for a hazardous material*). *See 172.510, 172.514 and 173.29*										
	Tank truck, empty. *See 172.510, 172.514 and 173.29*										
	Tar, liquid	Combustible liquid	UN1999	None	173.118a	None	No limit	No limit	1,2	1,2	
	Tar, liquid	Flammable liquid	UN1999	Flammable liquid	173.118	173.131	1 quart	10 gallons	1,2	1	
EA	TDE (*1,1-Dichloro-2,2-bis(p-chlorophenyl) ethane*) (*RQ-1/0.454*)	ORM-A	NA2761	None	173.505	173.510	50 pounds	No limit	1,2	1,2	
	Tear gas ammunition. See Chemical ammunition, nonexplosive *(containing an irritant material)*										
	Tear gas candle	Irritating material	UN1700	Irritant	None	173.355	Forbidden	75 pounds	1	5	Stow away from living quarters
	Tear gas cartridge. See Small arms ammunition, irritating (*tear gas*) cartridge										
	Tear gas grenade. See Grenade, tear gas										
	Tertiary alcohol. See Alcohol, n.o.s.										
	Tetraazido benzene quinone	Forbidden									
AW	Tetrachloroethane	ORM-A	UN1702	None	173.505	173.630	1 quart	10 gallons	1,2	1,2	
A	Tetrachloroethylene *or* Perchloroethylene	ORM-A	UN1897	None	173.505	173.605	10 gallons	55 gallons			
	Tetraethylammonium perchlorate (dry)	Forbidden									
	Tetraethyl dithiopyrophosphate and compressed gas mixture	Poison A	UN1703	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from living quarters. Segregation same as for nonflammable gases
	Tetraethyl dithiopyrophosphate, liquid	Poison B	UN1704	Poison	None	173.358	Forbidden	1 quart	1	5	
	Tetraethyl dithiopyrophosphate mixture, dry	Poison B	UN1704	Poison	None	173.377	Forbidden	200 pounds	1	5	
	Tetraethyl dithiopyrophosphate mixture, liquid	Poison B	UN1704	Poison	None	173.359	Forbidden	1 quart	1	5	
E	Tetraethyl lead, liquid (*including flash point for export shipment by water*) (*RQ-100/45.4*)	Poison B	NA1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flash point is 141 deg F. or less, segregation must be the same as for flammable liquids
E	Tetraethyl pyrophosphate and compressed gas mixture (*RQ-100/45.4*)	Poison A	UN1705	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from living quarters. Segregation same as for nonflammable gases
E	Tetraethyl pyrophosphate, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1,2	5	
E	Tetraethyl pyrophosphate mixture, dry (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1,2	5	
E	Tetraethyl pyrophosphate mixture, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1,2	5	
+	Tetrafluoroethylene, inhibited	Flammable gas	UN1081	Flammable gas	173.306	173.304	Forbidden	300 pounds	1,2	1,2	Stow away from living quarters
	1,2,3,6-Tetrahydrobenzaldehyde	Corrosive material	UN2498	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Tetrahydrofuran	Flammable liquid	UN2056	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Tetralin hydroperoxide, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2136								
	Tetramethylammonium hydroxide, liquid	Corrosive material	UN1835	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	1,1,3,3-Tetramethylbutyl hydroperoxide, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2160								
	1,1,3,3-Tetramethylbutyl peroxy-2-ethylhexanoate, *technically pure. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2161								
	Tetramethylene diperoxide dicarbamide	Forbidden									
A	Tetramethylmethylenediamine	ORM-A	NA9069	None	173.505	173.510	No limit	No limit			
	Tetranitro diglycerin	Forbidden									
	Tetranitromethane	Oxidizer	UN1510	Oxidizer	None	173.203	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from foodstuffs
	2,3,4,6-Tetranitrophenol	Forbidden									
	2,3,4,6-Tetranitrophenyl methyl nitramine	Forbidden									
	2,3,4,6-Tetranitrophenylnitramine	Forbidden									
	Tetranitroresorcinol (dry)	Forbidden									
	2,3,5,6-Tetranitroso-1,4-dinitrobenzene	Forbidden									
	2,3,5,6-Tetranitroso nitrobenzene (dry)	Forbidden									
	Tetrazene (guanyl nitrosamino guanyltetrazene). See Initiating explosive										
	Tetrazine (dry)	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Tetrazolyl azide (dry)	Forbidden									
	Tetryl. See High explosive										
	Textile treating compound *or* mixture, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245 173.249a	1 quart	10 gallons	1,2	1,2	
	Textile waste. *See* Cotton waste										
	Textile waste, wet	Flammable solid	UN1857	Flammable solid	None	173.211	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Thallium salt, solid, n.o.s.	Poison B	NA1707	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Thallium sulfate, solid (*RQ-1000/454*)	Poison B	NA1707	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Thinner for rust preventive coating. *See* Rust preventive coating										
	Thinning compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint *or* varnish, removing, reducing *or* thinning, liquid										
	Thiocarbonylchloride. See Thiophosgene										
	Thioglycolic acid	Corrosive material	UN1940	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	Glass carboys in hampers not permitted under deck
	Thionyl chloride	Corrosive material	UN1836	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
+	Thiophosgene	Poison B	UN2474	Poison	None	173.356	Forbidden	1 gallon	1	5	Shade from radiant heat
	Thiophosphoryl chloride	Corrosive material	UN1837	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
A	Thiram	ORM-A	NA2771	None	173.505	173.510	No limit	No limit			
	Thorium metal, pyrophoric	Radioactive material	NA9170	Radioactive and Flammable solid	173.226	173.226			1,2	1,2	
	Thorium nitrate	Radioactive material	NA9171	Radioactive and Oxidizer	173.392	173.393			1,2	1,2	Separate longitudinally by a complete hold or compartment from explosives
	Time fuze. See Fuze, time										
	Tin chloride, fuming. *See* Tin tetrachloride, anhydrous										
	Tinning flux. *See* Zinc chloride solution										
	Tin perchloride. *See* Tin tetrachloride, anhydrous										
	Tin tetrachloride, anhydrous	Corrosive material	UN1827	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Titanium metal powder, dry *or* wet *with less than 20% water*	Flammable solid	NA2546	Flammable solid	None	173.208	Forbidden	75 pounds	1,2	5	
	Titanium metal powder, wet with 20% or more water	Flammable solid	NA1352	Flammable solid	None	173.208	Forbidden	150 pounds	1,2	5	
	Titanium sulfate solution *containing not more than 45% sulfuric acid*	Corrosive material	NA1760	Corrosive	173.244	173.297	1 quart	1 gallon	1	4	Shade from radiant heat. Keep dry
	Titanium tetrachloride	Corrosive material	UN1838	Corrosive	173.244	173.247	1 quart	10 gallons	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Toluene (*toluol*) (*RQ-1000/454*)	Flammable liquid	UN1294	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
A	Toluenediamine	ORM-A	NA1709	None	173.505	173.510	No limit	No limit			
+	Toluene diisocyanate	Poison B	UN2078	Poison	173.345	173.346	Forbidden	55 gallons	1,3	1,3	Shade from radiant heat
	Toluene sulfonic acid, liquid	Corrosive material	NA2584	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Torch. See Fireworks, common										
	Torpedo, railway	Class B explosive		Explosive B	None	173.91	Forbidden	200 pounds	1,2	1,2	Passenger vessels in metal lockers only
EA	Toxaphene (*RQ-1/0.454*)	ORM-A	NA2761	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
	Toy caps	Class C explosive		Explosive C	None	173.100 173.109	50 pounds	150 pounds	1,3	1,3	
	Toy propellant device	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,3	1,3	
	Toy smoke device	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,3	1,3	
	Toy torpedo. See Fireworks, special										
E	2,4,5-TP. *See* 2,4,5-Trichlorophenoxypropionic acid										
E	2,4,5-TP ester. *See* 2,4,5-Trichlorophenoxypropionic acid ester										
	Tracer	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Tracer fuze	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,3	1,3	
	Tractor. *See* Motor vehicle										
	Trailer *or* truck body with refrigeration *or* heating equipment. *See* Motor vehicle										
	Treated paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material										
	Treated textile (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material.										

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Triazine pesticide (*compounds and preparations*), liquid	Flammable liquid	UN2764	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Triazine pesticide (*compounds and preparations*), liquid	Poison B	UN2763	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Triazine pesticide (*compounds and preparations*), solid	Poison B	UN2763	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Tri-(b-nitroxyethyl)ammonium nitrate	Forbidden									
EA	Trichlorfon (*RQ-1000/454*)	ORM-A	NA2783	None	173.505	173.510	50 pounds	200 pounds	1,2	1,2	
	Trichloroacetic acid, solid	Corrosive material	UN1839	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1	
	Trichloroacetic acid solution	Corrosive material	UN2564	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
A	1,1,1-Trichloroethane	ORM-A	UN2831	None	173.505	173.510	10 gallons	55 gallons			
EA	Trichloroethylene (*RQ-1000/454*)	ORM-A	UN1710	None	173.505	173.505	10 gallons	55 gallons	1,2	1,2	
	Trichloromethyl perchlorate	Forbidden									
EA	Trichlorophenol (*RQ-10/4.54*)	ORM-A	NA2020	None	173.505	173.510	100 pounds	No limit	1,2	1,2	
EA	2,4,5-Trichlorophenoxyacetic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	173.505	173.510	50 pounds	No limit	1,2	1,2	
E	2,4,5-Trichlorophenoxyacetic acid amine, ester, or salt (*RQ-100/45.4*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
EA	2,4,5-Trichlorophenoxypropionic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	173.505	173.510	50 pounds	No limit	1,2	1,2	
E	2,4,5-Trichlorophenoxypropionic acid ester (*RQ-100/45.4*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
	Trichlorosilane	Flammable liquid	UN1295	Flammable liquid	None	173.118	Forbidden	10 gallons	1	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Trichloro-s-triazinetrione *dry, containing over 39% available chlorine*	Oxidizer	UN2468	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,3	1,3	Keep dry
	(mono-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry (*containing over 39% available chlorine*)	Oxidizer	NA2468	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,3	1,3	Keep dry
	Trick matches	Class C explosive		Explosive C	None	173.111	Forbidden	Forbidden	1,3	1,3	
	Trick noise maker, explosive	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,3	1,3	
E	Triethanolamine dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9151	None	None	173.510	No limit	No limit	1,2	1,2	
E	Triethylamine (*RQ-5000/2270*)	Flammable liquid	UN1296	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Trifluorochlorethylene	Flammable gas	UN1082	Flammable gas	173.306	173.304 173.314	Forbidden	10 gallons	1,2	1	
	Triformoxime trinitrate	Forbidden									
	1,3,5-Trimethyl-2,4,6-trinitrobenzene	Forbidden									
	Trimethylacetyl chloride	Corrosive material	UN2438	Corrosive	173.244	173.247	1 quart	1 quart	1,2	1,2	
E	Trimethylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1083	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
E	Trimethylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	UN1297	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	Stow away from mercury and mercury compounds
	Trimethylchlorosilane	Flammable liquid	UN1298	Flammable liquid	None	173.155	Forbidden	10 gallons	1,2	1	
	Trimethylene glycol diperchlorate	Forbidden									
	Trimethylol nitromethane trinitrate	Forbidden									
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden									
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden									
	Trinitroacetic acid	Forbidden									
	Trinitroacetonitrile	Forbidden									
	Trinitroamine cobalt	Forbidden									
	Trinitrobenzene, dry. See High explosive										
	Trinitrobenzene, wet *containing at least 10% water*	Flammable solid	UN1354	Flammable solid	173.212		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Trinitrobenzene, wet, containing at least 10% water, over 16 ounces in one outside packaging. See High explosive										
	Trinitrobenzoic acid, dry. See High explosive										
	Trinitrobenzoic acid, wet, *containing at least 10% water*	Flammable solid	UN1355	Flammable solid	173.192	173.193	1 pound	25 pounds	1	5	Stow away from heavy metals and their compounds
	Trinitrobenzoic acid, wet, containing at least 10% water, over 25 pounds in one outside packaging. See High explosives										
	Trinitroethanol	Forbidden									
	Trinitroethylnitrate	Forbidden									
	Trinitromethane	Forbidden									
	1,3,5-Trinitronaphthalene	Forbidden									
	2,4,6-Trinitrophenyl guanidine (dry)	Forbidden									
	2,4,6-Trinitrophenyl nitramine	Forbidden									
	2,4,6-Trinitrophenyl trimethylol methyl nitramine trinitrate (dry)	Forbidden									

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Trinitroresorcinol. See High explosive										
	2,4,6-Trinitroso-3-methyl nitraminoanisole	Forbidden									
	Trinitrotetramine cobalt nitrate	Forbidden									
	Trinitrotoluene, dry. See High explosive										
	Trinitrotoluene, wet *containing at least 10% water*	Flammable solid	UN1356	Flammable solid	173.212		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Trinitrotoluene, wet, containing at least 10% water, over 16 ounces in one outside packaging. See High explosive										
	Tris-(1-aziridinyl) phosphine oxide	Corrosive material	UN2501	Corrosive	173.244	173.299a	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Tris, bis-bifluoroamino diethoxy propane (TVOPA)	Forbidden									
	Tungsten hexafluoride	Corrosive material	UN2196	Corrosive	None	173.284	Forbidden	110 pounds	1	5	Segregation same as for nonflammable gases.
	Turpentine	Combustible liquid	UN1299	None	173.118a	None	No limit	No limit	1,2	1,2	
	Turpentine	Flammable liquid	UN1299	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Turpentine substitute	Combustible liquid	UN1300	None	173.118a	None	No limit	No limit	1,2	1,2	
	Turpentine substitute	Flammable liquid	UN1300	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
W	Twisted jute packing *(rope) (treated or untreated). See* Oakum										
	Uranium hexafluoride, fissile *(containing more than 0.7% U-235)*	Radioactive material	NA9173	Radioactive and Corrosive	173.393	173.396			1,2	1,2	
	Uranium hexafluoride, low specific activity *(containing 0.7% or less U-235)*	Radioactive material	NA9174	Radioactive and Corrosive	173.392	173.393			1,2	1,2	
	Uranium metal, pyrophoric	Radioactive material	NA9175	Radioactive and Flammable solid	173.392	173.393 173.396			1,2	1,2	
E	Uranyl acetate *(RQ-5000/2270)*	Radioactive material	NA9180	Radioactive material	173.391	173.395			1,2	1,2	
E	Uranyl nitrate hexahydrate solution	Radioactive material	NA9178	Radioactive and Corrosive	173.392	173.393 173.395 173.396			1,2	1,2	
E	Uranyl nitrate, solid *(RQ-5000/2270)*	Radioactive material	NA9177	Radioactive and Oxidizer	173.392	173.393 173.396			1,2	1,2	Separate longitudinally by an intervening hold or compartment from explosives
	Urea nitrate, dry. See High explosive										
	Urea nitrate, wet *with 10% or more water*	Flammable solid	NA1357	Flammable solid	173.192	173.193	1 pound	25 pounds	1,2	1,2	
	Urea nitrate, wet with 10% or more water, over 25 pounds in one outside packaging. See High explosive										
	Urea peroxide	Organic peroxide	NA1511	Organic peroxide	173.153	173.227	2 pounds	25 pounds	1	4	Keep dry. Shade from radiant heat
	Valeric acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Valeryl chloride	Corrosive material	UN2502	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	
	Vanadium oxytrichloride	Corrosive material	UN2443	Corrosive	173.244	173.247a	Forbidden	1 quart	1	4	Shade from radiant heat
	Vanadium oxytrichloride and titanium tetrachloride mixture	Corrosive material	NA2443	Corrosive	None	173.245 173.245a	Forbidden	1 quart	1	4	Shade from radiant heat
E	Vanadium pentoxide *(RQ-1000/454)*	ORM-E	UN2862	None	None	173.510	No limit	No limit	1,2	1,2	
	Vanadium tetrachloride	Corrosive material	UN2444	Corrosive	173.244	173.247a	Forbidden	1 quart	1	4	Shade from radiant heat
E	Vanadyl sulfate *(RQ-1000/454)*	ORM-E	NA9152	None	None	173.510	No limit	No limit	1,2	1,2	
	Varnish. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish; *etc.*										
	Varnish drier. See Paint drier, liquid										
	Varnish remover or reducer. See Compound, lacquer, paint *or* varnish, removing, reducing, *or* thinning, liquid										
	Varnish thinning compound. See Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid										
	Very signal cartridge	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,3	1,3	
E	Vinyl acetate *(RQ-1000/454)*	Flammable liquid	UN1301	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Vinyl chloride	Flammable gas	UN1086	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow away from living quarters
	Vinyl ethyl ether, inhibited	Flammable liquid	UN1302	Flammable liquid	None	173.119	Forbidden	1 gallon	1,3	5	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Vinyl fluoride, inhibited	Flammable gas	UN1860	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
E	Vinylidene chloride, inhibited (*RQ-5000/2270*)	Flammable liquid	UN1303	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Vinyl isobutyl ether	Flammable liquid	UN1304	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Vinyl methyl ether	Flammable gas	UN1087	Flammable gas	173.306	173.304 173.314	Forbidden	20 pounds	1,2	1	Stow away from living quarters
	Vinyl nitrate polymer	Forbidden									
	Vinyl trichlorosilane	Flammable liquid	UN1305	Flammable liquid	None	173.135	Forbidden	10 gallons	1,2	1	
	Vitriol, oil of. See Sulfuric acid										
	War head. See Explosive projectile										
	Waste, hazardous. See Hazardous waste, liquid *or* solid, n.o.s.*										
	Waste paper, wet	Flammable solid	NA1325	Flammable solid	None	173.186	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Waste textile, wet	Flammable solid	UN1857	Flammable solid	None	173.211	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Waste wool, wet	Flammable solid	UN1387	Flammable solid	None	173.213	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Water pump system *tank charged with compressed air or nitrogen*	Nonflammable gas	NA1956	None	173.306		Forbidden	Forbidden	1,2	1,2	
	Water reactive solid, n.o.s.	Flammable solid	UN2813	Flammable solid and Dangerous when wet	173.153	173.154	Forbidden	25 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Water treatment compounds, liquid	Corrosive material	NA1760	Corrosive	173.244	173.249	1 quart	10 gallons	1	1	
	Wax, liquid	Combustible liquid	NA1993	None	173.116a	None	No limit	No limit	1,2	1,2	
	Wet hair. See Hair, wet										
	Wet textile waste. *See* Waste textile, wet										
E	White acid (*ammonium bifluoride and hydrofluoric acid mixture*) (*RQ-5000/2270*)	Corrosive material	NA1760	Corrosive	173.244	173.264	1 quart	1 gallon	1	1	
	Wood filler, liquid. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish; *etc.*										
	Wood shavings (*when dry, clean and free from oil*). *See* Sawdust										
	Wool waste. *See* Cotton waste										
	Wool waste, wet. See Waste wool, wet										
	Xenon	Nonflammable gas	UN2036	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	X-ray film. *See* Film										
E	Xylene (*xylol*) (*RQ-1000/454*)	Flammable liquid	UN1307	Flammable liquid	173.118	173.119	1 quart	1 quart	1,2	1,2	
EA	Xylenol (*RQ-1000/454*)	ORM-A	UN2261	None	173.505	173.510	100 pounds	No limit	1,2	1,2	
	Xylyl bromide	Irritating material	UN1701	Irritant	None	173.382	Forbidden	75 pounds	1	5	Stow away from living quarters
	p-Xylyl diazide	Forbidden									
A	Yeast, active, *in liquid or pressed form*	ORM-C		None	None	173.1985	No limit	No limit			
E	Zinc acetate (*RQ-1000/454*)	ORM-E	NA9153	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc ammonium chloride (*RQ-5000/2270*)	ORM-E	NA9154	None	None	173.510	No limit	No limit	1,2	1,2	
	Zinc ammonium nitrite	Oxidizer	UN1512	Oxidizer	None	173.228	25 pounds	100 pounds	1,3	5	This material may be forbidden in water transportation by certain countries
	Zinc arsenate	Poison B	UN1712	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Zinc arsenite, solid	Poison B	UN1712	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Zinc borate (*RQ-1000/454*)	ORM-E	NA9155	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc bromide (*RQ-5000/2270*)	ORM-E	NA9156	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc carbonate (*RQ-1000/454*)	ORM-E	NA9157	None	None	173.510	No limit	No limit	1,2	1,2	
	Zinc chlorate	Oxidizer	UN1513	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Stow separate from ammonium compounds and away from powdered metals
E	Zinc chloride, solid (*RQ-5000/2270*)	ORM-E	UN2331	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc chloride solution (*RQ-5000/2270*)	Corrosive material	UN1840	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
E	Zinc cyanide (*RQ-10/4.54*)	Poison B	UN1713	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Zinc ethyl. See Pyrophoric liquid, n.o.s.										
E	Zinc fluoride (*RQ-1000/454*)	ORM-E	NA9158	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc formate (*RQ-1000/454*)	ORM-E	NA9159	None	None	173.510	No limit	No limit	1,2	1,2	
EA	Zinc hydrosulfite (*RQ-1000/454*)	ORM-A	UN1931	None	173.505	173.510	50 pounds	100 pounds	1,2	1,2	Keep dry. Stow away from acids and oxidizers
E	Zinc muriate solution. *See* Zinc chloride solution										
E	Zinc nitrate (*RQ-5000/2270*)	Oxidizer	UN1514	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Zinc permanganate	Oxidizer	UN1515	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Zinc peroxide	Oxidizer	UN1516	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Keep dry
E	Zinc phenolsulfonate (*RQ-5000/2270*)	ORM-E	NA9160	None	None	173.510	No limit	No limit	1,2	1,2	

§172.101 Hazardous Materials Table (cont'd)

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Zinc phosphide (*RQ-1000/454*)	Poison B	UN1714	Poison	173.364	173.365	25 pounds	100 pounds	1,2	1,2	Stow away from acids and oxidizers
E	Zinc silicofluoride (*RQ-5000/2270*)	ORM-E	UN2855	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc sulfate (*RQ-1000/454*)	ORM-E	NA9161	None	None	173.510	No limit	No limit	1,2	1,2	
	Zirconium hydride	Flammable solid	UN1437	Flammable solid and Dangerous when wet	None	173.206	Forbidden	150 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Zirconium metal, dry, *chemically produced, finer than 20 mesh particle size*	Flammable solid	UN2008	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Zirconium metal, dry, *mechanically produced, finer than 270 mesh particle size*	Flammable solid	UN2008	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Zirconium, metal, liquid, suspensions	Flammable liquid	UN1308	Flammable liquid	None	173.140	Forbidden	5 gallons	1	5	
	Zirconium metal, wet, *chemically produced, finer than 20 mesh particle size*	Flammable solid	UN1358	Flammable solid	None	173.214	Forbidden	150 pounds	1,2	5	
	Zirconium metal, wet, *mechanically produced, finer than 270 mesh particle size*	Flammable solid	UN1358	Flammable solid	None	173.214	Forbidden	150 pounds	1,2	5	
E	Zirconium nitrate (*RQ-5000/2270*)	Oxidizer	UN2728	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
	Zirconium picramate, wet *with at least 20% of water*	Flammable solid	UN1517	Flammable solid	None	173.216	Forbidden	25 pounds	1	1	Stow away from heavy metals and their salts
E	Zirconium potassium fluoride (*RQ-5000/2270*)	ORM-E	NA9162	None	None	173.510	No limit	No limit	1,2	1,2	
	Zirconium scrap (*borings, clippings, shavings, sheets, or turnings*)	Flammable solid	UN1932	Flammable solid	173.153	173.220	Forbidden	Forbidden	1	4	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
EA	Zirconium sulfate (*RQ-5000/2270*)	ORM-B	NA9163	None	None	173.510	100 pounds	No limit	1,2	1,2	
E	Zirconium tetrachloride, solid (*RQ-5000/2270*)	Corrosive material	UN2503	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1,2	

13. A new § 172.102 in association with the Optional Hazardous Materials Table is added to read as follows:

§ 172.102 Purpose and use of the optional hazardous materials table.

(a) The Optional Hazardous Materials Table (Optional Table) set forth in this section provides description, classification, labeling and vessel stowage requirements which may be used as an alternative to the corresponding requirements in § 172.101 under conditions set forth in this section. The provisions of this section do not apply to materials designated as hazardous materials under this subchapter that are not subject to the requirements of the IMCO Code. This section does not designate materials as hazardous materials. Such designations are made only in § 172.101. A number of materials listed in the Optional Table may not be subject to the requirements of this subchapter, but they are subject to regulation under widely applied international standards and are listed in this section in the interest of providing consistency with those standards and to alert persons offering or accepting these materials for transportation that the materials may be subject to regulation in international transport.

(b) The requirements of § 172.101 notwithstanding, a hazardous material (other than Class A or B explosives and Radioactive materials) may be classed, labeled, or described in accordance with this section provided the material conforms to all additional defining or limiting conditions prescribed for the description in the appropriate schedule of the IMCO Code.

(c) When a material is transported by aircraft, motor vehicle, or rail transport vehicle under the description and IMCO class or division provided in the Optional Table, the shipping paper required by § 172.202(a) must include the class name from Part 173 of this subchapter which most closely corresponds to the IMCO class indicated for the material in the Optional Table. For example, the IMCO proper shipping name, class and identification number for Ethylene oxide are "Ethylene oxide, 2.1, UN1040". While Ethylene oxide would be classed as a Flammable liquid under § 172.101, the class in Part 173 of this subchapter that most closely corresponds to the IMCO class provided in the Optional Table is "Flammable gas". The proper shipping paper description would be "Ethylene oxide, 2.1, Flammable gas, UN 1040".

(d) When appropriate, the entries "IMCO" or "IMCO Class" may be entered immediately before or immediately following the class entry in the basic description. For example: "Ethylene oxide, IMCO Class 2.1, Flammable gas, UN 1040."

(e) If a hazardous material that is a hazardous substance is offered, accepted or transported under an acceptable shipping name from the Optional Table that does not contain the name of the hazardous substance, the name of the hazardous substance shall be entered in association with the proper shipping name.

(f) Column 1 contains the letter "N" immediately adjacent to certain entries. The letter "N" means that the entry is not an acceptable alternative and the material must be transported under the appropriate entry in § 172.101.

(g) Column 2 lists the optional proper shipping names for hazardous materials. Proper shipping names are limited to those shown in Roman type (not italics). In the selection of a proper shipping name to describe a particular material, if the correct technical name is not shown, or is not appropriate, selection must be made from the general description or "n.o.s." entries corresponding to the specific hazard class of the material being shipped. The name that most appropriately describes the material must be used; e.g., an alcohol not listed by name in the Optional Table must be shipped as an "Alcohol n.o.s." rather than "Flammable liquid n.o.s." unless the technical name of the alcohol is listed, e.g., Methanol. Some mixtures may be more appropriately described by their application, such as "Paint" or "Cleaning compound".

(1) Shipping names may be entered in either upper or lower case letters.

(2) The words in italics are not part of the proper shipping name but may be used in addition to the proper shipping name. The word "or" in italics indicates that any terms in the sequence may be used as the proper shipping name, as appropriate.

(3) When one entry references another entry by use of a "*see*" and both names are in Roman type, either name may be used as a proper shipping name (e.g., Methyl alcohol. *See* Methanol).

(4) If not included in the proper shipping name in the Optional Table, the proper shipping name for a hazardous material that is a hazardous waste must include the word "Waste" preceding the name of the material. For example: Waste turpentine.

(h) Column 3 contains the hazard class or division designated for the material in the IMCO Code. In the case of explosives, a letter designating the "compatibility group" of the substance or article is also included immediately following the division. Detailed definitions of the classes, divisions, and compatibility groups are provided in the IMCO Code. Basic definitions of the IMCO classes and divisions (with corresponding DOT classes shown in parentheses) are follows:

(1) Class 1—Explosives.

(i) Division 1.1—Substances and articles which have a mass explosion hazard. (*Explosive A*)

(ii) Division 1.2—Substances and articles which have a projection hazard but not a mass explosion hazard. (*Explosive A* or *B*)

(iii) Division 1.3—Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard. (*Explosive B*)

(iv) Division 1.4—Substances and articles which present no significant hazard. (*Explosive C*)

(v) Division 1.5—Very insensitive substances. (*Blasting Agent*)

(2) Class 2—Gases (compressed, liquefied or dissolved under pressure).

(i) Division 2.1—Flammable gases. (*Flammable gas*)

(ii) Division 2.2—Nonflammable gases. (*Nonflammable gas*)

(iii) Division 2.3—Poison gases. (*Poison A*)

(3) Class 3—Flammable liquids.

(i) Division 3.1—Low flash point group (liquids with flash points below 0°F.). (*Flammable liquid*)

(ii) Division 3.2—Intermediate flash point group (liquids with flash points of 0°F. or above but less than 73°F.). (*Flammable liquid*)

(iii) Division 3.3—High flash point group (liquids with flash points of 73°F. or above but less than 141°F.). (*Flammable liquid* or *Combustible liquid*)

(4) Class 4—Flammable solids or substances.

(i) Division 4.1—Flammable solids. (*Flammable solid*)

(ii) Division 4.2—Substances liable to spontaneous combustion. (*Flammable solid* or, for pyroforic liquids, *Flammable liquid*)

(iii) Division 4.3—Substances emitting flammable gases when wet. (*Flammable solid*)

(5) Class 5—Oxidizing substances.

(i) Division 5.1—Oxidizing substances or agents. (*Oxidizer*)

(ii) Division 5.2—Organic peroxides. (*Organic peroxide*)

(6) Class 6— Poisonous and infectious substances.

(i) Division 6.1—Poisonous substances. (*Poison B*)

(ii) Division 6.2—Infectious substances. (*Etiologic agent*)

(7) Class 7—Radioactive substances. (*Radioactive material*)

(8) Class 8—Corrosives. (*Corrosive material*)

(9) Class 9—Miscellaneous dangerous substances. (*Other regulated material*)

(i) Column 4 contains the United Nations number listed for the substance or article in the IMCO Code. A number of substances or articles have no UN number provided for them in the IMCO Code. For some of these entries, the UN number of the article or substance which most appropriately corresponds to that particular entry is shown in parentheses.

(j) Column 5 specifies the labels to be applied to each package. Specifications for labels for domestic and export shipments shall be either as provided in this subchapter or as provided in the IMCO Code, except that color shall be as prescribed in § 172.407(d). The label referred to as the "St. Andrews Cross" label is the "Harmful-Stow Away From Foodstuffs" label provided by IMCO for materials of Class 6.1 Packaging Group III.

(k) Column 6 provides the packaging group specified for the material in the IMCO Code.

(l) Column 7 specifies each of the authorized stowage locations on board cargo vessels and passenger vessels and certain additional requirements for shipments of listed hazardous materials. Section 176.63 of this subchapter sets forth the physical requirements for each of the authorized stowage locations listed in Column 7. The authorized stowage locations are defined as follows:

(1) "1" means the material must be stowed "on deck."

(2) "2" means the material must be stowed "under deck."

(3) "3" means the material must be stowed "under deck away from heat."

(4) "1,2" means the material may be stowed either "on deck" or "under deck"; however, "under deck" stowage should be used if available.

(5) "1,3" means the material may be stowed either "on deck" or "under deck away from heat"; however, "under deck away from heat" stowage should be used if it is available.

(6) "5" means the material is forbidden and may not be offered or accepted for transportation by vessel.

(7) "6" means the material is authorized to be transported in a magazine subject to the requirements of §§ 176.135 through 176.144 of this subchapter.

172.102 Optional Hazardous Materials Table

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Acetal	3.1	UN 1088	Flammable Liquid	II	1,3	5	Keep cool
	Acetaldehyde	3.1	UN 1089	Flammable Liquid	I	1,3	5	Keep cool
	Acetaldehyde oxime	3.3	UN 2332	Flammable Liquid	II	1,2	1,2	
	Acetic acid, *solution containing not less than 80% of acid*	3.3	UN 1842	Flammable Liquid, Corrosive	II	1,2	1,2	
	Acetic anhydride	8	UN 1715	Corrosive	II	1,2	1,2	Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Acetone	3.1	UN 1090	Flammable Liquid	II	1,3	5	
	Acetone cyanohydrin, *stabilized*	6.1	UN 1541	Poison	I	1	5	Shade from radiant heat. Stow 'away from' acids and alkalis
	Acetone oils	3.2	UN 1091	Flammable Liquid	II	1,2	1*	
	Acetonitrile. *See* Methyl cyanide							
	Acetyl acetone peroxide, *maximum concentration 40% in solution*	5.2	UN 2080	Organic Peroxide	II	1	5	
	Acetyl benzoyl peroxide, *maximum concentration 45% in solution*	5.2	UN 2081	Organic Peroxide	II	1	5	
	Acetyl bromide	8	UN 1716	Corrosive	I	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Acetyl chloride	8	UN 1717	Corrosive, Flammable Liquid	I	1	1	Keep dry. Shade from radiant heat. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Acetyl cyclohexane sulphonyl peroxide, *maximum concentration 82%, wetted with minimum 12% water*	5.2	UN 2082	Organic Peroxide	I	1	5	Maximum transport temperature -10 degrees C
	Acetyl cyclohexane sulphonyl peroxide, *maximum concentration 32% in solution*	5.2	UN 2083	Organic Peroxide	II	1	5	Maximum transport temperature -10 degrees C
	Acetylene, *dissolved*	2.1	UN 1001	Flammable Gas	--	1	1	Shade from radiant heat. Stow 'separated from' chlorine
	Acetylene tetrabromide	6.1	UN 2504	St. Andrews Cross	III	1,2	1,2	
	Acetyl iodide	8	UN 1898	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Acetyl methyl carbinol	3.3	UN 2621	Flammable Liquid	III	1,2	1,2	
	Acetyl peroxide, *maximum concentration 27% in solution*	5.2	UN 2084	Organic Peroxide	II	1	5	
	Acid butyl phosphate	8	UN 1718	Corrosive	III	1,2	1,2	Glass carboys in hampers prohibited under deck
	Acid mixtures, *hydrofluoric and sulphuric*	8	UN 1786	Corrosive	I	1	5	Stow 'away from' fluorides
	Acid mixtures, *nitrating acid*	8	UN 1796	Corrosive	I/II	1	5	Stow 'away from' fluorides
	Acid mixtures, *spent*	8	UN 1826	Corrosive	I/II	1	5	Stow 'away from' fluorides
	Acids, liquid, n.o.s.. *See* Corrosive liquids, n.o.s							
	Acrolein dimer, *stabilized*	3.3	UN 2607	Flammable Liquid	II	1,2	1,2	
	Acrolein, *inhibited*	3.1	UN 1092	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Acrylamide	6.1	UN 2074	St. Andrews Cross	III	1,2	1,2	Keep cool. Shade from radiant heat
	Acrylamide	6.1	UN 2074	St. Andrews Cross	III	1,2	1,2	Shade from radiant heat. Keep cool
	Acrylic acid, *inhibited*	8	UN 2218	Corrosive	II	1	1	Shade from radiant heat. Keep cool. Glass carboys prohibited on passenger vessels
	Acrylonitrile, *inhibited*	3.1	UN 1093	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Activated carbon. *See* Carbon, *activated*							
	Activated charcoal. *See* Carbon, *activated*							
	Adhesives, n.o.s.. *See* Cement, adhesive, *containing a flammable liquid*							
	Adiponitrile	6.1	UN 2205	St. Andrews Cross	III	1,2	1,2	Shade from radiant heat
	Aerosol dispensers, *with a capacity below 1400 cubic cm.*:							
	(1) more than 10% by weight of total contents consisting of flammable gas	2.1	UN 1950	Flammable Gas	--	1,3	1,3	
	(2) internal pressure greater than 160 psig at 130 deg F.	2.2	UN 1950	Nonflammable Gas	--	1,3	1,3	
	(3) more than 45% by weight of total contents consisting of flammable liquid. This limit is reduced to 35% if there is any flammable gas present.	3.1 3.2 3.3	UN 1950 UN 1950 UN 1950	Flammable Liquid Flammable Liquid Flammable Liquid	-- -- --	1,3 1,3 1,3	1,3 1,3 1,3	
	(4) more than 10% by weight of toxic substances in the liquid concentrate	6.1 6.1	UN 1950	Poison St. Andrews Cross	I/II III	1,3 1,3	1,3 1,3	
	(5) more than 5% by weight of corrosive substances in the liquid concentrate	8	UN 1950	Corrosive	--	1,3	1,3	
	(6) as specified under Group 2 on page 9011 of IMCO Code	9	UN 1950	None	--			
N	Aerosol dispensers, *with a capacity of 1400 cubic cm. or more*	2	UN 1950		--			
	Aerosols *or* aerosol product. *See* Aerosol dispensers							
	Agents, blasting, Type B. *See* Explosives, blasting, Type B							
	Agents, blasting, Type E. *See* Explosives, blasting, Type E							
	Air, *compressed*	2.2	UN 1002	Nonflammable Gas	--	1,2	1,2	
	Air, *liquid*	2.2	UN 1003	Nonflammable Gas, Oxidizer	--	1,3	1,3	Stow 'separated from' acetylene. Do not overstow
	Alarm devices, explosive	1.4 S	UN 0001	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Alcohol, *denatured*	3.2 3.3	UN 1095 UN 1095	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Alcohol, *industrial*	3.2 3.3	UN 1096 UN 1096	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Alcohols, *(non-toxic)*, n.o.s.	3.2 3.3	UN 1987 UN 1987	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Alcohols, *(toxic)*, n.o.s.	3.2	UN 1986	Flammable Liquid, Poison	II	1,2	1	
		3.3	UN 1986	Flammable Liquid, Poison	II	1,2	1	
	Aldehydes, *(non-toxic)*, n.o.s.	3.2	UN 1989	Flammable Liquid	II	1,2	1	
		3.3	UN 1989	Flammable Liquid	II	1,2	1,2	
	Aldehydes, *(toxic)*, n.o.s.	3.2	UN 1988	Flammable Liquid, Poison	II	1,2	1	
		3.3	UN 1988	Flammable Liquid, Poison	II	1,2	1,2	
	Aldrin *and its mixtures*	6.1	UN 1542	Poison	II/III	1,2	1,2	
	Alkali metal amalgams, n.o.s.	4.3	UN 1389	Dangerous When Wet	I	1,2	1,2	
	Alkali metal amides, n.o.s.	4.3	UN 1390	Dangerous When Wet	II	1,2	5	
	Alkali metal dispersions, n.o.s.	4.3	UN 1391	Dangerous When Wet	I	1,2	5	
	Alkali metals, *liquid alloys of*	4.3	UN 1421	Dangerous When Wet	I	1,2	5	
	Alkaline caustic liquids, n.o.s. *See* Caustic alkali liquids, n.o.s							
	Alkaline corrosive liquids, n.o.s.	8	UN 1760	Corrosive	II	1,2	1,2	
	Alkaline earth metal amalgams, n.o.s.	4.3	UN 1382	Dangerous When Wet	I	1,2	1,2	
	Alkaloids, *(poisonous)*, *and their salts*, n.o.s.	6.1	UN 1544	Poison	I/II	1,2	1,2	
		6.1	UN 1544	St. Andrews Cross	III	1,2	1,2	
	Alkanesulphonic acids	8	UN 1899	Corrosive	II	1,2	1	
	Alkylamines and polyamines, *flashpoint below 23 deg C and boiling point above 35 deg C but not more than 200 deg C*, n.o.s.	3.2	UN 2733	Flammable Liquid, Corrosive	II	1,2	1	
		3.3	UN 2733	Flammable Liquid, Corrosive	II	1,2	1,2	
	Alloys of alkaline earth metals, *(non-pyrophoric)*, n.o.s.	4.3	UN 1393	Dangerous When Wet	II	1,2	5	
	Allyl acetate	3.2	UN 2333	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Allyl alcohol	3.2	UN 1098	Flammable Liquid, Poison	I	1,2	1	
	Allylamine	3.1	UN 2334	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Allyl bromide	3.2	UN 1099	Flammable Liquid	I	1,2	1	
	Allyl chloride	3.1	UN 1100	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Allyl chlorocarbonate. *See* Allyl chloroformate							
	Allyl chloroformate	8	UN 1722	Corrosive	I	1	5	Keep dry. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Allyl ethyl ether	3.2	UN 2335	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Allyl formate	3.2	UN 2336	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Allyl glycidyl ether	3.3	UN 2219	Flammable Liquid	III	1,2	1,2	
	Allyl iodide	8	UN 1723	Corrosive	I	1	5	Keep dry
	Allyl isothiocyanate, *stabilized*	6.1	UN 1545	Poison	II	1	5	Shade from radiant heat
	Allyl trichlorosilane, *stabilized*	8	UN 1724	Corrosive	II	1	1	Keep dry. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Aluminium alkylchlorides	4.2	UN 2003	Spontaneously Combustible	I	1	1	
	Aluminium alkyl halides, *in solution*	4.2	UN 2220	Spontaneously Combustible	II	1	1	
	Aluminium alkyl halides, *pure*	4.2	UN 2221	Spontaneously Combustible	I	1	1	
	Aluminium alkyls	4.2	UN 2003	Spontaneously Combustible	I	1	1	
	Aluminium bromide, *(anhydrous or solutions)*	8	UN 1725	Corrosive	II	1,2	1,2	Keep dry
	Aluminium carbide	4.3	UN 1394	Dangerous When Wet	II	1,2	1,2	
	Aluminium chloride, *(anhydrous or solutions)*	8	UN 1726	Corrosive	II	1,2	1,2	Keep dry
	Aluminium ferrosilicon, *powder*	4.3	UN 1395	Dangerous When Wet	II	1,2	1,2	
	Aluminium hydride	4.2	UN 2463	Spontaneously Combustible	I	1,2	5	
	Aluminium nitrate	5.1	UN 1438	Oxidizer	III	1,2	1,2	
	Aluminium phosphide	6.1	UN 1397	Poison, Dangerous When Wet	I	1,2	1,2	Stow 'away from' acids and oxidizing substances
	Aluminium, *powder, coated*	4.1	UN 1309	Flammable Solid	III	1,2	1,2	Keep dry. Stow 'away from' nonflammable gases and poisons
	Aluminium, *powder, pyrophoric*. *See* Pyrophoric metals							
	Aluminium, *powder, uncoated, non-pyrophoric*	4.3	UN 1396	Dangerous When Wet	II	1,2	1,2	Keep dry. Stow 'away from' nonflammable gases and poisons
	Aluminium silicon, *powder, uncoated*	4.3	UN 1398	Dangerous When Wet	III	1,2	1,2	
	Aluminium tributyl	4.2	UN 2003	Spontaneously Combustible	I	1	1	
	Aluminium triethyl	4.2	UN 1102	Spontaneously Combustible	I	1	1	
	Aluminium trimethyl	4.2	UN 1103	Spontaneously Combustible	I	1	1	
	Aminophenols (*o-*, *m-*, *p-*)	6.1	UN 2512	St. Andrews Cross	III	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Ammonia, *anhydrous, liquefied, and ammonia solutions below S.G. 0.88 at 15 degrees C. ammonia liquid and ammonia solutions in water containing over 50% of ammonia.*	2.3	UN 1005	Poison Gas	–	1,2	5	Stow 'separated from' chlorine
	Ammonia, *solutions below S.G. 0.88 at 15 degrees C. containing more than 35% and not above 50% ammonia.*	2.2	UN 2073	Nonflammable Gas	–	1,2	5	Stow 'separated from' chlorine
	Ammonia solutions *having a density (specific gravity) between 0.880 and 0.957 at 15 deg C, in water, containing more than 10% and not more than 35% by weight ammonia.*	8	UN 2672	Corrosive	III	1,2	1,2	Stow 'away from' living quarters
	Ammonium arsenate	6.1	UN 1546	Poison	II	1,2	1,2	Stow 'away from' alkalis
	Ammonium bifluoride. *See* Ammonium hydrogen fluoride							
	Ammonium dichromate	5.1	UN 1439	Oxidizer	II	1,2	1,2	Stow 'away from' foodstuffs
	Ammonium dinitro-o-cresolate	9	UN 1843	None	II	1,2	1,2	Stow 'away from' heavy metals, 'separated from' flammable substances and 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Ammonium fluoride	6.1	UN 2505	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	Ammonium hydrogen fluoride	8	UN 1727	Corrosive	II	1,2	1,2	Keep dry
	Ammonium metavanadate	6.1	UN 2859	Poison	II	1,2	1,2	
	Ammonium nitrate, *containing more than 0.2% by weight of combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance*	1.1 D	UN 0222	Explosive (1.1D)	–	1,2	1,2	
	Ammonium nitrate, *containing not more than 0.2% of combustible material (including organic material calculated as carbon) and free from any other added matter*	5.1	UN 1942	Oxidizer	III	1,2	1,2	
	Ammonium nitrate fertilizer, *containing ammonium nitrate,* n.o.s.	5.1	UN 2072	Oxidizer	III	1,2	1,2	
	Ammonium nitrate fertilizers, *of the same composition as defined in class 5.1 on pages 5015 and 5016 of the IMCO Code but containing greater amounts of organic and/or combustible material than specified in these entries*	1.1 D	UN 0223	Explosive (1.1D)	–	1,2	1,2	
	Ammonium nitrate fertilizers, *Type A*							
	(1) Uniform non-segregating mixtures of ammonium nitrate with added matter which is inorganic and chemically inert towards ammonium nitrate, containing not less than 90% of ammonium nitrate and not more than 0.2% of combustible material (including organic material calculated as carbon), or containing less than 90% but more than 70% of ammonium nitrate and not more than 0.4% of total combustible material	5.1	UN 2067	Oxidizer	III	1,2	1,2	
	(2) Uniform non-segrating mixtures of ammonium nitrate with calcium carbonate and/or dolomite, containing more than 80% but less than 90% of ammonium nitrate and not more than 0.4% of total combustible material	5.1	UN 2068	Oxidizer	III	1,2	1,2	
	(3) Uniform non-segregating mixtures of ammonium nitrate/ammonium sulphate, containing more than 45% but not more than 70% of ammonium nitrate and containing not more than 0.4% of total combustible material	5.1	UN 2069	Oxidizer	III	1,2	1,2	
	(4) Uniform non-segregating mixtures of nitrogen/phosphate or nitrogen/potash types or complete fertilizers of nitrogen/phosphate/potash type, containing more than 70% but less than 90% of ammonium nitrate and not more than 0.4% of total combustible material	5.1	UN 2070	Oxidizer	III	1,2	1,2	
	Ammonium nitrate fertilizers, *Type B. Uniform non-segregating mixtures of nitrogen/phosphate or nitrogen/potash types or complete fertilizers of nitrogen/phosphate/potash type, containing not more than 70% of ammonium nitrate and not more than 0.4% of total added combustible material or containing not more than 45% of ammonium nitrate with unrestricted combustible material*	9	UN 2071	None	III	1,2	1,2	
	Ammonium perchlorate	5.1	UN 1442	Oxidizer	II	1,2	5	Stow 'away from' powdered metals
	Ammonium persulphate	5.1	UN 1444	Oxidizer	III	1,2	1,2	
N	Ammonium picrate, *dry or containing, by weight, less than 10% water*	1.1D	UN 0004	Explosive (1.1D)	–	–	–	
	Ammonium picrate, *wetted with not less than 10% water*	4.1	UN 1310	Flammable Solid	I	1	5	Stow 'away from' heavy metals
	Ammonium picrate, *wetted with not less than 33⅓% of water*	4.1	UN 1310	Flammable Solid	I	1,2	5	Stow 'away from' heavy metals
	Ammonium polyvanadate	6.1	UN 2861	Poison	II	1,2	1,2	
	Ammunition, illuminating, *with or without burster, expelling charge or propelling charge*	1.4 G	UN 0297	Explosive (1.4G)	–	1,3	1,3	
N	Ammunition, illuminating, *with or without burster, expelling charge or propelling charge*	1.2G	UN 0171	Explosive (1.2G)	–	–	–	
N	Ammunition, illuminating, *with or without burster, expelling charge or propelling charge*	1.3G	UN 0254	Explosive (1.3G)	–	–	–	
N	Ammunition, incendiary, *liquid or gel, with burster, expelling charge or propelling charge*	1.3J	UN 0247	Explosive (1.3J)	–	–	–	
	Ammunition, incendiary *(other than water-activated ammunition), without white phosphorus or phosphides, with or without burster, expelling charge or propelling charge*	1.4 G	UN 0300	Explosive *(1.4G)*	–	1,3	1,3	
N	Ammunition, incendiary *(other than water-activated ammunition), without white phosphorus or phosphides, with or without burster, expelling charge or propelling charge*	1.2G	UN 0009	Explosive (1.2G)	–	–	–	
N	Ammunition, incendiary *(other than water-activated ammunition), without white phosphorus or phosphides, with or without burster, expelling charge or propelling charge*	1.3G	UN 0010	Explosive (1.3G)	–	–	–	
N	Ammunition, incendiary, white phosphorus, *with burster, expelling charge or propelling charge*	1.2H	UN 0243	Explosive (1.2H)	–	–	–	
N	Ammunition, incendiary, white phosphorus, *with burster, expelling charge or propelling charge*	1.3H	UN 0244	Explosive (1.3H)	–	–	–	
	Ammunition, practice	1.4G	UN 0362	Explosive (1.4G)	–	1,3	1,3	
	Ammunition, proof	1.4G	UN 0363	Explosive (1.4G)	–	1,3	1,3	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
N	Ammunition, smoke *(other than water-activated ammunition) with or without burster, expelling charge or propelling charge*	1.2G	UN 0015	Explosive (1.2G), Corrosive	--	--	--	
N	Ammunition, smoke *(other than water-activated ammunition) with or without burster, expelling charge or propelling charge*	1.3G	UN 0016	Explosive (1.3G), Corrosive	--	--	--	
N	Ammunition, smoke *(other than water-activated ammunition) with or without burster, expelling charge or propelling charge*	1.4G	UN 0303	Explosive (1.4G), Corrosive	--	--	--	
N	Ammunition, smoke, white phosphorus *(other than water-activated ammunition), with burster, expelling charge or propelling charge*	1.2H	UN 0245	Explosive (1.2H)	--	--	--	
N	Ammunition, smoke, white phosphorus *(other than water-activated ammunition), with burster, expelling charge or propelling charge*	1.3H	UN 0246	Explosive (1.3H)	--	--	--	
	Ammunition, *(tear producing), non-explosive, with neither burster nor expelling charge, non-fuzed*	6.1	UN 2017	Poison	II	1,2	5	Keep dry
N	Ammunition, tear producing, *with burster, expelling charge or propelling charge*	1.2G	UN 0018	Explosive (1.2G), Poison, Corrosive	--	--	--	
N	Ammunition, tear producing, *with burster, expelling charge or propelling charge*	1.3G	UN 0019	Explosive (1.3G), Poison, Corrosive	--	--	--	
	Ammunition, tear-producing, *with burster, expelling charge or propelling charge*	1.4 G	UN 0301	Explosive (1.4G), Poison, Corrosive	--	1,3	1,3	
	Ammunition, *(toxic), non-explosive, with neither burster nor expelling charge, non-fuzed*	6.1	UN 2016	Poison	II	1,2	5	Keep dry
N	Ammunition, toxic *(other than water-activated ammunition) with burster, expelling charge or propelling charge*	1.2K	UN 0020	Explosive (1.2K), Poison	--	--	--	
N	Ammunition, toxic *(other than water-activated ammunition) with burster, expelling charge or propelling charge*	1.3K	UN 0021	Explosive (1.3K), Poison	--	--	--	
	Amorces	1.4 S	UN 0022	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Amyl acetates	3.2	UN 1104	Flammable Liquid	II	1,2	1	
		3.3	UN 1104	Flammable Liquid	II	1,2	1,2	
	Amyl alcohols	3.2	UN 1105	Flammable Liquid	II	1,2	1	
		3.3	UN 1105	Flammable Liquid	II	1,2	1,2	
	Amylamine	3.2	UN 1106	Flammable Liquid	II	1,2	1	
	Amyl chloride	3.2	UN 1107	Flammable Liquid	II	1,2	1	
	n-Amylene	3.1	UN 1108	Flammable Liquid	I	1,2	5	
	Amyl formates	3.3	UN 1109	Flammable Liquid	II	1,2	1,2	
	Amyl hydride. *See* Pentane							
	Amyl mercaptan	3.2	UN 1111	Flammable Liquid	II	1,2	1	
	Amyl methyl ketone	3.3	UN 1110	Flammable Liquid	III	1,2	1,2	
	Amyl nitrate	3.3	UN 1112	Flammable Liquid	II	1,3	5	
	Amyl nitrite	3.1	UN 1113	Flammable Liquid	II	1,2	5	Keep cool
	Amyl trichlorosilane	8	UN 1728	Corrosive	II	1	1	Keep dry. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Aniline	6.1	UN 1547	Poison	II	1,2	1,2	Stow 'away from' acids and oxidizers
	Aniline hydrochloride	6.1	UN 1548	St. Andrews Cross	III	1,2	1,2	Stow 'away from' alkalis
	Aniline oil. *See* Aniline							
	o-Anisidine	6.1	UN 2431	St. Andrews Cross	III	1,2	1,2	
	Anisole	3.3	UN 2222	Flammable Liquid	III	1,2	1,2	
	Anisoyl chloride	8	UN 1729	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Anti-freeze. *See* Flammable liquid preparations, n.o.s							
	Antimony chloride. *See* Antimony trichloride, *liquid or solid*							
	Antimony compounds, *(inorganic)*, n.o.s.	6.1	UN 1549	Poison	I/II	1,2	1,2	
		6.1	UN 1549	St. Andrews Cross	III	1,2	1,2	
	Antimony lactate	6.1	UN 1550	St. Andrews Cross	III	1,2	1,2	
	Antimony pentachloride, *liquid*	8	UN 1730	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Antimony pentachloride, *solutions*	8	UN 1731	Corrosive	II	1	1	Glass carboys prohibited on passenger vessels
	Antimony pentafluoride	8	UN 1732	Corrosive, Poison	II	1	5	Keep dry
	Antimony potassium tartrate	6.1	UN 1551	St. Andrews Cross	III	1,2	1,2	
	Antimony trichloride, *liquid*	8	UN 1733	Corrosive	II	1	1	Keep dry
	Antimony trichloride, *solid*	8	UN 1733	Corrosive	II	1,2	1,2	Keep dry
	Argon, *compressed*	2.2	UN 1006	Nonflammable Gas	--	1,3	1,3	
	Argon, *liquid*	2.2	UN 1951	Nonflammable Gas	--	1,3	1,3	
	Arsenic acid, *liquid*	6.1	UN 1553	Poison	I	1,2	1,2	
	Arsenic acid, *solid*	6.1	UN 1554	Poison	II	1,2	1,2	
	Arsenical dust	6.1	UN 1562	Poison	II	1,2	1,2	
	Arsenical flue dust. *See* Arsenical dust							
	Arsenic bromide	6.1	UN 1555	Poison	II	1,2	1,2	
	Arsenic chloride. *See* Arsenic trichloride							
	Arsenic compounds, *(liquid)*, n.o.s.	6.1	UN 1556	Poison	I/II	1,2	1,2	
		6.1	UN 1556	St. Andrews Cross	III	1,2	1,2	
	Arsenic compounds, *(solid)*, n.o.s.	6.1	UN 1557	Poison	I/II	1,2	1,2	Keep dry.
		6.1	UN 1557	St. Andrews Cross	III	1,2	1,2	Keep dry
	Arsenic, metallic	6.1	UN 1558	Poison	II	1,2	1,2	
	Arsenic pentoxide	6.1	UN 1559	Poison	II	1,2	1,2	
	Arsenic sulphides, *(solid)*, n.o.s. *See* Arsenic compounds, *(solid)*, n.o.s							
	Arsenic trichloride	6.1	UN 1560	Poison	I	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Arsenic trioxide	6.1	UN 1561	Poison	II	1,2	1,2	
	Arsine	2.3	UN 2188	Poison Gas, Flammable Gas	--	1	5	Stow 'away from' living quarters
	Articles, explosive, n.o.s.	1.4B	UN 0350	Explosive (1.4B)	--	1,3	1,3	
	Articles, explosive, n.o.s.	1.4C	UN 0351	Explosive (1.4C)	--	1,3	1,3	
	Articles, explosive, n.o.s.	1.4D	UN 0352	Explosive (1.4D)	--	1,3	1,3	
	Articles, explosive, n.o.s.	1.4G	UN 0353	Explosive (1.4G)	--	1,3	1,3	
	Articles, explosive, n.o.s.	1.4S	UN 0349	None. Package to be marked '1.4S'	--	1,3	1,3	
N	Articles, explosive, n.o.s.	1.1L	UN 0354	Explosive (1.1L)	--	--	--	
N	Articles, explosive, n.o.s.	1.2L	UN 0355	Explosive (1.2L)	--	--	--	
N	Articles, explosive, n.o.s.	1.3L	UN 0356	Explosive (1.3L)	--	--	--	
N	Articles, pyrophoric	1.2L	UN 0380	Explosive (1.2L)	--	--	--	
	Asbestos, blue	9	UN 2212	None	II	1,2	1,2	
	Asbestos, white	9	UN 2590	None	III	1,2	1,2	
	Asphalt cut-backs. *See* Cut-backs, *asphalt or bitumen*							
	Bags, *(empty and unwashed), having contained* Potassium nitrate *or* sodium nitrate	4.1	UN 1359	Flammable Solid	III	1,2	5	
	Barium, *alloys, non-pyrophoric*	4.3	UN 1399	Dangerous When Wet	II	1,2	5	
	Barium alloys *pyrophoric*	4.2	UN 1854	Spontaneously Combustible	II	1	5	
	Barium azide, *containing at least 50% water or alcohol*	6.1	UN 1571	Poison	II	1,2	1,2	Stow 'away from' heavy metals
N	Barium azide, *dry or containing, by weight, less than 50% water or alcohol*	1.1A	UN 0224	Explosive (1.1A), Poison	--	--	--	
	Barium chlorate	5.1	UN 1445	Oxidizer, Poison	II	1,2	1,2	Stow 'away from' foodstuffs and powdered metals, 'separated from' Ammonium compounds
	Barium compounds, n.o.s.	6.1 6.1	UN 1564 UN 1564	Poison St. Andrews Cross	I/II III	1,2 1,2	1,2 1,2	
	Barium cyanide	6.1	UN 1565	Poison	I	1,2	1,2	Stow 'away from' acids
	Barium, *metal, non-pyrophoric*	4.3	UN 1400	Dangerous When Wet	II	1,2	5	
	Barium nitrate	5.1	UN 1446	Oxidizer, Poison	II	1,2	1,2	Stow 'away from' foodstuffs
	Barium oxide	6.1	UN 1884	St. Andrews Cross	III	1,2	1,2	
	Barium perchlorate	5.1	UN 1447	Oxidizer, Poison	II	1,2	1,2	Stow 'away from' powdered metals and foodstuffs
	Barium permanganate	5.1	UN 1448	Oxidizer, Poison	II	1,2	1,2	Stow 'away from' foodstuffs and 'separated from' ammonium compounds and hydrogen peroxide
	Barium peroxide	5.1	UN 1449	Oxidizer, Poison	II	1,2	1,2	Keep dry. Stow 'away from' foodstuffs
	Batteries, *electric, storage, wet or filled*	8	UN 1734	Corrosive	III	1,2	1,2	
	Battery fluid, *acid*	8	UN 1735	Corrosive	II	1,2	1,2	Glass carboys in hampers prohibited under deck
	Battery fluid, *alkaline corrosive*	8	UN 1735	Corrosive	II	1,2	1,2	
	Battery fluid, *alkaline corrosive, with storage battery*	8	UN 1735	Corrosive	II	1,2	1,2	
	Benzaldehyde	3.3	UN 1990	Flammable Liquid	III	1,2	1,2	
	Benzene	3.2	UN 1114	Flammable Liquid	II	1,2	1	
	Benzene sulphonyl chloride	6.1	UN 2225	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids and alkalis
	Benzidine	6.1	UN 1885	Poison	II	1,2	1,2	
	Benzine	3.1 3.2 3.3	UN 1115 UN 1115 UN 1115	Flammable Liquid Flammable Liquid Flammable Liquid	II II II	1,2 1,2 1,2	5 1 1,2	
	Benzonitrile	6.1	UN 2224	Poison	II	1,2	1,2	Stow 'away from' acids
	Benzotrichloride	8	UN 2226	Corrosive	II	1,2	1,2	Stow 'away from' living quarters
	Benzotrifluoride	3.2	UN 2338	Flammable Liquid	II	1,2	1	
	Benzoyl chloride	8	UN 1736	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Benzoyl peroxide, *in a concentration of more than 80% but less than 95% with water*	5.2	UN 2088	Organic Peroxide	I	1	5	
	Benzoyl peroxide, *in a concentration of more than 72% but less than 95% as a paste*	5.2	UN 2086	Organic Peroxide	I	1	5	
	Benzoyl peroxide, *in a concentration of not more than 72% as a paste*	5.2	UN 2087	Organic Peroxide	II	1	5	
	Benzoyl peroxide, *in a concentration of not more than 55% as a paste*	5.2	UN 2087	Organic Peroxide	II	1	5	
	Benzoyl peroxide, *in a concentration of not more than 80% with water*	5.2	UN 2090	Organic Peroxide	II	1	5	
	Benzoyl peroxide, *in concentrations from 30% to maximum 52% with inert solid*	5.2	UN 2089	Organic Peroxide	II	1	5	
	Benzoyl peroxide, *technical pure or in a concentration of more than 52% with inert solid*	5.2	UN 2085	Organic Peroxide	I	1	5	
	Benzyl bromide	8	UN 1737	Corrosive	II	1	5	Keep dry
	Benzyl chloride	8	UN 1738	Corrosive	II	1	5	Keep dry. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Benzyl chloroformate	8	UN 1739	Corrosive	I	1	5	Keep dry
	Benzyl cyanide, *liquid*	6.1	UN 2470	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	Benzyl dimethylamine	3.3	UN 2619	Flammable Liquid	III	1,2	1,2	
	Benzylidene chloride	6.1	UN 1886	Poison	II	1	5	
	Beryllium compounds	6.1	UN 1566	Poison	II	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Beryllium, *metal powder*	6.1	UN 1567	Poison, Flammable Solid	II	1,2	1,2	Segregation same as for flammable solids
	Beryllium nitrate	5.1	UN 2464	Oxidizer, Poison	II	1,2	1,2	Keep cool. If packaged in a liner within a wooden barrel, fiber drum or plywood drum or in plastic bags within a fiberboard box, stow 'away from' sources of heat
	Bhusa	4.1	UN 1327	None	III	1,2	1,2	Stow 'away from' animal or vegetable oils
	Bifluorides, n.o.s.	8	UN 1740	Corrosive	II	1,2	1,2	Keep dry
	Bis-(4-tert-butyl cyclohexyl) perdicarbonate, *technical pure*	5.2	UN 2154	Organic Peroxide	II	1	5	Maximum transport temperature 30 deg C
	2,2-Bis-(tert-butylperoxy) butane, *maximum concentration 55% in solution*	5.2	UN 2111	Organic Peroxide	II	1	5	
	1,1-Bis-(tert-butylperoxy) cyclohexane, *maximum concentration 77% in solution*	5.2	UN 2180	Organic Peroxide	II	1	5	
	1,2-Bis-(tert-butylperoxy) cyclohexane, *maximum concentration 77% in solution*	5.2	UN 2181	Organic Peroxide	II	1	5	
	1,1-Bis-(tert-butylperoxy) cyclohexane, *technical pure*	5.2	UN 2179	Organic Peroxide	II	1	5	
	1,4-Bis-(2-tert-butylperoxy isopropyl) benzene, *or* ,1,3-bis-(2-tert-butylperoxy isopropyl) benzene, *and mixtures thereof, (including technical pure or in a concentration of more than 40% with inert solid)*	5.2	UN 2112	Organic Peroxide	II	1	5	
	1,1-Bis-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane, *technical pure*	5.2	UN 2145	Organic Peroxide	II	1	5	
	1,1-Bis-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane, *maximum concentration 57% in solvent*	5.2	UN 2146	Organic Peroxide	II	1	5	
	1,1-Bis-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane, *maximum concentration 58% with inert solid*	5.2	UN 2147	Organic Peroxide	II	1	5	
	2,2-Bis-(4,4-di-tert-butylperoxy cyclohexyl) propane, *maximum concentration 42% with inert solid*	5.2	UN 2168	Organic Peroxide	II	1	5	
	Bis-(1-hydroxy cyclohexyl) peroxide, *technical pure*	5.2	UN 2148	Organic Peroxide	II	1	5	
	Bis-(2-methylbenzoyl)peroxide, *with at least 15% water*	5.2	UN 2593	Organic Peroxide	I	1	5	Maximum transport temperature 30 deg C
	Bis-(3,5,5-trimethyl-1,2-dioxolanyl-3)peroxide, *as a paste with at least 50% phlegmatizer*	5.2	UN 2597	Organic Peroxide	II	1	5	Maximum transport temperature 30 deg C
N	Black powder, compressed	1.1D	UN 0028	Explosive (1.1D)	--	--	--	
N	Black powder, *granular or as meal*	1.1D	UN 0027	Explosive (1.1D)	--	--	--	
	Blasting cap assemblies, non electric	1.4B	UN 0361	Explosive (1.4B)	--	1,3	1,3	
N	Blasting cap assemblies, non-electric	1.1B	UN 0360	Explosive (1.1B)	--	--	--	
	Blasting caps, electric	1.4 B	UN 0255	Explosive (1.4B)	--	1,2	5	Portable magazine or metal locker. Do not handle blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded
N	Blasting caps, electric	1.1B	UN 0030	Explosive (1.1B)	--	--	--	
	Blasting caps, non-electric	1.4 B	UN 0267	Explosive (1.4B)	--	1,2	5	Portable magazine or metal locker. Do not handle blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded
N	Blasting caps, non-electric	1.1B	UN 0029	Explosive (1.1B)	--	--	--	
	Bleaching powder. *See* Calcium hypochlorite *mixtures, dry, containing 39% or less, but more than 10% available chlorine*							
	Blue asbestos. *See* Asbestos, blue							
N	Bombs, photo-flash	1.1D	UN 0038	Explosive (1.1D)	--	--	--	
N	Bombs, photo-flash	1.1F	UN 0037	Explosive (1.1F)	--	--	--	
N	Bombs, photo-flash	1.2G	UN 0039	Explosive (1.2G)	--	--	--	
N	Bombs, photo-flash	1.3G	UN 0299	Explosive (1.3G)	--	--	--	
	Bombs, smoke, *containing a corrosive liquid, non-explosive, without initiating device*	8	UN 2028	Corrosive	II	1,2	5	Keep dry. Stow 'away from' living quarters
N	Bombs, *with bursting charge*	1.1D	UN 0034	Explosive (1.1D)	--	--	--	
N	Bombs, *with bursting charge*	1.2D	UN 0035	Explosive (1.2D)	--	--	--	
N	Bombs, *with bursting charge*	1.1F	UN 0033	Explosive (1.1F)	--	--	--	
N	Bombs, *with bursting charge*	1.2F	UN 0291	Explosive (1.2F)	--	--	--	
N	Boosters, with detonator	1.1B	UN 0225	Explosive (1.1B)	--	--	--	
N	Boosters, with detonator	1.2B	UN 0268	Explosive (1.2B)	--	--	--	
N	Boosters, *without detonator*	1.1D	UN 0042	Explosive (1.1D)	--	--	--	
N	Boosters, *without detonator*	1.2D	UN 0283	Explosive (1.2D)	--	--	--	
	Borate and chlorate, *mixtures*	5.1	UN 1458	Oxidizer	II	1,2	5	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Bordeaux arsenites, *liquid*	6.1	UN 1568	Poison	I	1,2	1,2	
	Bordeaux arsenites, *solid*	6.1	UN 1568	Poison	II	1,2	1,2	
	Borneol	4.1	UN 1312	None. Package to be marked 'Class 4.1'	III	1,2	1,2	
	Boron trichloride	2.3	UN 1741	Poison Gas, Corrosive	--	1	5	Shade from radiant heat. Stow 'away from' foodstuffs and living quarters
	Boron trifluoride	2.3	UN 1008	Poison Gas	--	1	5	Stow 'away from foodstuffs and living quarters
	Boron trifluoride acetic acid complex	8	UN 1742	Corrosive	II	1,2	1,2	
	Boron trifluoride diethyl etherate	8	UN 2604	Corrosive	II	1,2	1	Segregation same as for flammable liquids
	Boron trifluoride propionic acid complex	8	UN 1743	Corrosive	II	1,2	1,2	
	Box toe gum. *See* Nitrocellulose							
	Brake fluid, hydraulic	3.2	UN 1118	Flammable Liquid	II	1,2	1	
	Bromates, *(inorganic)*, n.o.s.	5.1	UN 1450	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Bromine, *(and solutions)*	8	UN 1744	Corrosive, Poison	I	1	5	Keep cool

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Bromine pentafluoride	8	UN 1745	Corrosive, Poison, Oxidizer	I	1	5	Shade from radiant heat. Stow 'away from' all other corrosives
	Bromine trifluoride	8	UN 1746	Corrosive, Poison	I	1	5	Shade from radiant heat
	Bromoacetic acid, *solid*	8	UN 1938	Corrosive	II	1,2	1,2	Keep dry
	Bromoacetic acid, *solution*	8	UN 1938	Corrosive	II	1,2	1,2	Glass carboys in hampers not permitted under deck
	Bromoacetone	6.1	UN 1569	Poison	II	1	5	Segregation same as for flammable liquids
	Bromoacetyl bromide	8	UN 2513	Corrosive	II	1	1	Glass carboys prohibited on passenger vessels
	Bromobenzene	3.3	UN 2514	Flammable Liquid	III	1,2	1,2	
	Bromobenzyl cyanide	6.1	UN 1694	Poison	I	1	5	Keep cool
	2-Bromobutane	3.2	UN 2339	Flammable Liquid	II	1,2	1	
	Bromochloromethane	9	UN 1887	None	III	1,2	1,2	Stow 'away from' foodstuffs
	1-Bromo-2,3-epoxypropane	6.1	UN 2558	Poison	I	1	5	
	2-Bromoethyl ethyl ether	3.2	UN 2340	Flammable Liquid	II	1,2	1	
	Bromoform	6.1	UN 2515	St. Andrews Cross	III	1,2	1,2	
	1-Bromo-3-methylbutane	3.2	UN 2341	Flammable Liquid	II	1,2	1	
	Bromomethylpropanes	3.2	UN 2342	Flammable Liquid	II	1,2	1	
	Bromomethylpropanes	3.3	UN 2342	Flammable Liquid	II	1,2	1,2	
	2-Bromopentane	3.2	UN 2343	Flammable Liquid	II	1,2	1	
	Bromopropanes	3.2	UN 2344	Flammable Liquid	II	1,2	1	
	Bromopropanes	3.3	UN 2344	Flammable Liquid	II	1,2	1,2	
	3-Bromopropyne	3.2	UN 2345	Flammable Liquid	II	1,2	1	
	Bromotrifluoromethane	2.2	UN 1009	Nonflammable Gas	--	1,2	1,2	
	Brucine	6.1	UN 1570	Poison	II	1,2	1,2	
N	Bursters, *explosive*	1.1D	UN 0043	Explosive (1.1D)	--	--	--	
	Butadiene, *inhibited*	2.1	UN 1010	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Butanedione	3.2	UN 2346	Flammable Liquid	II	1,2	1	
	Butane *or butane mixtures*	2.1	UN 1011	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Butane-1-thiol	3.2	UN 2347	Flammable Liquid	II	1,2	1	
	sec-Butanol	3.3	UN 1121	Flammable Liquid	II	1,2	1,2	
	tert-Butanol	3.2	UN 1122	Flammable Liquid	II	1,2	1	
	Butanol	3.3	UN 1120	Flammable Liquid	II	1,2	1,2	
	Butoxyl	3.3	UN 2708	Flammable Liquid	III	1,2	1,2	
	sec-Butyl acetate	3.2	UN 1124	Flammable Liquid	II	1,2	1	
	n-Butyl acetate	3.2	UN 1123	Flammable Liquid	II	1,2	1	
	Butylacrylate, *inhibited*	3.3	UN 2348	Flammable Liquid	II	1,2	1,2	
	Butyl alcohol. *See* Butanol							
	sec-Butyl alcohol. *See* sec-Butanol							
	tert-Butyl alcohol. *See* tert-Butanol							
	n-Butylamine	3.2	UN 1125	Flammable Liquid	II	1,2	1	
	Butyl benzenes	3.3	UN 2709	Flammable Liquid	III	1,2	1,2	
	n-Butyl-4,4-bis-(tert-butyl-peroxy) valerate, *maximum concentration 52% with inert solid*	5.2	UN 2141	Organic Peroxide	II	1	5	
	n-Butyl-4,4-bis-(tert-butyl-peroxy) valerate, *technical pure*	5.2	UN 2140	Organic Peroxide	II	1	5	
	n-Butyl bromide	3.3	UN 1126	Flammable Liquid	II	1,2	1,2	
	n-Butyl chloride	3.2	UN 1127	Flammable Liquid	II	1,2	1	
	tert-Butyl cumene peroxide. *See* tert-Butyl cumyl peroxide							
	tert-Butyl cumyl peroxide, *technical pure*	5.2	UN 2091	Organic Peroxide	II	1	5	
	tert-Butyl diperoxyphthalate. *See* tert-Butyl diperphthalate							
	tert-Butyl diperphthalate, *maximum concentration 55% as a paste*	5.2	UN 2108	Organic Peroxide	II	1	5	
	tert-Butyl diperphthalate, *maximum concentration 55% in solution*	5.2	UN 2107	Organic Peroxide	II	1	5	
	tert-Butyl diperphthalate, *technical pure*	5.2	UN 2106	Organic Peroxide	II	1	5	
	Butylene	2.1	UN 1012	Flammable Gas	--	1,2	1	Stow 'away from living quarters
	Butyl ether. *See* Dibutyl ethers							
	n-Butyl formate	3.2	UN 1128	Flammable Liquid	II	1,2	1	
	tert-Butyl hydroperoxide, *in a concentration over 72% to maximum 90% with water*	5.2	UN 2094	Organic Peroxide	I	1	5	
	tert-Butyl hydroperoxide, *maximum concentration 80% in di-tert-butyl peroxide and/or solvent*	5.2	UN 2092	Organic Peroxide, Flammable Liquid (only if flashpoint of solvent is 23 deg C. or below)	I	1	5	
	tert-Butyl hydroperoxide, *maximum concentration 72% with water*	5.2	UN 2093	Organic Peroxide	II	1	5	
	tert-Butyl isocyanate	3.2	UN 2484	Flammable Liquid, Poison	I	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	n-Butyl isocyanate	3.2	UN 2485	Flammable Liquid, Poison	II	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	n-Butyl methacrylate	3.3	UN 2227	Flammable Liquid	III	1,2	1,2	
	Butyl methyl ether	3.2	UN 2350	Flammable Liquid	II	1,2	1	
	tert-Butyl monoperoxyphthalate. *See* tert-Butyl monoperphthalate							
	tert-Butyl monoperphthalate, *technical pure*	5.2	UN 2105	Organic Peroxide	II	1	5	
	Butyl nitrite	3.2	UN 2351	Flammable Liquid	II	1,2	1	
	tert-Butyl peracetate, *in a concentration of more than 52% to a maximum concentration of 76% in solution*	5.2	UN 2095	Organic Peroxide	II	1	5	
	tert-Butyl peracetate, *maximum concentration 52% in solution*	5.2	UN 2096	Organic Peroxide	II	1	5	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	tert-Butyl perbenzoate, *maximum concentration 75% in solution*	5.2	UN 2098	Organic Peroxide	II	1	5	
	tert-Butyl perbenzoate, *technical pure or in a concentration of more than 75% in solution*	5.2	UN 2097	Organic Peroxide	II	1	5	
	tert-Butyl percrotonate, *maximum concentration 76% in solution*	5.2	UN 2183	Organic Peroxide	II	1	5	
	n-Butyl perdicarbonate, *in a concentration of more than 27% to a maximum concentration of 52% in solution*	5.2	UN 2169	Organic Peroxide	II	1	5	Maximum transport temperature -10 deg C
	n-Butyl perdicarbonate, *maximum concentration 27% in solution*	5.2	UN 2170	Organic Peroxide	II	1	5	Maximum transport temperature 0 deg C
	tert-Butyl perdiethylacetate, *(in a maximum concentration of 33%)*, with tert-butyl perbenzoate, *(in a maximum concentration of 33%), and solvent*	5.2	UN 2551	Organic Peroxide	II	1	5	
	tert-Butyl perdiethylacetate, *technical pure*	5.2	UN 2144	Organic Peroxide	II	1	5	
	tert-Butyl per-(2-ethyl) hexanoate, *technical pure*	5.2	UN 2143	Organic Peroxide	II	1	5	Maximum transport temperature 20 deg C
	tert-Butyl perisobutyrate, *in a concentration of more than 52% to a maximum concentration of 77% in solution*	5.2	UN 2142	Organic Peroxide	II	1	5	Maximum transport temperature 15 deg C
	tert-Butyl perisobutyrate, *maximum concentration 52% in solution*	5.2	UN 2562	Organic Peroxide	II	1	5	Maximum transport temperature 15 deg C
	tert-Butyl permaleate, *maximum concentration 55% as a paste*	5.2	UN 2101	Organic Peroxide	II	1	5	
	tert-Butyl permaleate, *maximum concentration 55% in solution*	5.2	UN 2100	Organic Peroxide	II	1	5	
	tert-Butyl permaleate, *technical pure*	5.2	UN 2099	Organic Peroxide	II	1	5	
	tert-Butyl per-neodecanoate, *maximum concentration 77% in solution*	5.2	UN 2177	Organic Peroxide	II	1	5	Maximum transport temperature 5 deg C
	tert-Butylperneodecanoate, *technical pure*	5.2	UN 2594	Organic Peroxide	II	1	5	Maximum transport temperature -5 deg C
	tert-Butyl peroxide, *technical pure*	5.2	UN 2102	Organic Peroxide, Flammable Liquid	II	1	5	
	tert-Butyl peroxyacetate. *See* tert-Butyl peracetate							
	tert-Butyl peroxybenzoate. *See* tert-Butyl perbenzoate							
	tert-Butyl peroxycrotonate. *See* tert-Butyl percrotonate							
	n-Butyl peroxydicarbonate. *See* n-Butyl perdicarbonate							
	tert-Butyl peroxydiethylacetate. *See* tert-Butyl perdiethylacetate							
	tert-Butyl peroxydiethylacetate with tert-butyl peroxybenzoate. *See* tert-Butyl perdiethylacetate with tert-butyl perbenzoate							
	tert-Butyl peroxy-(2-ethyl) hexanoate. *See* tert-Butyl per-(2-ethyl) hexanoate							
	tert-Butyl peroxyisobutyrate. *See* tert-Butyl perisobutyrate							
	tert-Butyl peroxy isopropyl carbonate, *technical pure*	5.2	UN 2103	Organic Peroxide	II	1	5	
	tert-Butyl peroxymaleate. *See* tert-Butyl permaleate							
	tert-Butyl peroxy-neodecanoate. *See* tert-Butyl per-neodecanoate							
	3-tert-Butylperoxy-3-phenyl phthalide, *technical pure*	5.2	UN 2596	Organic Peroxide	II	1	5	
	tert-Butyl peroxypivalate. *See* tert-Butyl perpivalate							
	tert-Butyl peroxy-3,5,5-trimethyl hexanoate, *technical pure*	5.2	UN 2104	Organic Peroxide	II	1	5	
	tert-Butyl perpivalate, *maximum concentration 77% in solution*	5.2	UN 2110	Organic Peroxide	II	1	5	Maximum transport temperature 0 deg C
	Butylphenols, *liquid*	6.1	UN 2228	St. Andrews Cross	III	1,2	1,2	
	Butylphenols, *solid*	6.1	UN 2229	St. Andrews Cross	III	1,2	1,2	
	Butyl phosphoric acid. *See* Acid butyl phosphate							
	Butyl propionate	3.3	UN 1914	Flammable Liquid	II	1,2	1,2	
	Butyl trichlorosilane	8	UN 1747	Corrosive	II	1	1	Keep dry. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Butyl vinyl ether	3.2	UN 2352	Flammable Liquid	II	1,2	1	
	Butyraldehyde	3.2	UN 1129	Flammable Liquid	II	1,2	1	
	Butyrone	3.3	UN 2710	Flammable Liquid	III	1,2	1,2	
	Butyronitrile	3.2	UN 2411	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Butyryl chloride	3.2	UN 2353	Flammable Liquid, Poison	II	1	1	Keep dry. Shade from radiant heat
	Cacodylic acid	6.1	UN 1572	Poison	II	1,2	5	Stow 'away from' acids
	Cadmium compounds	6.1	UN 2570	St. Andrews Cross	III	1,2	1,2	
	Caesium, *metal*	4.3	UN 1407	Dangerous When Wet	I	1,2	5	
	Caesium nitrate	5.1	UN 1451	Oxidizer	III	1,2	1,2	
	Caesium, *powdered*. *See* Pyrophoric metals							
	Calcium arsenate	6.1	UN 1573	Poison	II	1,2	1,2	
	Calcium arsenate and arsenite, *solid mixtures*	6.1	UN 1574	Poison	II	1,2	1,2	
	Calcium bisulphite, *solution*. *See* Calcium hydrogen sulphite, *solution*							
	Calcium carbide	4.3	UN 1402	Dangerous When Wet	II	1,2	1,2	Stow 'away from' copper, its alloys and its salts
	Calcium chlorate	5.1	UN 1452	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Calcium chlorate, *aqueous solution*	5.1	UN 2429	Oxidizer	II	1,2	1	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Calcium chlorite	5.1	UN 1453	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals and cyanides, 'separated from' ammonium compounds
	Calcium cyanamide, *containing more than 0.1% of calcium carbide*	4.3	UN 1403	Dangerous When Wet	III	1,2	1,2	
	Calcium cyanide	6.1	UN 1575	Poison	I	1,2	1,2	Stow 'away from' acids
	Calcium dithionite	4.2	UN 1923	Spontaneously Combustible	III	1,2	5	Keep dry
	Calcium hydride	4.3	UN 1404	Dangerous When Wet	I	1,2	5	
	Calcium hydrogen sulphite, *solution*	8	UN 1901	Corrosive	II	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Calcium hypochlorite, *dry, including mixtures containing more than 39% available chlorine (8.8% available oxygen)*	5.1	UN 1748	Oxidizer	II	1,2	1,2	
	Calcium hypochlorite mixtures, *dry containing 39% or less, but more than 10% available chlorine*	9	UN 2208	None	III	1,2	1,2	Stow 'separated from' flammable liquids and acids, 'away from' combustible materials
	Calcium, *metal and alloys, non-pyrophoric*	4.3	UN 1401	Dangerous When Wet	II	1,2	5	
	Calcium nitrate	5.1	UN 1454	Oxidizer	III	1,2	1,2	
	Calcium perchlorate	5.1	UN 1455	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals
	Calcium permanganate	5.1	UN 1456	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and hydrogen peroxide
	Calcium peroxide	5.1	UN 1457	Oxidizer	II	1,2	1,2	Keep dry
	Calcium phosphide	4.3	UN 1360	Dangerous When Wet	I	1	5	
	Calcium, *powdered*	4.2	UN 1855	Spontaneously Combustible	II	1	5	
	Calcium resinate, *fused*	4.1	UN 1314	Flammable Solid	III	1,2	1,2	
	Calcium resinate, *technical pure*	4.1	UN 1313	Flammable Solid	III	1,2	1,2	
	Calcium silicide	4.3	UN 1405	Dangerous When Wet	II	1,2	1,2	
	Calcium silicon	4.3	UN 1406	Dangerous When Wet	III	1,2	1,2	
	Camphor oil	3.3	UN 1130	Flammable Liquid	III	1,3	1,3	
	Capryloyl peroxide. *See* n-Octanoyl peroxide							
	Caps, blasting. *See* Blasting caps							
	Caps, percussion	1.4 S	UN 0044	None. Package to be marked '1.4 S'	–	1,3	1,3	
	Caps, toy. *See* Amorces							
	Carbolic acid. *See* Phenol							
	Carbon, activated	4.2	UN 1362	Spontaneously Combustible	III	1,3	1,3	Keep cool
	Carbon bisulphide. *See* Carbon disulphide							
	Carbon dioxide	2.2	UN 1013	Nonflammable Gas	–	1,2	1,2	
	Carbon dioxide and nitrous oxide, *mixtures*	2.2	UN 1015	Nonflammable Gas	–	1,2	1,2	
	Carbon dioxide and oxygen, *mixtures*	2.2	UN 1014	Nonflammable Gas	–	1,2	1,2	
	Carbon disulphide	3.1	UN 1131	Flammable Liquid, Poison	I	1	5	Keep cool. Not permitted on any vessel carrying explosives
	Carbon monoxide	2.1	UN 1016	Flammable Gas, Poison Gas	–	1	5	Stow 'away from' living quarters
	Carbon, non-activated, *of animal or vegetable origin*	4.2	UN 1361	Spontaneously Combustible	III	1,3	1,3	Keep cool. Stow 'away from' oily matter
	Carbon paper. See Paper, *treated with unsaturated oils, incompletely dried*							
	Carbon remover, *liquid*	3.2	UN 1132	Flammable Liquid	II	1,2	1	
	Carbon sulphide. *See* Carbon disulphide							
	Carbon tetrabromide	6.1	UN 2516	St. Andrews Cross	III	1,2	1,2	Shade from radiant heat
	Carbon tetrachloride	6.1	UN 1846	Poison	II	1,2	1,2	
	Carbonyl chloride. See Phosgene							
	Carbonyl fluoride	2.3	UN 2417	Poison Gas	–	1	5	Stow 'away from' living quarters
	Carbonyl sulfide	2.3	UN 2204	Poison Gas, Flammable Gas	–	1	5	Stow 'away from' living quarters
N	Cartouche	2.1	UN 2037	Flammable Gas	–			
	Cartridge cases, empty, with primer. *See* Cases, cartridges, empty, with primer							
N	Cartridges, flash	1.1G	UN 0049	Explosive (1.1G)	–	–	–	
N	Cartridges, flash	1.3G	UN 0050	Explosive (1.3G)	–	–	–	
	Cartridges for weapons, blank	1.4 C	UN 0338	Explosive (1.4C)	–	1,3	1,3	
	Cartridges for weapons, blank	1.4 S	UN 0014	None. Package to be marked '1.4 S'	–	1,3	1,3	
N	Cartridges for weapons, blank	1.1C	UN 0326	Explosive (1.1C)	–	–	–	
N	Cartridges for weapons, blank	1.3C	UN 0327	Explosive (1.3C)	–	–	–	
	Cartridges for weapons, *other than blank*	1.4 S	UN 0012	None. Package to be marked '1.4 S'	–	1,3	1,3	
N	Cartridges for weapons, *with bursting charge*	1.1E	UN 0006	Explosive (1.1E)	–	–	–	
N	Cartridges for weapons, *with bursting charge*	1.2E	UN 0321	Explosive (1.2E)	–	–	–	
N	Cartridges for weapons, *with bursting charge*	1.1F	UN 0005	Explosive (1.1F)	–	–	–	
N	Cartridges for weapons, *with bursting charge*	1.2F	UN 0007	Explosive (1.2F)	–	–	–	
N	Cartridges for weapons, *with bursting charge*	1.4F	UN 0348	Explosive (1.4F)	–	–	–	
	Cartridges for weapons, with inert projectile	1.4 C	UN 0339	Explosive (1.4C)	–	1,3	1,3	
N	Cartridges for weapons, with inert projectile	1.2C	UN 0328	Explosive (1.2C)	–	–	–	
	Cartridges, oil well	1.4 C	UN 0278	Explosive (1.4C)	–	1,3	1,3	
N	Cartridges, oil well	1.3C	UN 0277	Explosive (1.3C)	–	–	–	
	Cartridges, power device	1.4 C	UN 0276	Explosive (1.4C)	–	1,3	1,3	
	Cartridges, power device	1.4 S	UN 0323	None. Package to be marked '1.4 S'	–	1,3	1,3	
N	Cartridges, power device	1.2C	UN 0381	Explosive (1.2C)	–	–	–	
N	Cartridges, power device	1.3C	UN 0275	Explosive (1.3C)	–	–	–	
	Cartridges, safety. *See* Cartridges for weapons, *other than blank (UN 0012)* or Cartridges for weapons, blank *(UN 0014)*							
	Cartridges, signal	1.4 G	UN 0312	Explosive (1.4G)	–	1,3	1,3	
N	Cartridges, signal	1.3G	UN 0054	Explosive (1.3G)	–	–	–	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Cases, cartridge, empty, with primer	1.4C	UN 0379	Explosive (1.4C)	--	1,3	1,3	
	Cases, cartridges, empty, with primer	1.4 S	UN 0055	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Casinghead gasoline	3.1	UN 1257	Flammable Liquid	II	1,2	5	
	Caustic alkali liquids, n.o.s.	8	UN 1719	Corrosive	II	1,2	1,2	
	Caustic potash. *See* Potassium hydroxide, *solution*							
	Caustic potash, solid. *See* Potassium hydroxide, *solid*							
	Celluloid, *in blocks, rods, rolls, sheets, tubes, etc. (scrap excluded)*	4.1	UN 2000	Flammable Solid	III	1,2	1,2	
	Celluloid, *scrap*	4.2	UN 2002	Spontaneously Combustible	II	1	5	
	Cement, adhesive, *(containing a flammable liquid)*, n.o.s.	3.2 3.3	UN 1133 UN 1133	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Cement, *(liquid)*, n.o.s.. *See* Cement, adhesive, *(containing a flammable liquid)*, n.o.s							
	Charcoal, activated. *See* Carbon, activated							
	Charcoal, non-activated, of animal or vegetable origin. See Carbon, non-activated							
N	Charges, demolition	1.1D	UN 0048	Explosive (1.1D)	--	--	--	
N	Charges, depth	1.1D	UN 0056	Explosive (1.1D)	--	--	--	
N	Charges, propelling, for cannon	1.1C	UN 0279	Explosive (1.1C)	--	--	--	
N	Charges, propelling, for cannon	1.3C	UN 0242	Explosive (1.3C)	--	--	--	
N	Charges, propelling, for rocket motors	1.1C	UN 0271	Explosive (1.1C)	--	--	--	
N	Charges, propelling, for rocket motors	1.3C	UN 0272	Explosive (1.3C)	--	--	--	
N	Charges, propelling, for rocket motors, *composite mixture*	1.1C	UN 0273	Explosive (1.1C)	--	--	--	
N	Charges, propelling, for rocket motors, *composite mixture*	1.3C	UN 0274	Explosive (1.3C)	--	--	--	
N	Charges, shaped, *commercial, without detonator*	1.1D	UN 0059	Explosive (1.1D)	--	--	--	
	Charges, shaped, flexible, linear, *metal clad*	1.4 D	UN 0237	Explosive (1.4D)	--	1,3	1,3	
N	Charges, shaped, flexible, linear, *metal clad*	1.1D	UN 0288	Explosive (1.1D)	--	--	--	
N	Charges, supplementary, explosive	1.1D	UN 0060	Explosive (1.1D)	--	--	--	
	Chloral, *anhydrous, inhibited*	6.1	UN 2075	Poison	II	1	5	
	Chlorate and borate, mixtures. See Borate and chlorate *mixtures*							
	Chlorate and magnesium chloride, *mixtures*	5.1	UN 1459	Oxidizer	II	1,2	5	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Chlorates, *(inorganic)*, n.o.s.	5.1	UN 1461	Oxidizer	II	1,2	5	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Chlorinated anthracene oil	6.1	UN 2230	Poison	II	1,3	1,3	Stow 'away from' sources of heat. Segregation same as for flammable liquids
	Chlorine	2.3	UN 1017	Poison Gas, Oxidizer	--	1	5	Stow 'away from' living quarters and organic materials, 'separated from' acetylene, ammonia, diborane and hydrogen
	Chlorine trifluoride	2.3	UN 1749	Poison Gas, Oxidizer, Corrosive	--	1,2	5	Stow 'away from' food stuffs and living quarters
	Chlorites, *(inorganic)*, n.o.s.	5.1	UN 1462	Oxidizer	II	1,2	5	Stow 'away from' powdered metals and cyanides, 'separated from' ammonium compounds
	Chloroacetaldehyde	6.1	UN 2232	Poison	II	1	5	
	Chloroacetic acid, *liquid*	8	UN 1750	Corrosive	II	1,2	1,2	Glass carboys in hampers not permitted under deck
	Chloroacetic acid, *solid*	8	UN 1751	Corrosive	II	1,2	1,2	Keep dry
	Chloroacetone, *stabilized*	6.1	UN 1695	Poison	II	1	5	
	Chloroacetophenone	6.1	UN 1697	Poison	II	1	5	
	Chloroacetyl chloride	8	UN 1752	Corrosive	II	1	5	Keep dry
	Chloroanilines, *liquid*	6.1	UN 2019	Poison	II	1,2	1,2	
	Chloroanilines, *solid*	6.1	UN 2018	Poison	II	1,2	1,2	
	Chlorobenzene	3.3	UN 1134	Flammable Liquid	II	1,3	1,3	
	Chlorobenzotrifluorides	3.3	UN 2234	Flammable Liquid	III	1,2	1,2	
	p-Chlorobenzoyl peroxide, *maximum concentration 52% as a paste*	5.2	UN 2114	Organic Peroxide	II	1	5	
	p-Chlorobenzoyl peroxide, *maximum concentration 52% in solution*	5.2	UN 2115	Organic Peroxide	II	1	5	
	p-Chlorobenzoyl peroxide, *maximum concentration 75% with water*	5.2	UN 2113	Organic Peroxide	II	1	5	
	p-Chlorobenzyl chloride	6.1	UN 2235	St. Andrews Cross	III	1,2	1,2	
	Chlorodifluorobromomethane	2.2	UN 1974	Nonflammable Gas	--	1,2	1,2	
	Chlorodifluoromethane	2.2	UN 1018	Nonflammable Gas	--	1,2	1,2	
	Chlorodifluoromethane and chloropentafluoroethane, *mixture with a fixed boiling point containing about 49% of chlorodifluoromethane*	2.2	UN 1973	Nonflammable Gas	--	1,2	1,2	
	Chlorodinitrobenzene	6.1	UN 1577	Poison	II	1,2	1,2	
	2-Chloroethanol	3.3	UN 1135	Flammable Liquid	II	1,2	1,2	
	Chloroform	6.1	UN 1888	Poison	II	1,2	1,2	
	Chloromethyl ethyl ether	3.2	UN 2354	Flammable Liquid, Poison	II	1,3	5	Keep cool
	3-Chloro-4-methylphenyl isocyanate	6.1	UN 2236	Poison	II	1,2	1,2	Shade from radiant heat
	Chloronitroanilines	6.1	UN 2237	St. Andrews Cross	III	1,2	1,2	
	Chloronitrobenzenes *(o-, m-, p-)*	6.1	UN 1578	Poison	II	1,2	1,2	
	p-Chloro-o-anisidine	6.1	UN 2233	St. Andrews Cross	III	1,2	1,2	
	Chloro-o-nitrotoluene	6.1	UN 2433	St. Andrews Cross	III	1,2	1,2	
	4-Chloro-o-toluidine hydrochloride	6.1	UN 1579	St. Andrews Cross	III	1,2	1,2	
	Chloropentafluoroethane	2.2	UN 1020	Nonflammable Gas	--	1,2	1,2	
	m-Chloroperoxybenzoic acid, *maximum concentration 86%*	5.2	UN 2755	Organic Peroxide	II	1	5	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Chlorophenates, *liquid*	6.1	UN 2021	St. Andrews Cross	III	1,2	1,2	
	Chlorophenates, *solid*	6.1	UN 2020	St. Andrews Cross	III	1,2	1,2	
	Chlorophenols, *liquid*	6.1	UN 2021	St. Andrews Cross	III	1,2	1,2	
	Chlorophenols, *solid*	6.1	UN 2020	St. Andrews Cross	III	1,2	1,2	
	Chlorophenyl trichlorosilane	8	UN 1753	Corrosive	II	1	1	Keep dry
	Chloropicrin	6.1	UN 1580	Poison	I	1	5	
	Chloropicrin and methyl bromide, *mixtures*	6.1	UN 1581	Poison	--	1	5	Shade from radiant heat
	Chloropicrin and methyl chloride, *mixtures*	6.1	UN 1582	Poison	--	1	5	
	Chloropicrin mixtures, n.o.s.	6.1	UN 1583	Poison	I/II	1	5	
		6.1	UN 1583	St. Andrews Cross	III	1,2	1,2	
	Chloroplatinic acid, *solid*	8	UN 2507	Corrosive	III	1,2	1,2	
	Chloroprene, *inhibited*	3.2	UN 1991	Flammable Liquid	I	1,2	1	
	2-Chloropropane	3.1	UN 2356	Flammable Liquid	I	1,3	5	Keep cool
	2-Chloropropene	3.1	UN 2456	Flammable Liquid	I	1,3	5	Keep cool
	Chloropropionic acid	8	UN 2511	Corrosive	III	1,2	1,2	Glass carboys prohibited on passenger vessels
	Chlorosulphonic acid, *with or without sulphur trioxide*	8	UN 1754	Corrosive	I	1	1	Glass carboys prohibited on passenger vessels
	Chlorotetrafluoroethane	2.2	UN 1021	Nonflammable Gas	--	1,2	1,2	
	Chlorotoluenes *(o-, m-, p-)*	3.3	UN 2238	Flammable Liquid	III	1,2	1,2	
	Chlorotoluidines	6.1	UN 2239	St. Andrews Cross	III	1,2	1,2	
	Chlorotrifluoroethane. See Trifluorochloroethane							
	Chlorotrifluoroethylene. See Trifluorochloroethylene							
	Chlorotrifluoromethane	2.2	UN 1022	Nonflammable Gas	--	1,2	1,2	
	Chromic acid, *solid. See* Chromium trioxide, *anhydrous*							
	Chromic acid, *solution*	8	UN 1755	Corrosive	II	1	1	
	Chromic anhydride. *See* Chromium trioxide, *anhydrous*							
	Chromic fluoride, *solid*	8	UN 1756	Corrosive	II	1,2	1,2	
	Chromic fluoride, *solution*	8	UN 1757	Corrosive	II	1,2	1,2	
	Chromium oxychloride	8	UN 1758	Corrosive	I	1	1	Keep dry Glass carboys prohibited on passenger vessels
	Chromium trioxide, *anhydrous*	5.1	UN 1463	Oxidizer, Corrosive	II	1,2	1,2	Stow 'away from' foodstuffs
	Chromosulphuric acid	8	UN 2240	Corrosive	I	1,2	1	Carboys not permitted on passenger vessels and permitted only on deck on cargo vessels
	Chrysotile. See Asbestos, white							
	Cigarettes, *self-lighting*	4.1	UN 1867	Flammable Solid	III	1,2	1,2	Keep dry
	Cleaning compound. *See* Flammable liquid preparations, n.o.s							
	Cleaning compounds, *liquid, corrosive*	8	UN 1759	Corrosive	II	1,2	1,2	
	Coal gas	2.1	UN 1023	Flammable Gas, Poison Gas	--	1	5	Stow 'away from' living quarters
	Coal tar distillate	3.2	UN 1136	Flammable Liquid	--	1,2	1	
		3.3	UN 1136	Flammable Liquid	--	1,2	1,2	
	Coal tar light oil	3.2	UN 1137	Flammable Liquid	--	1,2	1	
		3.3	UN 1137	Flammable Liquid	--	1,2	1,2	
	Coal tar naphtha	3.2	UN 2553	Flammable Liquid	II	1,2	1	
	Coal tar oil. *See* Coal tar distillate							
	Coating solution	3.2	UN 1139	Flammable Liquid	II	1,2	1	
		3.3	UN 1139	Flammable Liquid	II	1,2	1,2	
	Cobalt naphthenates, *powder*	4.1	UN 2001	Flammable Solid	III	1,2	1,2	
	Cobalt resinate, *precipitated*	4.1	UN 1318	Flammable Solid	III	1,2	1,2	
	Cocculus, *solid*	6.1	UN 1584	Poison	II	1,2	1,2	
	Cologne spirits. *See* Ethanol							
	Columbian spirits. *See* Methanol							
	Components, explosive train, n.o.s.	1.4B	UN 0383	Explosive (1.4B)	--	1,3	1,3	
	Components, explosive train, n.o.s.	1.4S	UN 0384	None. Package to be marked '1.4S'	--	1,3	1,3	
N	Components, explosive train, n.o.s.	1.2B	UN 0382	Explosive (1.2B)	--	--	--	
	Compressed *or* liquefied gases, *(flammable, non-toxic)*, n.o.s.	2.1	UN 1954	Flammable Gas	--	1	5	Stow 'away from' living quarters
	Compressed *or* liquefied gases, *(flammable, toxic)*, n.o.s.	2.1	UN 1953	Flammable Gas, Poison Gas	--	1	5	Stow 'away from' living quarters
	Compressed *or* liquefied gases, *(non-flammable, non-toxic)*, n.o.s.	2.2	UN 1956	Nonflammable Gas	--	1,2	1,2	
	Compressed *or* liquefied gases, *(non-flammable, toxic)*, n.o.s.	2.3	UN 1955	Poison Gas	--	1	5	Stow 'away from' living quarters
N	Contrivances, water-activated, *with burster, expelling charge or propelling charge*	1.2L	UN 0248	Explosive (1.2L), Dangerous When Wet	--	--	--	
N	Contrivances, water-activated, *with burster, expelling charge or propelling charge*	1.3L	UN 0249	Explosive (1.3L), Dangerous When Wet	--	--	--	
	Copper acetoarsenite	6.1	UN 1585	Poison	II	1,2	1,2	
	Copper arsenite	6.1	UN 1586	Poison	II	1,2	1,2	
	Copper cyanide	6.1	UN 1587	Poison	II	1,2	1,2	Stow 'away from' acids
	Copra	4.2	UN 1363	None. Package to be marked 'Class 4.2'	III	1,2	1,2	Keep dry. Protect from sparks and open flame
	Cord, detonating, *flexible*	1.4 D	UN 0289	Explosive (1.4D)	--	1,3	1,3	
N	Cord, detonating, *flexible*	1.1D	UN 0065	Explosive (1.1D)	--	--	--	
N	Cord, detonating, *metal clad*	1.1D	UN 0290	Explosive (1.1D)	--	--	--	
N	Cord, detonating, *metal clad*	1.2D	UN 0102	Explosive (1.2D)	--	--	--	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Cord, detonating, mild effect, *metal clad*	1.4 D	UN 0104	Explosive (1.4D)	--	1,3	1,3	
	Cord, igniter	1.4 G	UN 0066	Explosive (1.4G)	--	1,3	1,3	
	Corrosive liquids, n.o.s.	8	UN 1760	Corrosive	II	1	5	For a material that meets only the corrosion to skin criteria of 49 CFR 173.240(a)(1), 'under deck' stowage is also authorized if the description includes the additional entry specified in Sec. 172.203(i)(3)
	Corrosive solids, n.o.s.	8	(UN 1759)	Corrosive	I/II/III	1	5	For a material that meets only the corrosion to skin criteria of 49 CFR 173.240(a)(1), 'under deck' stowage is also authorized if the description includes the additional entry specified in Sec. 172.203(i)(3)
	Cosmetics, n.o.s. *See* Perfumery products							
	Cotton, dry. *See* Fibres, *vegetable, dry*							
	Cotton waste, *oily*	4.2	UN 1364	Spontaneously Combustible	III	1,2	1,2	Keep dry. Stow 'separated from' explosives, animal oils or vegetable oils
	Cotton, *wet or contaminated*	4.2	UN 1365	Spontaneously Combustible	III	1,2	1,2	Keep dry
	Cresols *(o-, m-, p-)*	6.1	UN 2076	Poison	II	1,2	1,2	
	Cresylic acid	6.1	UN 2022	Poison	II	1,2	1,2	
	Crocidolite. *See* Asbestos, blue							
	Crotonaldehyde, *inhibited*	3.2	UN 1143	Flammable Liquid	I	1,2	1	
	Crotonylene	3.1	UN 1144	Flammable Liquid	I	1,3	5	Keep cool
	Cumene hydroperoxide, *technical pure*	5.2	UN 2116	Organic Peroxide	I	1	5	
	Cupric cyanide. See Copper cyanide							
	Cupriethylenediamine, *solution*	8	UN 1761	Corrosive, Poison	II	1,2	1,2	
	Cut-backs, *asphalt or bitumen*	3.2 3.3	UN 1999 UN 1999	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Cutters, cable, explosive	1.4 S	UN 0070	None. Package to be marked 'L4 S'	--	1,3	1,3	
	Cyanide mixtures. *See* Cyanides, *(inorganic)*, n.o.s							
	Cyanides, *(inorganic)*, n.o.s.	6.1 6.1	UN 1588 UN 1588	Poison St. Andrews Cross	I/II III	1,2 1,2	1,2 1,2	Stow 'away from' acids.
	Cyanides, *solutions*	6.1	UN 1935	Poison	I	1,2	1,2	Stow 'away from' acids
	Cyanogen	2.3	UN 1026	Poison Gas, Flammable Gas	--	1	5	Stow 'away from' foodstuffs and living quarters
	Cyanogen bromide	6.1	UN 1889	Poison, Corrosive	I	1	5	Shade from radiant heat. Segregation same as for corrosives
	Cyanogen chloride, *inhibited*	2.3	UN 1589	Poison Gas	--	1	5	
	Cyanuric chloride (*cyanuric trichloride*)	8	UN 2670	Corrosive	II	1,2	1,2	Keep dry
	1,5,9-Cyclododecatriene	8	UN 2518	Corrosive	III	1	5	Stow 'away from' living quarters
	Cycloheptane	3.2	UN 2241	Flammable Liquid	II	1,2	1	
	Cycloheptatriene	3.2	UN 2603	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Cycloheptene	3.2	UN 2242	Flammable Liquid	II	1,2	1	
	Cyclohexane	3.1	UN 1145	Flammable Liquid	II	1,2	5	
	Cyclohexanone	3.3	UN 1915	Flammable Liquid	III	1,2	1,2	
	Cyclohexanone peroxide. *See* 1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide *and mixtures, etc.*							
	Cyclohexene	3.1	UN 2256	Flammable Liquid	II	1,3	5	Keep cool
	Cyclohexene	3.2	UN 2256	Flammable Liquid	II	1,2	1	
	Cyclohexenyl trichlorosilane	8	UN 1762	Corrosive	II	1	1	Keep dry
	Cyclohexyl acetate	3.3	UN 2243	Flammable Liquid	III	1,2	1,2	
	Cyclohexylamine	3.2	UN 2357	Flammable Liquid, Poison	II	1,2	1	
	Cyclohexylamine	3.3	UN 2357	Flammable Liquid, Corrosive	II	1,2	1,2	
	Cyclohexyl isocyanate	6.1	UN 2488	Poison	II	1	5	Shade from radiant heat. Stow 'away from' sources of heat
	Cyclohexyl trichlorosilane	8	UN 1763	Corrosive	II	1	1	Keep dry
	Cyclooctadienes	3.3	UN 2520	Flammable Liquid	II	1,2	1,2	
	Cyclooctatetraene	3.2	UN 2358	Flammable Liquid	II	1,2	1	
	Cyclopentane	3.1	UN 1146	Flammable Liquid	II	1,2	5	
	Cyclopentanol	3.3	UN 2244	Flammable Liquid	III	1,2	1,2	
	Cyclopentanone	3.3	UN 2245	Flammable Liquid	II	1,2	1,2	
	Cyclopentene	3.1	UN 2246	Flammable Liquid	II	1,3	5	Keep cool
	Cyclopropane	2.1	UN 1027	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
N	Cyclotetramethylenetetranitramine, *containing, by weight, at least 15% water or at least 10% phlegmatizer*	1.1D	UN 0226	Explosive (1.1D)	--	--	--	
N	Cyclotrimethylenetrinitramine, *containing, by weight, at least 15% water or at least 10% phlegmatizer*	1.1D	UN 0072	Explosive (1.1D)	--	--	--	
N	Cyclotrimethylenetrinitramine mixed with cyclotetramethylenetetranitramine, *containing, by weight, at least 15% water or at least 10% phlegmatizer*	1.1D	UN 0391	Explosive (1.1D)	--	--	--	
	p-Cymene	3.3	UN 2046	Flammable Liquid	II	1,2	1,2	
	Decaborane	4.1	UN 1868	Flammable Solid, Poison	II	1,2	1,2	
	Decahydronaphthalene	3.3	UN 1147	Flammable Liquid	II	1,2	1,2	
	Decalin. See Decahydronaphthalene							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	n-Decane	3.3	UN 2247	Flammable Liquid	III	1,2	1,2	
	Decanoyl peroxide, *technical pure*	5.2	UN 2120	Organic Peroxide	II	1	5	Maximum transport temperature 15 deg C
N	Deflagrating metal salts of aromatic nitro-derivatives, n.o.s.	1.3C	UN 0132	Explosive (1.3C)	--	--	--	
	Detonators for ammunition	1.4B	UN 0365	Explosive (1.4B)	--	1,3	1,3	
	Detonators for ammunition	1.4S	UN 0366	None. Package to be marked '1.4S'	--	1,3	1,3	
N	Detonators for ammunition	1.1B	UN 0073	Explosive (1.1B)	--	--	--	
N	Detonators for ammunition	1.2B	UN 0364	Explosive (1.2B)	--	--	--	
	Deuterium	2.1	UN 1957	Flammable Gas	--	1,2	5	Stow 'away from' living quarters
	Diacetone alchohol	3.2 3.3	UN 1148 UN 1148	Flammable Liquid Flammable Liquid	II II/III	1,2 1,2	1 1,2	
	Diacetone alcohol peroxides, *maximum 57% in solution with maximum 9% hydrogen peroxide, minimum 26% diacetone alcohol and minimum 9% water; total active oxygen content maximum 10%*	5.2	UN 2163	Organic Peroxide	I	1	5	Maximum transport temperature 25 deg C
	Diallylamine	3.2	UN 2359	Flammable Liquid	II	1,2	1	
	Diallylether	3.2	UN 2360	Flammable Liquid, Poison	II	1,3	5	Keep cool
N	Diazodinitrophenol, *containing, by weight, at least 40% water or mixture of alcohol and water*	1.1A	UN 0074	Explosive (1.1A)	--	--	--	
	Dibenzyldichlorosilane	8	UN 2434	Corrosive	II	1	1	Keep dry
	Dibenzyl perdicarbonate, *maximum concentration 87% with water*	5.2	UN 2149	Organic Peroxide	I	1	5	Maximum transport temperature 25 deg C
	Dibenzyl peroxydicarbonate. *See* Dibenzyl perdicarbonate							
	Diborane	2.1	UN 1911	Flammable Gas, Poison Gas	--	1	5	Stow 'away from' foodstuffs and living quarters, 'separated from' chlorine
	Dibromobenzene	3.3	UN 2711	Flammable Liquid	III	1,2	1,2	
	Dibutyl ethers	3.3	UN 1149	Flammable Liquid	III	1,2	1,2	
	Di-sec-butyl perdicarbonate, *maximum concentration 52% in solution*	5.2	UN 2151	Organic Peroxide	II	1	5	Maximum transport temperature -10 deg C
	Di-sec-butyl perdicarbonate, *technical pure*	5.2	UN 2150	Organic Peroxide	I	1	5	Maximum transport temperature -20 deg C
	Di-sec-butyl peroxydicarbonate. *See* Di-sec-butyl perdicarbonate							
	Dicetyl perdicarbonate, *technical pure*	5.2	UN 2164	Organic Peroxide	II	1	5	Maximum transport temperature 20 deg C
	Dicetyl peroxydicarbonate. *See* Dicetyl perdicarbonate							
	Dichloroacetic acid	8	UN 1764	Corrosive	II	1,2	1,2	Glass carboy in hampers not permitted under deck
	Dichloroacetyl chloride	8	UN 1754	Corrosive	II	1	5	Keep dry
	Dichloroanilines	6.1	UN 1590	Poison	II	1,2	1,2	Stow 'away from' acids
	p-Dichlorobenzene	9	UN 1592	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Dichlorobenzenes *(o-, m-)*	6.1	UN 1591	St. Andrews Cross	III	1,2	1,2	
	2,4-Dichlorobenzoyl peroxide, *maximum concentration 75% with water*	5.2	UN 2137	Organic Peroxide	II	1	5	
	2,4-Dichlorobenzoyl peroxide, *maximum concentration 52% as a paste*	5.2	UN 2138	Organic Peroxide	II	1	5	
	2,4-Dichlorobenzoyl peroxide, *maximum concentration 52% in solution*	5.2	UN 2139	Organic Peroxide	II	1	5	
	Dichlorodifluoromethane	2.2	UN 1028	Nonflammable Gas	--	1,2	1,2	
	sym-Dichlorodimethyl ether	6.1	UN 2249	Poison	I	1	5	
	1,1-Dichloroethane	3.2	UN 2362	Flammable Liquid	II	1,2	1	
	Dichloroethylene	3.2	UN 1150	Flammable Liquid	II	1,2	1	
	Dichloroethyl ether	3.3	UN 1916	Flammable Liquid, Poison	II	1,2	1,2	
	Dichloroisocyanuric acid, *dry or* dichloroisocyanuric acid salts	5.1	UN 2465	Oxidizer	II	1,2	1,2	
	Dichloroisopropyl ether	6.1	UN 2490	Poison	II	1,2	1	
	Dichloromethane	6.1	UN 1593	St. Andrews Cross	III	1,2	1,2	
	Dichloromonofluoromethane	2.2	UN 1029	Nonflammable Gas	--	1,2	1,2	
	Dichloropentanes	3.3	UN 1152	Flammable Liquid	II	1,2	1,2	
	Dichlorophenyl isocyanates	6.1	UN 2250	Poison	II	1,3	1,3	Shade from radiant heat. Stow 'away from' sources of heat
	Dichlorophenyl trichlorosilane	8	UN 1766	Corrosive	II	1	1	Keep dry
	Dichloropropene	3.3	UN 2047	Flammable Liquid	II	1,2	1,2	
	Dichlorosilane	2.3	UN 2189	Poison Gas, Flammable Gas	--	1	5	Stow 'away from' living quarters
	Dichlorotetrafluoroethane	2.2	UN 1958	Nonflammable Gas	--	1,2	1,2	
	Dichromates, *(inorganic)*, n.o.s.	5.1	UN 1464	Oxidizer	II	1,2	1,2	Stow 'away from' foodstuffs
	Dicumyl peroxide, *technical pure or in a mixture with inert solid*	5.2	UN 2121	Organic Peroxide	II	1	5	
	Dicyclohexylamine	8	UN 2565	Corrosive	III	1	5	Keep dry
	Dicyclohexyl perdicarbonate, *maximum concentration 91% with water*	5.2	UN 2153	Organic Peroxide	I	1	5	Maximum transport temperature 5 deg C
	Dicyclohexyl perdicarbonate, *technical pure*	5.2	UN 2152	Organic Peroxide	I	1	5	Maximum transport temperature 5 deg C
	Dicyclohexyl peroxydicarbonate. *See* Dicyclohexyl perdicarbonate							
	Dicyclopentadiene	3.3	UN 2048	Flammable Liquid	II	1,2	1,2	
	Didymium nitrate	5.1	UN 1465	Oxidizer	III	1,2	1,2	
	1,2-Diethoxyethane	3.3	UN 1153	Flammable Liquid	III	1,2	1,2	
	Diethoxymethane	3.1	UN 2373	Flammable Liquid	II	1,3	5	Keep cool
	Diethylaluminium chloride	4.2	UN 1101	Spontaneously Combustible	I	1	1	
	Diethylamine	3.1	UN 1154	Flammable Liquid	II	1,3	5	Keep cool
	Diethylaminoethanol	3.3	UN 2686	Flammable Liquid	III	1,2	1,2	
	N,N-Diethylaniline	6.1	UN 2432	St. Andrews Cross	III	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Diethylbenzene	3.3	UN 2049	Flammable Liquid	II	1,2	1,2	
	Diethylcarbinol	3.3	UN 2706	Flammable Liquid	II	1,2	1,2	
	Diethyl carbonate	3.3	UN 2366	Flammable Liquid	II	1,2	1,2	
	Diethyl dichlorosilane	8	UN 1767	Corrosive	II	1	1	Keep dry. Separate longitudinally by an intervening compartment or hold from explosives
N	Diethyleneglycol dinitrate, *containing by weight, at least 25% nonvolatile water-insoluble phlegmatizer*	1.1D	UN 0075	Explosive (1.1D)	--	--	--	
	Diethylenetriamine	8	UN 2079	Corrosive	II	1,2	1,2	Stow 'away from' acids, copper and copper alloys, and living quarters; 'separated from' nitric acid
	Diethyl ether	3.1	UN 1155	Flammable Liquid	I	1,3	5	Keep cool
	Di-(2-ethylhexyl) perdicarbonate, *maximum concentration 67% in solution*	5.2	UN 2123	Organic Peroxide	II	1	5	Maximum transport temperature -15 deg C
	Di-(2-ethylhexyl) perdicarbonate, *technical pure*	5.2	UN 2122	Organic Peroxide	II	1	5	Maximum transport temperature -20 deg C
	Di-(2-ethylhexyl) peroxydicarbonate. *See* Di-(2-ethylhexyl) perdicarbonate							
	Diethyl ketone	3.2	UN 1156	Flammable Liquid	II	1,2	1	
	Diethylmagnesium	4.2	UN 1367	Spontaneously Combustible	I	1	5	Prohibited on any ship carrying explosives
	Diethyl perdicarbonate, *maximum concentration 27% in solution*	5.2	UN 2175	Organic Peroxide	II	1	5	Maximum transport temperature -10 deg C
	Diethyl peroxydicarbonate. *See* Diethyl perdicarbonate							
	Diethyl-p-nitrosoaniline	4.2	--	Spontaneously Combustible	--	1,2	5	
	Diethyl sulfide	3.2	UN 2375	Flammable Liquid, Poison	II	1,3	5	Keep cool and dry
	Diethyl sulphate	6.1	UN 1594	Poison	II	1	1	
	Diethylzinc	4.2	UN 1366	Spontaneously Combustible	I	1	5	Prohibited on any ship carrying explosives
	1,1-Difluoroethane	2.1	UN 1030	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	1,1-Difluoroethylene	2.1	UN 1959	Flammable Gas	--	1,2	5	Stow 'away from' living quarters
	Difluoromonochloroethane	2.1	UN 1031	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Difluorophosphoric acid, *anhydrous*	8	UN 1768	Corrosive	II	1,2	1,2	
	2,2-Dihydroperoxy propane, *maximum concentration 25% with inert organic solid*	5.2	UN 2178	Organic Peroxide	II	1	5	
	2,3-Dihydropyran	3.2	UN 2376	Flammable Liquid	II	1,2	1	
	Diisobutylamine	3.3	UN 2361	Flammable Liquid	II	1,2	1,2	
	Diisobutylene, *(isomeric compounds)*	3.2	UN 2050	Flammable Liquid	II	1,2	1	
	Diisobutyl ketone	3.3	UN 1157	Flammable Liquid	III	1,2	1,2	
	Diisooctyl acid phosphate	8	UN 1902	Corrosive	III	1,2	1,2	Glass carboys in hampers not permitted under deck
	Diisopropylamine	3.2	UN 1158	Flammable Liquid	II	1,2	1	
	Diisopropylbenzene hydroperoxide, *maximum concentration 72% in solution*	5.2	UN 2171	Organic Peroxide	I	1	5	
	Diisopropyl ether	3.1	UN 1159	Flammable Liquid	II	1,3	5	Keep cool
	Diisopropyl perdicarbonate, *technical pure*	5.2	UN 2133	Organic Peroxide	II	1	5	Maximum transport temperature -15 deg C
	Diisopropyl perdicarbonate, *maximum concentration 52% in solution*	5.2	UN 2134	Organic Peroxide	II	1	5	Maximum transport temperature -10 deg C
	Diketene, *inhibited*	3.3	UN 2521	Flammable Liquid	II	1,2	1,2	
	1,1-Dimethoxyethane	3.2	UN 2377	Flammable Liquid	III	1,2	1	
	1,2-Dimethoxyethane	3.2	UN 2252	Flammable Liquid	II	1,2	1	
	Dimethylamine, *anhydrous*	2.1	UN 1032	Flammable Gas	--	1,2	5	Stow 'away from' living quarters
	Dimethylamine, *solution*	3.2	UN 1160	Flammable Liquid	II	1,2	1	
	Dimethylaminoethyl methacrylate	6.1	UN 2522	Poison	II	1,2	1	
	N,N-Dimethylaniline	6.1	UN 2253	Poison	II	1,3	1,3	Stow 'away from' sources of heat
	2,5-Dimethyl-2,5-bis-(benzoylperoxy) hexane, *maximum concentration 82% with inert solid*	5.2	UN 2173	Organic Peroxide	II	1	5	
	2,5-Dimethyl-2,5-bis-(benzoylperoxy) hexane, *technical pure*	5.2	UN 2172	Organic Peroxide	II	1	5	
	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexane, *maximum concentration 52% with inert solid*	5.2	UN 2156	Organic Peroxide	II	1	5	
	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexane, *technical pure*	5.2	UN 2155	Organic Peroxide	II	1	5	
	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexyne-3, *maximum concentration 52% with inert solid*	5.2	UN 2159	Organic Peroxide	II	1	5	
	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexyne-3, *technical pure*	5.2	UN 2158	Organic Peroxide	II	1	5	
	2,5-Dimethyl-2,5-bis-(2-ethylhexanoylperoxy) hexane, *technical pure*	5.2	UN 2157	Organic Peroxide	II	1	5	Maximum transport temperature 20 deg C
	Dimethylbutane	3.1	UN 2457	Flammable Liquid	II	1,2	5	
	1,3-Dimethylbutylamine	3.2	UN 2379	Flammable Liquid	II	1,2	1	
	Dimethyl carbonate	3.2	UN 1161	Flammable Liquid	II	1,2	1	
	Dimethylcyclohexanes	3.2	UN 2263	Flammable Liquid	II	1,2	1	
	Dimethyldichlorosilane	3.2	UN 1162	Flammable Liquid, Corrosive	I	1,2	1	
	Dimethyldiethoxysilane	3.2	UN 2380	Flammable Liquid	II	1,2	1	
	2,5-Dimethyl-2,5-dihydroperoxy hexane, *maximum concentration 82% with water*	5.2	UN 2174	Organic Peroxide	I	1	5	
	3,5-Dimethyl-3,5-dihydroxydioxolane-1,2. *See* Acetyl acetone peroxide, *maximum concentration 40% in solution*							
	Dimethyldioxanes	3.2	UN 2707	Flammable Liquid	II	1,2	1	
	Dimethyldioxanes	3.3	UN 2707	Flammable Liquid	II	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Dimethyl disulfide	3.2	UN 2381	Flammable Liquid	II	1,2	1	
	Dimethylethanolamine	3.3	UN 2051	Flammable Liquid	II	1,3	1,3	
	Dimethyl ether	2.1	UN 1033	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	N,N-Dimethylformamide	6.1	UN 2265	St. Andrews Cross	III	1,3	1,3	Stow 'away from' sources of heat and halogenated hydrocarbons
	2,5-Dimethylhexane-2,5-dihydroperoxide. *See* 2,5-Dimethyl-2,5-dihydroxy hexane							
	Dimethylhydrazine, *symmetrical*	3.2	UN 2382	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Dimethylhydrazine, *unsymmetrical*	3.2	UN 1163	Flammable Liquid	I	1,2	1	Stow 'separated from' corrosive liquids and oxidizers
	Dimethylmagnesium	4.2	UN 1368	Spontaneously Combustible	I	1	5	Prohibited on any ship carrying explosives
	Dimethyl-p-nitrosoaniline	4.2	UN 1369	Spontaneously Combustible	II	1,2	5	Stow 'away from' foodstuffs
	2,2-Dimethylpropane	2.1	UN 2044	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Dimethyl-N-propylamine	3.2	UN 2266	Flammable Liquid, Corrosive	II	1,2	1	
	Dimethyl sulphate	6.1	UN 1595	Poison	I	1	5	
	Dimethyl sulphide	3.1	UN 1164	Flammable Liquid	I	1,3	5	Keep cool
	Dimethyl thiophosphoryl chloride	8	UN 2267	Corrosive	III	1,2	1	Keep dry. Shade from radiant heat. Glass carboys prohibited on passenger vessels
	Dimethylzinc	4.2	UN 1370	Spontaneously Combustible	I	1	5	Prohibited on any ship carrying explosives
	Dimyristylperoxydicarbonate, *technical pure*	5.2	UN 2595	Organic Peroxide	II	1	5	Maximum transport temperature 20 deg C
	Di-(n-butyl)amine	8	UN 2248	Corrosive, Flammable Liquid	II	1,2	1,2	Segregation same as for flammable liquids
	Dinitroanilines	6.1	UN 1596	Poison	II	1,2	1,2	
	Dinitrobenzenes *(o-, m-, p-)*	6.1	UN 1597	Poison	II	1,2	1,2	
	Dinitrogen tetroxide. *See* Nitrogen dioxide							
	4,6-Dinitro-o-cresol	6.1	UN 1598	Poison	II	1,2	1,2	
N	Dinitrophenates *(alkali metals), dry or containing, by weight, less than 15% water*	1.3C	UN 0077	Explosive (1.3C), Poison	--	--	--	
	Dinitrophenolates, *wetted with not less than 15% of water*	4.1	UN 1321	Flammable Solid, Poison	I	1,2	5	Stow 'away from' heavy metals and their compounds
N	Dinitrophenol, *dry or containing, by weight, less than 15% water*	1.1D	UN 0076	Explosive (1.1D), Poison	--	--	--	
	Dinitrophenol, *solution in water or flammable liquid*	6.1	UN 1599	Poison	II	1,2	5	Stow 'away from' heavy metals and their compounds. Segregation same as for flammable liquids if flash point below 61 deg C
	Dinitrophenol, *wetted with not less than 15% of water*	4.1	UN 1320	Flammable Solid, Poison	I	1,2	5	Stow 'away from' heavy metals and their compounds and sodium compounds
N	Dinitroresorcinol, *dry or containing, by weight, less than 15% water*	1.1D	UN 0078	Explosive (1.1D)	--	--	--	
	Dinitroresorcinols, *wetted with not less than 33 1/3% of water*	4.1	UN 1322	Flammable Solid	I	1,2	5	Stow 'away from' heavy metals and their compounds
	Dinitrotoluenes, *liquid*	6.1	UN 1600	Poison, Flammable Liquid	II	1,2	1,2	Segregation same as for flammable liquids
	Dinitrotoluenes, *solid*	6.1	UN 2038	Poison	II	1,2	1,2	
	Di-n-propyl perdicarbonate. *See* Di-n-propyl peroxydicarbonate							
	Di-n-propyl peroxydicarbonate, *technical pure*	5.2	UN 2176	Organic Peroxide	I	1	5	Maximum transport temperature -25 deg C
	Dioxane	3.2	UN 1165	Flammable Liquid	II	1,2	1	
	Dioxolane	3.2	UN 1166	Flammable Liquid	II	1,2	1	
	Dipentene	3.3	UN 2052	Flammable Liquid	II	1,2	1,2	
	Diphenylaminechloroarsine	6.1	UN 1698	Poison	I	1	5	
	Diphenylchloroarsine	6.1	UN 1699	Poison	I	1	5	
	Diphenyl dichlorosilane	8	UN 1769	Corrosive	II	1	1	Keep dry
	Diphenylmethane diisocyanate *(M.D.I.)*	9	UN 2489	None	III	1,3	1,3	Stow 'away from' foodstuffs
	Diphenylmethyl bromide	8	UN 1770	Corrosive	II	1	5	
	Dipropylamine	3.2	UN 2383	Flammable Liquid	II	1,2	1	
	Dipropylene triamine	8	UN 2269	Corrosive	III	1,2	1,2	
	Dipropyl ether	3.1	UN 2384	Flammable Liquid	II	1,3	5	Keep cool
	Disinfectants, *corrosive, liquid*	8	UN 1903	Corrosive	II	1,2	1,2	
	Disinfectants, *(poisonous)*, n.o.s.	6.1	UN 1601	Poison	I/II	1,2	1,2	Stow 'separated from' foodstuffs.
		6.1	UN 1601	St. Andrews Cross	III	1,2	1,2	Stow 'separated from' foodstuffs.
		9	UN 1601	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Distearylperoxydicarbonate, *with 15% of stearyl alcohol*	5.2	UN 2592	Organic Peroxide	II	1	5	
	Disuccinic acid peroxide. *See* Succinic acid peroxide							
	Divinyl ether, *inhibited*	3.1	UN 1167	Flammable Liquid	II	1,3	5	Keep cool
	Dodecyl trichlorosilane	8	UN 1771	Corrosive	II	1	1	Keep dry
	Dressing, leather. *See* Flammable liquid preparations, n.o.s							
	Driers, *(paint or varnish, liquid)*, n.o.s.	3.2	UN 1168	Flammable Liquid	II	1,2	1	
		3.3	UN 1168	Flammable Liquid	II	1,2	1,2	
	Driers, *(paint or varnish, solid)*, n.o.s.	4.1	UN 1371	Flammable Solid	III	1,2	1,2	
	Dye intermediates, *(poisonous, liquid or solid)*, n.o.s.	6.1	UN 1602	Poison	I/II	1,2	1,2	
		6.1	UN 1602	St. Andrews Cross	III	1,2	1,2	
	Electrolyte, *acid*. *See* Battery fluid, *acid*							
	Electrolyte, *alkaline*. *See* Battery fluid, *alkaline corrosive*							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Enamels. *See* Paints, *etc.*							
	Endrin, *mixtures, dry or liquid*	6.1	UN 2065	Poison	I/II	1,2	1,2	If flashpoint below 61 deg C segregation same as for flammable liquids.
		6.1	UN 2065	St. Andrews Cross	III	1,2	1,2	If flashpoint below 61 deg C. segregation same as for flammable liquids
	Engine starting fluid, *with flammable gas*	2.1	UN 1960	Flammable Gas	–	1,2	5	Stow 'away from' living quarters
	Epibromohydrin. *See* 1-Bromo-2,3-epoxypropane							
	Epichlorohydrin	6.1	UN 2023	Poison, Flammable Liquid (only if flashpoint is below 23 deg C.)	II	1,2	1,2	Separation same as for flammable liquids
	1,2-Epoxy-3-ethyloxy propane	3.3	UN 2752	Flammable Liquid	III	1,2	1,2	
	Eradicators, *paint or grease, liquid. To be classified and labeled according to the principle hazardous constituent*	–	UN 1850		–	1,2	1	
	Essences. *See* Extracts, *aromatic, liquid*							
	Ethane, *compressed*	2.1	UN 1035	Flammable Gas	–	1,2	5	
	Ethane, *liquid*	2.1	UN 1961	Flammable Gas	–	1,2	5	
	Ethanol	3.2	UN 1170	Flammable Liquid	II	1,2	1	
	Ethanolamine, *and solutions thereof*	8	UN 2491	Corrosive	III	1,2	1,2	Stow 'away from' copper, copper alloys, copper compounds and rubber products
	Ether. *See* Diethyl ether							
	2-Ethoxyethanol	3.3	UN 1171	Flammable Liquid	III	1,2	1,2	
	2-Ethoxyethyl acetate	3.3	UN 1172	Flammable Liquid	III	1,2	1,2	
	Ethyl acetate	3.2	UN 1173	Flammable Liquid	II	1,2	1	
	Ethyl acrylate, *inhibited*	3.2	UN 1917	Flammable Liquid	II	1,2	1	
	Ethyl alcohol. *See* Ethanol							
	Ethyl aldehyde. *See* Acetaldehyde							
	Ethyl aluminium dichloride	4.2	UN 1924	Spontaneously Combustible	I	1	1	
	Ethyl aluminium sesquichloride	4.2	UN 1925	Spontaneously Combustible	I	1	1	
	Ethylamine	2.1	UN 1036	Flammable Gas	–	1,2	5	
	Ethylamine solution *in water, concentrations up to 70%*	3.1	UN 2270	Flammable Liquid	II	1,3	5	Keep cool
	Ethylamine solution, *in water, concentrations up to 70%*	3.2	UN 2270	Flammable Liquid	II	1,2	1	
		3.3	UN 2270	Flammable Liquid	II	1,2	1,2	
	Ethyl amyl ketone	3.3	UN 2271	Flammable Liquid	III	1,2	1,2	
	N-Ethylaniline	6.1	UN 2272	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	2-Ethylaniline	6.1	UN 2273	St. Andrews Cross	III	1,2	1,2	
	Ethylbenzene	3.3	UN 1175	Flammable Liquid	II	1,2	1,2	
	Ethyl-3,3-bis-(tert-butylperoxy) butyrate, *maximum concentration 77% in solution*	5.2	UN 2185	Organic Peroxide	II	1	5	
	Ethyl-3,3-bis-(tert-butylperoxy) butyrate, *technical pure*	5.2	UN 2184	Organic Peroxide	II	1	5	
	Ethyl-3,3-bis(tert-butylperoxy)butyrate, *with at least 50% inert, inorganic solid*	5.2	UN 2598	Organic Peroxide	II	1	5	
	Ethyl borate	3.2	UN 1176	Flammable Liquid	II	1,2	1	
	Ethyl bromide	9	UN 1891	None	II	1,2	1,2	Stow 'away from' foodstuffs and living quarters
	Ethyl bromoacetate	6.1	UN 1603	Poison	II	1	5	
	2-Ethylbutanol	3.3	UN 2275	Flammable Liquid	III	1,2	1,2	
	Ethylbutyl acetate	3.3	UN 1177	Flammable Liquid	III	1,2	1,2	
	Ethyl butyl ether	3.2	UN 1179	Flammable Liquid	II	1,2	1	
	2-Ethylbutyraldehyde	3.2	UN 1178	Flammable Liquid	II	1,2	1	
	Ethyl butyrate	3.3	UN 1180	Flammable Liquid	II	1,2	1,2	
	Ethyl chloride	2.1	UN 1037	Flammable Gas	–	1,2	5	Stow 'away from' living quarters
	Ethyl chloroacetate	3.3	UN 1181	Flammable Liquid	II	1,2	1,2	
	Ethyl chlorocarbonate. See Ethyl chloroformate							
	Ethyl chloroformate	3.2	UN 1182	Flammable Liquid, Poison, Corrosive	I	1,2	1	
	Ethyl crotonate	3.2	UN 1862	Flammable Liquid	II	1,2	1	
	Ethyl dichloroarsine	6.1	UN 1892	Poison	I	1	5	
	Ethyldichlorosilane	3.2	UN 1183	Flammable Liquid	II	1,2	1	
	Ethylene chlorohydrin. *See* 2-Chloroethanol							
	Ethylene, *compressed*	2.1	UN 1962	Flammable Gas	–	1,2	5	Stow 'away from' living quarters
	Ethylenediamine	8	UN 1604	Corrosive	II	1,2	1,2	Stow 'away from' oxidizers. Segregation same as for flammable liquids
	Ethylene dibromide	6.1	UN 1605	Poison	II	1,2	1,2	
	Ethylene dichloride	3.2	UN 1184	Flammable Liquid	II	1,2	1	
	Ethylene glycol diethyl ether. *See* 1,2-Diethoxyethane							
	Ethylene glycol monobutyl ether	6.1	UN 2369	St. Andrews Cross	III	1,3	1,3	Stow 'away from' sources of heat. Segregation same as for flammable liquids
	Ethylene glycol monoethyl ether acetate. *See* 2-Ethoxyethyl acetate							
	Ethylene glycol monoethyl ether. *See* 2-Ethoxyethanol							
	Ethylene glycol monomethyl ether	3.3	UN 1188	Flammable Liquid	III	1,2	1,2	
	Ethylene glycol monomethyl ether acetate	3.3	UN 1189	Flammable Liquid	III	1,2	1,2	
	Ethyleneimine, *inhibited*	3.2	UN 1185	Flammable Liquid, Poison	I	1,2	1	
	Ethylene, *liquid*	2.1	UN 1038	Flammable Gas	–	1,2	5	Stow 'away from' living quarters

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Ethylene oxide and carbon dioxide, *mixtures containing not more than 10% carbon dioxide*	2.1	UN 1041	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Ethylene oxide and carbon dioxide, *mixtures containing not more than 17% of ethylene oxide*	2.1	UN 1952	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Ethylene oxide, *containing not more than 0.2% of nitrogen*	2.1	UN 1040	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Ethyl ether. See Diethyl ether							
	Ethyl formate	3.1	UN 1190	Flammable Liquid	II	1,3	5	Keep cool
	Ethyl hexaldehyde	3.3	UN 1191	Flammable Liquid	III	1,2	1,2	
	2-Ethylhexylamine	8	UN 2276	Corrosive	III	1,2	1,2	
	Ethylisobutyrate	3.2	UN 2385	Flammable Liquid	II	1,2	1	
	Ethyl isocyanate	3.2	UN 2481	Flammable Liquid, Poison	I	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	Ethyl lactate	3.3	UN 1192	Flammable Liquid	III	1,2	1,2	
	Ethyl mercaptan	3.1	UN 2363	Flammable Liquid	I	1,3	5	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo
	Ethyl methacrylate, *inhibited*	3.2	UN 2277	Flammable Liquid	II	1,2	1	
	Ethyl methyl ether	2.1	UN 1039	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Ethyl methyl ketone	3.2	UN 1193	Flammable Liquid	II	1,2	1	
	Ethyl methyl ketone peroxide(s), *maximum concentration 60%*	5.2	UN 2127	Organic Peroxide	I	1	5	
	Ethyl methyl ketone peroxide(s), *maximum concentration 50%, containing not more than 10% available oxygen*	5.2	UN 2550	Organic Peroxide	I	1	5	
	N-Ethyl-n-benzylaniline	6.1	UN 2274	St. Andrews Cross	III	1,2	1,2	
	Ethyl nitrite, *solutions*	3.1	UN 1194	Flammable Liquid	I	1,3	5	Keep cool
	Ethyl orthoformate	3.3	UN 2524	Flammable Liquid	II	1,2	1,2	
	Ethyl oxalate	6.1	UN 2525	St. Andrews Cross	III	1,2	1	
	Ethylphenyldichlorosilane	8	UN 2435	Corrosive	II	1	1	Keep dry
	1-Ethyl piperidine	3.2	UN 2386	Flammable Liquid	II	1,2	1	
	Ethyl propionate	3.2	UN 1195	Flammable Liquid	II	1,2	1	
	Ethyl propyl ether	3.1	UN 2615	Flammable Liquid	II	1,3	5	Keep cool
	Ethyl silicate. *See* Tetraethyl silicate							
	Ethyltrichlorosilane	3.2	UN 1196	Flammable Liquid, Corrosive	II	1,2	1	
N	Explosives, blasting, Type A	1.1D	UN 0081	Explosive (1.1D)	--	--	--	
	Explosives, blasting, Type B	1.5 D	UN 0331	Explosive (1.5D)	--	6	5	
N	Explosives, blasting, Type B	1.1D	UN 0082	Explosive (1.1D)	--	--	--	
N	Explosives, blasting, Type C	1.1D	UN 0083	Explosive (1.1D)	--	--	--	
N	Explosives, blasting, Type D	1.1D	UN 0084	Explosive (1.1D)	--	--	--	
	Explosives, blasting, Type E	1.5 D	UN 0332	Explosive (1.5D)	--	6	5	
N	Explosives, blasting, Type E	1.1D	UN 0241	Explosive (1.1D)	--	--	--	
	Extracts, *aromatic, liquid*	3.2 3.3	UN 1169 UN 1169	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Extracts, *flavouring, liquid*	3.2 3.3	UN 1197 UN 1197	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Fabric, *animal or vegetable, containing more than 5% of animal or vegetable oil*	4.2	UN 1373	Spontaneously Combustible	III	1,2	1,2	
	Ferric arsenate	6.1	UN 1606	Poison	II	1,2	1,2	
	Ferric arsenite	6.1	UN 1607	Poison	II	1,2	1,2	
	Ferric chloride, *anhydrous or solutions*	8	UN 1773	Corrosive	III	1,2	1,2	
	Ferric nitrate	5.1	UN 1466	Oxidizer	III	1,2	1,2	
	Ferrocerium	4.1	UN 1323	Flammable Solid	II	1,2	1,2	
	Ferrosilicon, *containing between 30% and 90% silicon*	4.3	UN 1408	Dangerous When Wet, Poison	III	1,2	1,2	Stow in a well ventilated compartment
	Ferrous arsenate	6.1	UN 1608	Poison	II	1,2	1,2	
	Fertilizer ammoniating solution, *containing free ammonia in excess of 35% ammonia*	2.2	UN 1043	Nonflammable Gas	--	1,2	5	Stow 'away from' living quarters
	Fibres, *animal or vegetable, burnt, wet or damp*	4.2	UN 1372	Spontaneously Combustible	III	1,2	1,2	
	Fibres, *animal or vegetable, containing more than 5% of animal or vegetable oil*	4.2	UN 1373	Spontaneously Combustible	III	1,2	1,2	
	Fibres, *vegetable, dry*	4.1	--	None	--	1,2	1,2	Stow 'away from' animal or vegetable oils
	Fillers, *liquid. See* Paints, *etc.*							
	Film from which gelatine has been removed. See Celluloid, *scrap*							
	Film, motion picture, *nitrocellulose base, exposed or unexposed, developed or undeveloped*	4.1	UN 1324	Flammable Solid	III	1,2	1,2	Stow 'away from' flammable substances. Maximum 250 Kg. net on deck on passenger vessels
	Film, motion picture, *nitrocellulose base, old film*	4.1	UN 1324	Flammable Solid	III	1	5	Stow 'away from' flammable substances
	Fire extinguisher charges, *corrosive liquid*	8	UN 1774	Corrosive	II	1,2	1,2	
	Fire extinguishers, *containing compressed or liquefied gas*	2.2	UN 1044	Nonflammable Gas	--	1,2	1,2	
N	Fireworks, Type A	1.1G	UN 0333	Explosive (1.1G)	--	--	--	
N	Fireworks, Type B	1.2G	UN 0334	Explosive (1.2G)	--	--	--	
N	Fireworks, Type C	1.3G	UN 0335	Explosive (1.3G)	--	--	--	
	Fireworks, Type D	1.4 G	UN 0336	Explosive (1.4G)	--	1,3	1,3	
	Fireworks, Type D	1.4 S	UN 0337	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Fishmeal *or* fishscrap, *antioxidant treated, moisture content greater than 6% but not exceeding 12% by weight, fat content not exceeding 18% by weight*	4.1	UN 2216	None. Package to be marked 'Class 4.1'	III	1,2	1,2	Double strip stowage recommended. Provide good surface and through ventilation

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Fishmeal *or* fishscrap, *antioxidant treated, moisture content between 5% and 11% by weight, fat content not more than 18% by weight*	9	UN 2216	None	III	2	2	
	Fishmeal *or* fishscrap, *antioxidant treated, unrestricted moisture content, fat content exceeding 18% by weight*	4.2	UN 2216	Spontaneously Combustible	II	1,2	1,2	
	Fishmeal *or* fishscrap, *not antioxidant treated, moisture content greater than 6% but not exceeding 12% by weight, fat content not exceeding 15% by weight*	4.1	UN 1374	None. Package to be marked "Class 4.1"	III	1,2	1,2	Double strip stowage recommended. Provide good surface and through ventilation
	Fishmeal *or* fishscrap, *not antioxidant treated, moisture content greater than 6% but not exceeding 12% by weight, fat content not exceeding 12% by weight*	9	UN 1374	None	III	1,2	1,2	
	Fishmeal *or* fishscrap, *not antioxidant treated, unrestricted moisture content, fat content exceeding 15% by weight*	4.2	UN 1374	Spontaneously Combustible	II	1,2	1,2	
	Flammable liquid preparation, n.o.s.	3.2 3.3	UN 1142 UN 1142	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Flammable liquids, *(non-toxic)*, n.o.s.	3.2 3.3	UN 1993 UN 1993	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Flammable liquids, *(toxic)*, n.o.s.	3.2	UN 1992	Flammable Liquid, Poison	II	1,2	1	
		3.3	UN 1992	Flammable Liquid, Poison	II	1,2	1,2	
	Flammable solids, n.o.s.	4.1	UN 1325	Flammable Solid	II	1,2	1,2	
N	Flares, aerial	1.3G	UN 0093	Explosive (1.3G)	--	--	--	
N	Flares, surface *(other than water-activated flares)*	1.3G	UN 0092	Explosive (1.3G)	--	--	--	
	Flax, dry. See Fibres, *vegetable, dry*							
	Fluoboric acid	8	UN 1775	Corrosive	II	1,2	1,2	
	Fluoric acid. *See* Hydrofluoric acid, *solution*							
	Fluorine	2.3	UN 1045	Poison Gas, Oxidizer	--	1	5	Stow 'away from' foodstuffs, organic materials, and living quarters
	Fluorobenzene	3.2	UN 2387	Flammable Liquid	II	1,2	1	
	Fluorophosphoric acid, *anhydrous*	8	UN 1776	Corrosive	II	1,2	1,2	
	Fluorosulphonic acid	8	UN 1777	Corrosive	I	1	5	Keep dry. Stow 'away from' fluorides
	Fluorotoluenes	3.2 3.3	UN 2388 UN 2388	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Fluosilicic acid	8	UN 1778	Corrosive	II	1,2	1,2	
	Formaldehyde, *in solutions*	3.3	UN 1198	Flammable Liquid	II	1,2	1,2	Stow 'away from' foodstuffs
	Formaldehyde, *solutions flashpoint above 61 degrees C*	9	UN 2209	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Formalin. *See* Formaldehyde							
	Formic acid	8	UN 1779	Corrosive	II	1,2	1,2	Glass carboy in hampers prohibited
N	Fracturing devices, explosive, *for oil wells*	1.1D	UN 0099	Explosive (1.1D)	--	--	--	
	Fuel, aviation, *turbine engine*	3.2	UN 1863	Flammable Liquid	II	1,2	1	
	Fumaryl chloride	8	UN 1780	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Fungicides, *(poisonous)*, n.o.s.	6.1 6.1 9	UN 1609 UN 1609 UN 1609	Poison St. Andrews Cross None	I/II III III	1,2 1,2 1,2	1,2 1,2 1,2	Stow 'separated from' foodstuffs. Stow 'separated from' foodstuffs. Stow 'away from' foodstuffs
	Furan	3.1	UN 2389	Flammable Liquid	I	1,3	5	Keep cool
	Furfural	3.3	UN 1199	Flammable Liquid	II	1,2	1,2	
	Furfurylamine	3.3	UN 2526	Flammable Liquid	II	1,2	1,2	
	Fuse, igniter, *tubular, metal clad*	1.4 G	UN 0103	Explosive (1.4G)	--	1,3	1,3	
N	Fuse, instantaneous, non-detonating	1.3G	UN 0101	Explosive (1.3G)	--	--	--	
	Fusel oil	3.2	UN 1201	Flammable Liquid	II	1,2	1	
	Fuse, safety	1.4 S	UN 0105	None. Package to be marked "1.4 S"	--	1,3	1,3	
	Fuzes, detonating	1.4S	UN 0367	None. Package to be marked "1.4S"	--	1,3	1,3	
	Fuzes, detonating	1.4 B	UN 0257	Explosive (1.4B)	--	1,3	1,3	
N	Fuzes, detonating	1.1B	UN 0106	Explosive (1.1B)	--	--	--	
N	Fuzes, detonating	1.2B	UN 0107	Explosive (1.2B)	--	--	--	
	Fuzes, igniting	1.4S	UN 0368	None. Package to be marked "1.4S"	--	1,3	1,3	
N	Fuzes, igniting	1.3G	UN 0316	Explosive (1.3G)	--	--	--	
N	Fuzes, igniting	1.4G	UN 0317	Explosive (1.4G)	--	--	--	
N	Gaines, with detonator	1.1B	UN 0225	Explosive (1.1B)	--	--	--	
N	Gaines, with detonator	1.2B	UN 0268	Explosive (1.2B)	--	--	--	
N	Gaines, without detonator	1.1D	UN 0042	Explosive (1.1D)	--	--	--	
N	Gaines, without detonator	1.2D	UN 0283	Explosive (1.2D)	--	--	--	
	Gas cartridges	2.1	UN 2037	Flammable Gas	--			
	Gas drips, *hydrocarbon*	3.2	UN 1864	Flammable Liquid	II	1,2	1	
	Gas oil	3.3	UN 1202	Flammable Liquid	II	1,2	1,2	
	Gasoline	3.1	UN 1203	Flammable Liquid	II	1,2	5	
	Germane	2.3	UN 2192	Poison Gas, Flammable Gas	--	1	5	Stow 'away from' living quarters
	Germicides, *(poisonous)*, n.o.s.	6.1	(UN 1601)	Poison	I/II	1,2	1,2	Stow 'separated from' foodstuffs.
		6.1	(UN 1601)	St. Andrews Cross	III	1,2	1,2	Stow 'separated from' foodstuffs.

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
		9	(UN 1601)	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Glyceryl trinitrate, *solution up to 1% in alcohol*	3.2	UN 1204	Flammable Liquid	II	1,2	1	
	Glycidaldehyde	3.3	UN 2622	Flammable Liquid, Poison	II	1,2	1,2	
N	Grenades, *hand or rifle, with bursting charge*	1.1D	UN 0284	Explosive (1 1D)	–	–	–	
N	Grenades, *hand or rifle, with bursting charge*	1.2D	UN 0285	Explosive (1.2D)	–	–	–	
N	Grenades, *hand or rifle, with bursting charge*	1.1F	UN 0292	Explosive (1 1F)	–	–	–	
N	Grenades, *hand or rifle, with bursting charge*	1.2F	UN 0293	Explosive (1 2F)	–	–	–	
	Grenades, practice, *hand or rifle*	1.4 S	UN 0110	None. Package to be marked '1 4 S'	–	1,3	1,3	
N	Grenades, practice, *hand or rifle*	1.2G	UN 0372	Explosive (1 2G)	–	–	–	
N	Grenades, practice, *hand or rifle*	1.3G	UN 0318	Explosive (1.3G)	–	–	–	
	Guanidine nitrate	9	UN 1467	None	III	1,2	1,2	Stow 'separated from' nitro compounds, chlorates or acids
N	Guanyl nitrosamino guanylidene hydrazine, *containing, by weight, at least 30% water*	1.1A	UN 0113	Explosive (1 1A)	–	–	–	
N	Guanyl nitrosamino guanyl tetrazene, *containing, by weight, at least 30% water or mixture of alcohol and water*	1.1A	UN 0114	Explosive (1 1A)	–	–	–	
	Gutta percha, *solution*	3.3	UN 1205	Flammable Liquid	II	1,2	1,2	
	Hafnium metal powder, dry	4.2	UN 2545	Spontaneously Combustible	II	1	5	
	Hafnium metal powder, wet, *with not less than 25% water (a visible excess of water must be present)*	4.1	UN 1326	Flammable Solid	II	1,2	5	
	Halogenated irritating liquids, n.o.s.	6.1	UN 1610	Poison	I/II	1	5	
		6.1	UN 1610	St. Andrews Cross	III	1	5	
	Hay	4.1	UN 1327	None	III	1,2	1,2	Stow 'away from' animal or vegetable oils
	Helium, *compressed*	2.2	UN 1046	Nonflammable Gas	–	1,2	1,2	
	Helium, *liquid*	2.2	UN 1963	Nonflammable Gas	–	1,2	1,2	
	Hemp, dry. See Fibres, *vegetable, dry*							
	Heptane	3.2	UN 1206	Flammable Liquid	II	1,2	1	
	n-Heptene	3.2	UN 2278	Flammable Liquid	II	1,2	1	
	Hexachlorobutadiene	6.1	UN 2279	St Andrews Cross	III	1,2	1,2	
	Hexadecyl trichlorosilane	8	UN 1781	Corrosive	II	1	1	Keep dry
	Hexadiene	3 1	UN 2458	Flammable Liquid	II	1,3	5	Keep cool
	Hexaethyl tetraphosphate	6.1	UN 1611	Poison	I/II	1,2	5	
		6.1	UN 1611	St Andrews Cross	III	1,2	5	
	Hexaethyl tetraphosphate *and compressed gas mixture*	6.1	UN 1612	Poison, Non-flammable Compressed gas	I/II	1	5	Shade from radiant heat. Segregation same as nonflammable gas.
		6.1	UN 1612	St Andrews Cross, Non-flammable Compressed Gas	III	1	5	Shade from radiant heat. Segregation same as for non-flammable gas
	Hexafluoroacetone	2.3	UN 2420	Poison Gas	–	1	5	Stow 'away from' living quarters
	Hexafluoroacetone hydrate	6.1	UN 2552	Poison	II	1,2	1	
	Hexafluorophosphoric acid	8	UN 1782	Corrosive	II	1,2	1,2	
	Hexafluoropropylene	2.2	UN 1858	Nonflammable Gas	–	1,2	1,2	
	Hexaldehyde	3.3	UN 1207	Flammable Liquid	III	1,2	1,2	
	Hexamethylenediamine, *solid*	8	UN 2280	Corrosive	III	1,3	1,3	Keep cool
	Hexamethylenediamine, *solution*	8	UN 1783	Corrosive, Poison	II	1,2	1,2	
	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxonane, *maximum concentration 52% with inert solid*	5.2	UN 2166	Organic Peroxide	II	1	5	
	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxonane, *maximum concentration 52% in solution*	5.2	UN 2167	Organic Peroxide	II	1	5	
	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxonane, *technical pure*	5.2	UN 2165	Organic Peroxide	I	1	5	
	Hexamine	4.1	UN 1328	Flammable Solid	III	1,2	1,2	
	Hexane	3.1	UN 1208	Flammable Liquid	II	1,2	5	
N	Hexanitrodiphenylamine	1.1D	UN 0079	Explosive (1 1D)	–	–	–	
N	Hexanitrostilbene	1.1D	UN 0392	Explosive (1.1D)	–	–	–	
	Hexanols	3.3	UN 2282	Flammable Liquid	III	1,2	1,2	
N	Hexatonal, cast	1.1D	UN 0393	Explosive (1.1D)	–	–	–	
	Hex-1-ene	3.1	UN 2370	Flammable Liquid	II	1,3	5	Keep cool
N	Hexolite, *dry or containing, by weight, less than 15% water*	1.1D	UN 0118	Explosive (1.1D)	–	–	–	
	Hexyl trichlorosilane	8	UN 1784	Corrosive	II	1	1	Keep dry
	Hydrazine, *anhydrous and solutions containing less than 36% water, by weight*	8	UN 2029	Corrosive, Poison	I	1	5	
	Hydrazine, *solutions containing 36% or more water, by weight*	8	UN 2030	Corrosive, Poison	II	1,2	5	Under deck not permitted if containing less than 64% water by weight. Stow 'away from' nitric acids and perchloric acids exceeding 50% acid by weight
	Hydrides, *(metal)*, n.o.s.	4.3	UN 1409	Dangerous When Wet	I	1,2	5	
	Hydriodic acid	8	UN 1787	Corrosive	II	1	1	Glass carboys prohibited on passenger vessels
	Hydrobromic acid	8	UN 1788	Corrosive	II	1	1	Glass carboys prohibited on passenger vessels. Stow 'away from' fluorides
	Hydrocarbon gases *(and mixtures of such gases, compressed)*, n.o.s.	2.1	UN 1964	Flammable Gas	–	1,2	1	Stow 'away from' living quarters
	Hydrocarbon gases *(and mixtures of such gases, liquefied)*, n.o.s.	2.1	UN 1965	Flammable Gas	–	1,2	1	Stow 'away from' living quarters
	Hydrochloric acid	8	UN 1789	Corrosive	II	1	1	Glass carboys prohibited on passenger vessels. Stow 'away from' fluorides

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Hydrocyanic acid, *anhydrous. See* Hydrogen cyanide							
	Hydrocyanic acid, *aqueous solution of not more than 20% of hydrogen cyanide*	6.1	UN 1613	Poison	I	1	5	
	Hydrofluoric acid, *solution*	8	UN 1790	Corrosive	I/II	1	5	Keep cool
	Hydrofluoric and sulphuric acid, *mixtures. See* Acid mixtures, *hydrofluoric and sulphuric*							
	Hydrofluosilicic acid. *See* Fluosilicic acid							
	Hydrogen and methane, *mixtures*	2.1	UN 2034	Flammable Gas	–	1,2	5	Stow 'away from' living quarters
	Hydrogen bromide, *anhydrous*	2.3	UN 1048	Poison Gas, Corrosive	–	1	5	Stow 'away from' foodstuffs and living quarters
	Hydrogen chloride, *anhydrous*	2.3	UN 1050	Poison Gas, Corrosive	–	1	5	Stow 'away from' foodstuffs and living quarters
	Hydrogen, *compressed*	2.1	UN 1049	Flammable Gas	–	1,2	5	Stow 'separated from' chlorine, 'away from' living quarters
	Hydrogen cyanide, *anhydrous, stabilized*	2.3	UN 1051	Poison Gas, Flammable Gas	–	1	5	Stow 'away from' foodstuffs and living quarters
	Hydrogen cyanide, *anhydrous, stabilized, absorbed in a porous inert material*	6.1	UN 1614	Poison	I	1	5	Shade from radiant heat
	Hydrogen fluoride, *anhydrous*	2.3	UN 1052	Poison Gas, Corrosive	–	1	5	Stow 'away from' foodstuffs and living quarters
	Hydrogen iodide, *anhydrous*	2.3	UN 2197	Poison Gas, Corrosive	–	1	5	Stow 'away from' living quarters
	Hydrogen iodide, *solution. See* Hydriodic acid							
	Hydrogen, *liquid*	2.1	UN 1966	Flammable Gas	–	5	5	
	Hydrogen peroxide, *concentrations of over 40% up to 60% peroxide*	5.1	UN 2014	Oxidizer, Corrosive	II	1	5	Shade from radiant heat. Stow 'away from' powdered metals and 'separated from' permanganates
	Hydrogen peroxide, *concentrations of 8% up to 40% peroxide*	5.1	UN 2014	Oxidizer	II	1,2	1	Shade from radiant heat. Stow 'away from' powdered metals and 'separated from' permanganates
	Hydrogen peroxide, *stabilized, concentrations of over 60% peroxide*	5.1	UN 2015	Oxidizer, Corrosive	I	1	5	Permitted only under conditions approved by the Department
	Hydrogen selenide	2.3	UN 2202	Poison Gas, Flammable Gas	–	1	5	Stow 'away from' living quarters
	Hydrogen sulphide	2.1	UN 1053	Flammable Gas, Poison Gas	–	1	5	Stow 'away from' foodstuffs and living quarters
	Hydrosilicofluoric acid. *See* Fluosilicic acid							
	1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide, *and mixtures with* bis-(1-hydroxy cyclohexyl) peroxide, *in a concentration of more than 90% with less than 10% water*	5.2	UN 2117	Organic Peroxide	I	1	5	
	1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide, *and mixtures with* bis-(1-hydroxy cyclohexyl) peroxide, *in a concentration of 90% or less with at least 10% water*	5.2	UN 2119	Organic Peroxide	I	1	5	
	1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide, *and mixtures with* bis-(1-hydroxy cyclohexyl) peroxide, *maximum concentration 72% as a paste or in solution*	5.2	UN 2118	Organic Peroxide	I	1	5	
	Hypochlorite, *solutions containing more than 5% available chlorine*	8	UN 1791	Corrosive	II/III	1,2	1	Glass carboys in hampers prohibited under deck
	Igniters	1.4 G	UN 0325	Explosive (1.4G)	–	1,3	1,3	
N	Igniters	1.1G	UN 0121	Explosive (1.1G)	–	–	–	
N	Igniters	1.2G	UN 0314	Explosive (1.2G)	–	–	–	
N	Igniters	1.3G	UN 0315	Explosive (1.3G)	–	–	–	
	Inflammable gas for lighters. *See* Lighters, *for cigars and cigarettes, containing flammable gas*							
	Inflammable liquid preparations, n.o.s.. *See* Flammable liquid preparations, n.o.s							
	Inflammable liquids, *(non-toxic)*, n.o.s.. *See* Flammable liquids, *(non-toxic)*, n.o.s							
	Inflammable liquids, *(toxic)*, n.o.s.. *See* Flammable liquids, *(toxic)*, n.o.s							
	Inflammable solids, n.o.s.. *See* Flammable solids, n.o.s							
	Ink, printers	3.2 3.3	UN 1210 UN 1210	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Insecticide gases, *(non-toxic)*, n.o.s.	2.1 2.2	UN 1968 UN 1968	Flammable Gas Nonflammable Gas	– –	1,2 1,3	1 1,3	
	Insecticide gases, *(toxic)*, n.o.s.	2.3	UN 1967	Poison Gas	–	1	5	Shade from radiant heat
	Insecticide gases, *toxic*, n.o.s.	2.3	UN 1967	Poison Gas	–	1	5	Shade from radiant heat
	Insecticides, n.o.s.	6.1 6.1 9	UN 1615 UN 1615 UN 1615	Poison St. Andrews Cross None	I/II III III	1,2 1,2 1,2	1,2 1,2 1,2	Stow 'separated from' foodstuffs. Stow 'separated from' foodstuffs. Stow 'away from' foodstuffs
	Iodine monochloride	8	UN 1792	Corrosive	II	1	5	Keep dry
	Iodine pentafluoride	5.1	UN 2495	Oxidizer, Poison	I	1	5	Keep dry
	2-Iodobutane	3.2	UN 2390	Flammable Liquid	II	1,2	1	
	Iodomethylpropanes	3.2	UN 2391	Flammable Liquid	II	1,2	1	
	Iodopropanes	3.2 3.3	UN 2392 UN 2392	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Iron carbonyl	3.1	UN 1994	Flammable Liquid, Poison	I	1	5	Shade from radiant heat
	Iron chloride. *See* Ferric chloride							
	Iron oxide, *spent*	4.2	UN 1376	Spontaneously Combustible	III	1,2	5	
	Iron pentacarbonyl. *See* Iron carbonyl							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Iron sesquichloride. *See* Ferric chloride							
	Iron sponge, *spent. See* Iron oxide, *spent*							
	Iron swarf, *e.g. borings, cuttings, drillings, filings, shavings, turnings*	4.2	UN 2793	None	--	1,2	1,2	
	Isobutane *or isobutane mixtures*	2.1	UN 1969	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Isobutanol	3.3	UN 1212	Flammable Liquid	II	1,2	1,2	
	Isobutyl acetate	3.2	UN 1213	Flammable Liquid	II	1,2	1	
	Isobutyl acrylate, *inhibited*	3.3	UN 2527	Flammable Liquid	II	1,2	1,2	
	Isobutyl alcohol. *See* Isobutanol							
	Isobutyl aldehyde. *See* Isobutyraldehyde							
	Isobutylamine	3.2	UN 1214	Flammable Liquid	II	1,2	1	
	Isobutylene	2.1	UN 1055	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Isobutyl formate	3.2	UN 2393	Flammable Liquid	II	1,2	1	
	Isobutylisobutyrate	3.3	UN 2528	Flammable Liquid	III	1,2	1,2	
	Isobutyl isocyanate	3.2	UN 2486	Flammable Liquid, Poison	II	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	Isobutyl methacrylate, *inhibited*	3.3	UN 2283	Flammable Liquid	III	1,2	1,2	
	Isobutyl methyl ketone peroxide, *maximum concentration 62% in solution*	5.2	UN 2126	Organic Peroxide	I	1	5	
	Isobutyl propionate	3.2	UN 2394	Flammable Liquid	II	1,2	1	
	Isobutyraldehyde	3.1	UN 2045	Flammable Liquid	II	1,3	5	Keep cool
	Isobutyric acid	3.3	UN 2529	Flammable Liquid	III	1,2	1,2	
	Isobutyric anhydride	3.3	UN 2530	Flammable Liquid	III	1,2	1,2	
	Isobutyronitrile	3.2	UN 2284	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Isobutyryl chloride	3.2	UN 2395	Flammable Liquid, Poison	II	1	1	Keep dry Shade from radiant heat
	Isobutyryl peroxide, *maximum concentration 52% in solution*	5.2	UN 2182	Organic Peroxide	II	1	5	Maximum transport temperature -20 deg C
	Isocyanates *(and solutions)*, n.o.s.	3.1	UN 2478	Flammable Liquid, Poison	II	1	5	Stow 'away from' living quarters and sources of heat
	Isocyanates *(with a boiling point below 300 degrees C and a flashpoint of 23 degrees C or above, and their solutions)*, n.o.s.	6.1	UN 2206	Poison, Flammable Liquid (only if flashpoint of the substance or solution is below 61 deg C.)	II	1,3	1,3	Shade from radiant heat. Stow 'away from' sources of heat. Segregation same as for flammable liquids if flashpoint below 61 deg C
	Isocyanates *(with a boiling point of 300 degrees C and above and their solutions)*, n.o.s.	9	UN 2207	None	III	1,2	1,2	Stow 'away from' foodstuffs and sources of heat
	Isododecane	3.3	UN 2286	Flammable Liquid	III	1,2	1,2	
	Isoheptene	3.1	UN 2287	Flammable Liquid	II	1,3	5	Keep cool
	Isohexene	3.1	UN 2288	Flammable Liquid	II	1,3	5	Keep cool
	Isononanoyl peroxide, *technical pure or in solution*	5.2	UN 2128	Organic Peroxide	II	1	5	Maximum transport temperature 0 deg C
	Isooctene	3.1	UN 1216	Flammable Liquid	II	1,2	5	
	Isopentane	3.1	UN 1265	Flammable Liquid	I	1,2	5	
	Isopentenes	3.1	UN 2371	Flammable Liquid	I	1,3	5	Keep cool
	Isophoronediamine	8	UN 2289	Corrosive	III	1,2	1,2	Glass carboys prohibited on passenger vessels
	Isophorone diisocyanate	6.1	UN 2290	Poison	II	1,2	1	
	Isoprene, *inhibited*	3.1	UN 1218	Flammable Liquid	I	1,3	5	Keep cool
	Isopropanol	3.2	UN 1219	Flammable Liquid	II	1,2	1	
	Isopropenyl acetate	3.2	UN 2403	Flammable Liquid	II	1,2	1	
	Isopropenylbenzene	3.3	UN 2303	Flammable Liquid	II	1,2	1,2	
	Isopropyl acetate	3.2	UN 1220	Flammable Liquid	II	1,2	1	
	Isopropyl acid phosphate	8	UN 1793	Corrosive	III	1,2	1,2	Glass carboys in hampers prohibited under deck
	Isopropyl alcohol. *See* Isopropanol							
	Isopropylamine	3.1	UN 1221	Flammable Liquid	I	1,3	5	Keep cool
	Isopropylbenzene	3.3	UN 1918	Flammable Liquid	II	1,2	1,2	
	Isopropyl butyrate	3.3	UN 2405	Flammable Liquid	II	1,2	1,2	
	Isopropyl chloroformate	3.2	UN 2407	Flammable Liquid, Corrosive	II	1,2	1	
	Isopropyl formate	3.2	UN 2408	Flammable Liquid	II	1,2	1	
	Isopropyl isobutyrate	3.2	UN 2406	Flammable Liquid	II	1,2	1	
	Isopropyl isocyanate	3.2	UN 2483	Flammable Liquid, Poison	I	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	Isopropyl mercaptan	3.1	UN 2703	Flammable Liquid	II	1,3	5	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo.
		3.2	UN 2703	Flammable Liquid	II	1,3	1	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo
	Isopropyl nitrate	3.2	UN 1222	Flammable Liquid	II	1,2	1	
	Isopropyl peroxydicarbonate. *See* Diisopropyl perdicarbonate							
	Isopropyl propionate	3.2	UN 2409	Flammable Liquid	II	1,2	1	
N	Jet perforating guns, charged, *oil well, without detonator*	1.1D	UN 0124	Explosive (1.1D)	--	--	--	
	Jute, dry. See Fibres, *vegetable, dry*							
	Kapok, dry. See Fibres, *vegetable, dry*							
	Kerosene	3.3	UN 1223	Flammable Liquid	II	1,2	1,2	
	Ketones, *(liquid, non-toxic)*, n.o.s.	3.2	UN 1224	Flammable Liquid	II	1,2	1	
		3.3	UN 1224	Flammable Liquid	II	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Ketones, *(liquid, toxic)*, n.o.s.	3.2	UN 1224	Flammable Liquid, Poison	II	1,2	1	
		3.3	UN 1224	Flammable Liquid, Poison	II	1,2	1,2	
	Krypton, *compressed*	2.2	UN 1056	Nonflammable Gas	--	1,2	1,2	
	Krypton, *liquid*	2.2	UN 1970	Nonflammable Gas	--	1	5	
	Lacquer base. *See* Paints, *etc.*							
	Lacquer chips. *See* Nitrocellulose, *wetted with, by weight, more than 40% flammable liquids.*							
	Lacquers. *See* Paints, *etc.*							
	Lauroyl peroxide, *technical pure*	5.2	UN 2124	Organic Peroxide	II	1	5	
	Lead acetate	6.1	UN 1616	St. Andrews Cross	III	1,2	1,2	
	Lead arsenates	6.1	UN 1617	Poison	II	1,2	1,2	
	Lead arsenites	6.1	UN 1618	Poison	II	1,2	1,2	
N	Lead azide, *containing, by weight, at least 20% water or mixture of alcohol and water*	1.1A	UN 0129	Explosive (1.1A)	--	--	--	
	Lead compounds, (*water soluble*), n.o.s.	6.1	UN 2291	St. Andrews Cross	III	1,2	1,2	
	Lead cyanide	6.1	UN 1620	Poison	II	1,2	1,2	Stow 'away from' acids
	Lead dioxide	5.1	UN 1872	Oxidizer	III	1,2	1,2	Stow 'away from' foodstuffs
	Lead dross. *See* Lead sulphate, *containing more than 3% free acid*							
	Lead nitrate	5.1	UN 1469	Oxidizer,Poison	II	1,2	1,2	Store 'away from' foodstuffs
	Lead perchlorate	5.1	UN 1470	Oxidizer,Poison	II	1,2	1,2	Stow 'away from' powdered metals and foodstuffs
	Lead peroxide. *See* Lead dioxide							
N	Lead styphnate, *containing, by weight, at least 20% water or mixture of alcohol and water*	1.1A	UN 0130	Explosive (1.1A)	--	--	--	
	Lead sulphate, *containing more than 3% free acid*	8	UN 1794	Corrosive	II	1,2	1,2	
	Life-rafts, *inflatable*	9	--	None	--	1,2	1,2	
	Lighter fuels, *cigar and cigarette*	3.2	UN 1226	Flammable Liquid	II	1,2	1	
	Lighters *for cigars and cigarettes, etc., containing flammable gas*	2.1	UN 1057	Flammable Gas	--	1	1	Stow 'away from' living quarters. Not permitted in nonventilated containers
	Lighters *for cigars and cigarettes, etc., containing fuel*	3.2	UN 1226	Flammable Liquid	II	1,2	1	
	Lighters, fuse	1.4 S	UN 0131	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Liquefied non-flammable gases charged with nitrogen, carbon dioxide or air	2.2	UN 1058	Nonflammable Gas	--	1,2	1,2	
	Lithium alkyls	4.2	UN 2445	Spontaneously Combustible	I	1	1	
	Lithium aluminium hydride	4.3	UN 1410	Dangerous When Wet	I	1,2	5	
	Lithium aluminium hydride, *ethereal*	4.3	UN 1411	Dangerous When Wet, Flammable Liquid	I	1	5	
	Lithium amide	4.3	UN 1412	Dangerous When Wet	II	1,2	5	
	Lithium borohydride	4.3	UN 1413	Dangerous When Wet	I	1,2	5	
	Lithium hydride	4.3	UN 1414	Dangerous When Wet	I	1,2	5	
	Lithium hypochlorite, *dry, including mixtures containing more than 39% available chlorine (8.8% available oxygen)*	5.1	UN 1471	Oxidizer	II	1,2	1,2	
	Lithium, *(metal)*	4.3	UN 1415	Dangerous When Wet	II	1,2	5	
	Lithium peroxide	5.1	UN 1472	Oxidizer	II	1,2	1,2	Keep dry
	Lithium silicon	4.3	UN 1417	Dangerous When Wet	II	1,2	1,2	
	London purple	6.1	UN 1621	Poison	II	1,2	1,2	
	Lye. *See* Sodium hydroxide							
	Magnesium alloys, *containing more than 50% magnesium, pellets, turnings or ribbon*	4.1	UN 1869	Flammable Solid	III	1,2	1,2	Stow 'away from' nonflammable gases and poisons
	Magnesium alloys, *containing more than 50% magnesium, powder, non-pyrophoric*	4.3	UN 1418	Dangerous When Wet	II	1,2	1,2	Stow 'away from' nonflammable gases and poisons
	Magnesium aluminium phosphide	4.3	UN 1419	Dangerous When Wet	I	1	5	
	Magnesium arsenate	6.1	UN 1622	Poison	II	1,2	1,2	
	Magnesium bromate	5.1	UN 1473	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals, 'separated from' ammonium compounds
	Magnesium diamide	4.2	UN 2004	Spontaneously Combustible	II	1	1	
	Magnesium diphenyl	4.2	UN 2005	Spontaneously Combustible	I	1	1	
	Magnesium hydride	4.3	UN 2010	Dangerous When Wet	I	1,2	5	
	Magnesium nitrate	5.1	UN 1474	Oxidizer	III	1,2	1,2	
	Magnesium, *pellets, turnings or ribbon*	4.1	UN 1869	Flammable Solid	III	1,2	1,2	Stow 'away from' nonflammable gases and poisons
	Magnesium perchlorate	5.1	UN 1475	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals
	Magnesium peroxide	5.1	UN 1476	Oxidizer	II	1,2	1,2	Keep dry
	Magnesium phosphide	4.3	UN 2011	Dangerous When Wet, Poison	I	1	5	
	Magnesium, *powder, non-pyrophoric*	4.3	UN 1418	Dangerous When Wet	II	1,2	1,2	Stow 'away from' nonflammable gases and poisons
	Maleic anhydride	8	UN 2215	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Maneb, *or* maneb preparation(s) *containing 60% or more maneb*	4.2	UN 2210	Spontaneously Combustible	III	1,2	1,2	Stow 'away from' acids, living quarters and foodstuffs
	Manganese ethylene-bis-dithiocarbamate. See Maneb							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Manganese resinate	4.1	UN 1330	Flammable Solid	III	1,2	1,2	
N	Mannitol hexanitrate, *containing, by weight, at least 40% water or mixture of alcohol and water*	1.1D	UN 0133	Explosive (1.1D)	--	--	--	
	Matches, *fusee*	4.1	UN 2254	Flammable Solid	III	1,2	1,2	
	Matches, *safety*	9	UN 1944	None	III	1,2	1,2	Keep dry
	Matches, *strike anywhere*	4.1	UN 1331	Flammable Solid	III	1,2	1	
	Matches, *wax 'vesta'*	4.1	UN 1945	Flammable Solid	III	1,2	1	
N	Medicines, n.o.s. *to be classified and labeled according to the principle hazardous constituent*	--	UN 1851		--			
	MEKP. See Ethyl methyl ketone peroxide							
	p-Menthane hydroperoxide, *technical pure*	5.2	UN 2125	Organic Peroxide	I	1	5	
	Mercaptans *and* mercaptan mixtures, *(liquid)*, n.o.s.	3.1	UN 1228	Flammable Liquid	II	1,3	5	Keep cool
	Mercuric acetate. *See* Mercury acetate							
	Mercuric arsenate	6.1	UN 1623	Poison	II	1,2	1,2	
	Mercuric bromide. *See* Mercury bromides							
	Mercuric chloride	6.1	UN 1624	Poison	II	1,2	1,2	
	Mercuric cyanide. *See* Mercury cyanide							
	Mercuric nitrate	6.1	UN 1625	Poison	II	1,2	1,2	
	Mercuric oxycyanide. *See* Mercury oxycyanide							
	Mercuric potassium cyanide	6.1	UN 1626	Poison	I	1,2	1,2	Stow 'away from' acids
	Mercuric sulphate	6.1	UN 1645	Poison	II	1,2	1,2	
	Mercurol. *See* Mercury nucleate							
	Mercurous acetate. *See* Mercury acetate							
	Mercurous bromide. *See* Mercury bromides							
	Mercurous nitrate. *See* Mercury acetate							
	Mercurous sulphate	6.1	UN 1628	Poison	II	1,2	1,2	
	Mercury acetate	6.1	UN 1629	Poison	II	1,2	1,2	
	Mercury ammonium chloride	6.1	UN 1630	Poison	II	1,2	1,2	
	Mercury benzoate	6.1	UN 1631	Poison	II	1,2	1,2	
	Mercury bisulphate	6.1	UN 1633	Poison	II	1,2	1,2	
	Mercury bromides	6.1	UN 1634	Poison	II	1,2	1,2	
	Mercury compounds, *(inorganic)*, n.o.s.	6.1	UN 2024	Poison	I/II	1,2	1,2	
		6.1	UN 2024	St. Andrews Cross	III	1,2	1,2	
	Mercury compounds, *(organic)*, n.o.s.	6.1	UN 2025	Poison	I/II	1,2	1,2	
		6.1	UN 2025	St. Andrews Cross	III	1,2	1,2	
	Mercury cyanide	6.1	UN 1636	Poison	II	1,2	1,2	Stow 'away from' acids
N	Mercury fulminate, *containing, by weight, at least 20% water or mixture of alcohol and water*	1.1A	UN 0135	Explosive (1.1A)	--	--	--	
	Mercury gluconate	6.1	UN 1637	Poison	II	1,2	1,2	
	Mercury iodide	6.1	UN 1638	Poison	II	1,2	1,2	
	Mercury nucleate	6.1	UN 1639	Poison	II	1,2	1,2	
	Mercury oleate	6.1	UN 1640	Poison	II	1,2	1,2	
	Mercury oxide	6.1	UN 1641	Poison	II	1,2	1,2	
	Mercury oxycyanide	6.1	UN 1642	Poison	II	1,2	1,2	Stow 'away from' acids
	Mercury potassium iodide	6.1	UN 1643	Poison	II	1,2	1,2	
	Mercury salicylate	6.1	UN 1644	Poison	II	1,2	1,2	
	Mercury thiocyanate	6.1	UN 1646	Poison	II	1,2	1,2	
	Mesityl oxide	3.3	UN 1229	Flammable Liquid	II	1,2	1,2	
	Metal alkyls, n.o.s.	4.2	UN 2003	Spontaneously Combustible	I	1	5	Shade from radiant heat. Stow 'separated from flammable liquids or gases, oxidizers or organic peroxides
	Metaldehyde	4.1	UN 1332	Flammable Solid	III	1,2	1,2	
	Methacraldehyde	3.2	UN 2396	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Methacrylic acid, *inhibited*	8	UN 2531	Corrosive	II	1	1	Keep cool. Glass carboys prohibited on passenger vessels
	Methallyl alcohol	3.3	UN 2614	Flammable Liquid	II	1,2	1,2	
	Methane *or* natural gases *with a high methane content, compressed*	2.1	UN 1971	Flammable Gas	--	1,2	5	Stow 'away from' living quarters
	Methane *or* natural gases *with a high methane content, refrigerated liquid*	2.1	UN 1972	Flammable Gas	--	1	5	Stow 'away from' living quarters
	Methanol	3.2	UN 1230	Flammable Liquid, Poison	II	1,2	1	
	Methoxymethyl isocyanate	3.2	UN 2605	Flammable Liquid, Poison	I	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	4-Methoxy-4-methylpentan-2-one	3.3	UN 2293	Flammable Liquid	III	1,2	1,2	
	Methyl acetate	3.2	UN 1231	Flammable Liquid	II	1,2	1	
	Methyl acetone	3.2	UN 1232	Flammable Liquid	II	1,2	1	
	Methyl acetylene, *mixed with 15% to 20%* propadiene	2.1	UN 1060	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	beta-Methyl acrolein. *See* Crotonaldehyde, *inhibited*							
	Methyl acrylate, *inhibited*	3.2	UN 1919	Flammable Liquid	II	1,2	1	
	Methylal	3.1	UN 1234	Flammable Liquid	II	1,3	5	Keep cool
	Methyl alcohol. *See* Methanol							
	Methyl allyl chloride	3.1	UN 2554	Flammable Liquid	II	1,3	5	Keep cool
	Methyl aluminium sesquibromide	4.2	UN 1926	Spontaneously Combustible	I	1	1	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Methyl aluminium sesquichloride	4.2	UN 1927	Spontaneously Combustible	I	1	1	
	Methylamine, *anhydrous*	2.1	UN 1061	Flammable Gas	--	1,2	5	
	Methylamine, *aqueous solution*	3.1	UN 1235	Flammable Liquid	II	1,3	5	Keep cool. Stow 'away from' mercury and its compounds
	Methylamyl acetate	3.3	UN 1233	Flammable Liquid	III	1,2	1,2	
	Methyl amyl ketone. *See* Amyl methyl ketone							
	N-Methylaniline	6.1	UN 2294	St. Andrews Cross	III	1,2	1,2	
	Methyl bromide	2.3	UN 1062	Poison Gas	--	1	5	
	Methyl bromide and chloropicrin, mixtures. *See* Chloropicrin and methyl bromide, mixtures							
	Methyl bromide and ethylene dibromide, *liquid mixtures*	6.1	UN 1647	Poison	I	1	1	
	2-Methyl-1,3-butadiene. *See* Isoprene							
	3-Methyl butan-2-one	3.2	UN 2397	Flammable Liquid	II	1,2	1	
	2-Methyl-1-butene	3.1	UN 2459	Flammable Liquid	I	1,3	5	Keep cool
	2-Methyl-2-butene	3.1	UN 2460	Flammable Liquid	II	1,3	5	Keep cool
	Methyl-tert-butyl ether	3.2	UN 2398	Flammable Liquid	II	1,2	1	
	Methyl butyrate	3.2	UN 1237	Flammable Liquid	II	1,2	1	
	Methyl chloride	2.1	UN 1063	Flammable Gas	--	1,2	5	Stow 'away from' living quarters
	Methyl chloride and chloropicrin, mixtures. See Chloropicrin and methyl chloride, mixtures							
	Methyl chloride and methylene chloride, *mixtures*	2.1	UN 1912	Flammable Gas	--	1,2	5	
	Methyl chloroacetate	3.3	UN 2295	Flammable Liquid	II	1,2	1,2	
	Methyl chlorocarbonate. *See* Methyl chloroformate							
	Methyl chloroformate	3.2	UN 1238	Flammable Liquid, Poison, Corrosive	I	1,2	1	
	Methylchloromethyl ether	3.1	UN 1239	Flammable Liquid	II	1	5	Keep cool
	Methyl chlorosilane	3.2	UN 2534	Flammable Liquid, Corrosive	I	1,2	1	
	Methyl cyanide	6.1	UN 1648	Poison, Flammable Liquid	II	1	5	Shade from radiant heat. Segregation as for flammable liquids
	Methyl cyclohexane	3.2	UN 2296	Flammable Liquid	II	1,2	1	
	Methyl cyclohexanol	3.3	UN 2617	Flammable Liquid	III	1,2	1,2	
	Methyl cyclohexanone	3.3	UN 2297	Flammable Liquid	III	1,2	1,2	
	Methyl cyclopentane	3.1	UN 2298	Flammable Liquid	II	1,2	5	
	Methyl dichloroacetate	6.1	UN 2299	St. Andrews Cross	III	1,2	1,2	
	Methyldichlorosilane	3.2	UN 1242	Flammable Liquid, Corrosive	I	1,2	1	
	Methylene bis (phenylene isocyanate). *See* Diphenylmethane diisocyanate							
	Methylene chloride. *See* Dichloromethane							
	Methyl ethyl ether. *See* Ethyl methyl ether							
	Methyl ethyl ketone peroxide(s). *See* Ethyl methyl ketone peroxide							
	Methyl ethyl ketone. *See* Ethyl methyl ketone							
	2-Methyl-5-ethylpyridine	6.1	UN 2300	St. Andrews Cross	III	1,2	1,2	
	Methyl formate	3.1	UN 1243	Flammable Liquid	I	1,3	5	Keep cool
	2-Methylfuran	3.1	UN 2301	Flammable Liquid	II	1,3	5	Keep cool
	5-Methylhexan-2-one	3.3	UN 2302	Flammable Liquid	III	1,2	1,2	
	Methylhydrazine	3.2	UN 1244	Flammable Liquid, Corrosive	I	1,2	1	
	Methyl isobutyl carbinol	3.3	UN 2053	Flammable Liquid	III	1,2	1,2	
	Methyl isobutyl ketone	3.2	UN 1245	Flammable Liquid	II	1,2	1	
	Methyl isocyanate *and solutions*	3.1	UN 2480	Flammable Liquid, Poison	I	1	5	Stow 'away from' living quarters and sources of heat
	Methyl isocyanate *(and solutions)*	3.2	UN 2480	Flammable Liquid, Poison	I	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	Methyl isopropenyl ketone, *inhibited*	3.2	UN 1246	Flammable Liquid	II	1,2	1	
	Methyl isothiocyanate	3.2	UN 2477	Flammable Liquid, Poison	II	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	Methylisovalerate	3.2	UN 2400	Flammable Liquid	II	1,2	1	
	Methyl magnesium bromide, *in ethyl ether*	4.2	UN 1928	Spontaneously Combustible	I	1	5	
	Methylmercaptan	2.1	UN 1064	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Methyl methacrylate, *monomer, inhibited*	3.2	UN 1247	Flammable Liquid	II	1,2	1	
	Methylmorpholine	3.3	UN 2535	Flammable Liquid, Corrosive	II	1,2	1,2	
	Methyl orthosilicate	3.2	UN 2606	Flammable Liquid, Poison	I	1,3	5	Keep cool
	Methylpentadiene	3.1	UN 2461	Flammable Liquid	II	1,3	5	Keep cool
	Methylpentanes	3.1	UN 2462	Flammable Liquid	II	1,3	5	Keep cool
	Methylphenyldichlorosilane	8	UN 2437	Corrosive	II	1	1	Keep dry. Segregation same as for flammable liquids
	1-Methylpiperidine	3.2	UN 2399	Flammable Liquid	II	1,2	1	
	Methyl propionate	3.2	UN 1248	Flammable Liquid	II	1,2	1	
	Methyl propyl ether	3.1	UN 2612	Flammable Liquid	II	1,3	5	Keep cool
	Methyl propyl ketone	3.2	UN 1249	Flammable Liquid	II	1,2	1	
	Methyl sulphide. *See* Dimethyl sulfide							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Methyltetrahydrofuran	3.2	UN 2536	Flammable Liquid	II	1,2	1	
	Methyl trichloroacetate	6.1	UN 2533	St. Andrews Cross	III	1,2	1	
	Methyltrichlorosilane	3.2	UN 1250	Flammable Liquid, Corrosive	II	1,2	1	
	alpha-Methyl valeraldehyde	3.3	UN 2367	Flammable Liquid	III	1,2	1,2	
	Methyl vinyl ketone	3.2	UN 1251	Flammable Liquid	II	1,2	1	
N	Mines, *with bursting charge*	1.1D	UN 0137	Explosive (1.1D)	–	–	–	
N	Mines, *with bursting charge*	1.2D	UN 0138	Explosive (1.2D)	–	–	–	
N	Mines, *with bursting charge*	1.1F	UN 0136	Explosive (1.1F)	–	–	–	
N	Mines, *with bursting charge*	1.2F	UN 0294	Explosive (1.2F)	–	–	–	
	Mischmetal, *powder*	4.1	UN 1333	Flammable Solid	II	1,2	5	Stow 'separated from' flammable substances and oxidizers
	Mischmetal, *slabs or ingots*	4.1	UN 1333	Flammable Solid	III	1,2	1,2	Stow 'separated from' flammable substances and oxidizers
	Mixed acid. *See* Acid mixtures, *nitrating acid*							
	Mixed acid, spent. See Acid mixtures, *spent*							
	Molybdenum pentachloride	8	UN 2508	Corrosive	III	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Monochlorodifluoromethane. *See* Chlorodifluoromethane							
	Monochloropentafluoroethane. *See* Chloropentafluoroethane							
	Monochlorotetrafluoroethane. *See* Chlorotetrafluoroethane							
	Monochlorotrifluoromethane. *See* Chlorotrifluoromethane							
	Monoethanolamine. *See* Ethanolamine *and solutions thereof*							
	Monoethylamine. *See* Ethylamine							
	Monomethylamine, *anhydrous. See* Methylamine, *anhydrous*							
	Monomethylamine, *aqueous solution. See* Methylamine, *aqueous solution*							
	Monopropylamine	3.1	UN 1277	Flammable Liquid	II	1,2	5	
	Morpholine	3.3	UN 2054	Flammable Liquid	II	1,2	1,2	
	Motor fuel anti-knock mixtures	6.1	UN 1649	Poison	I	1	5	If flashpoint below 61 deg C segregation same as for flammable liquids
	Motor fuel, n.o.s.	3.1	(UN 1203)	Flammable Liquid	II	1,2	5	
	Motor spirit. *See* Gasoline							
	Muriatic acid. *See* Hydrochloric acid							
	Naphtha distillate	3.2	(UN 1268)	Flammable Liquid	II	1,2	1	
	Naphthalene, *crude or refined*	4.1	UN 1334	Flammable Solid	III	1,2	1,2	
	Naphtha, petroleum	3.2	UN 1255	Flammable Liquid	II	1,2	1	
	Naphtha, solvent	3.2	UN 1256	Flammable Liquid	II	1,2	1	
	Naphthylamine *(alpha)*	6.1	UN 2077	St. Andrews Cross	III	1,2	1,2	
	Naphthylamine *(beta)*	6.1	UN 1650	Poison	II	1,2	1,2	
	alpha-Naphthylthiourea	6.1	UN 1651	Poison	II	1,2	1,2	
	Naphthylurea	6.1	UN 1652	Poison	II	1,2	1,2	
	Napthalene, molten	4.1	UN 2304	Flammable Solid	III	1	1	Protect from sparks and open flame
	Natural gases with a high methane content. See Methane *or* natural gases, *etc.*							
	Natural gasoline. *See* Casinghead gasoline							
	N, N-Dimethylcyclohexylamine	8	UN 2264	Corrosive	II	1,2	1,2	Keep cool. Segregation same as for flammable liquids
	Neohexane. *See* Dimethyl butane							
	Neon, *compressed*	2.2	UN 1065	Nonflammable Gas	–	1,2	1,2	
	Neon, *liquid*	2.2	UN 1913	Nonflammable Gas	–	1	5	
	Nickel carbonyl	3.1	UN 1259	Flammable Liquid, Poison	I	1	5	Keep cool. Prohibited on any ship carrying explosives
	Nickel catalyst, *finely divided, activated or spent, wetted with not less than 40% of water or other suitable liquid*	4.2	UN 1378	Spontaneously Combustible	II	1,2	1	
	Nickel cyanide	6.1	UN 1653	Poison	II	1,2	1,2	
	Nicotine	6.1	UN 1654	Poison	II	1,2	1,2	
	Nicotine, *(compounds and preparations)*, n.o.s.	6.1 6.1	UN 1655 UN 1655	Poison St. Andrews Cross	I/II III	1,2 1,2	1,2 1,2	
	Nicotine hydrochloride, *and solutions*	6.1	UN 1656	Poison	II	1,2	1,2	
	Nicotine salicylate	6.1	UN 1657	Poison	II	1,2	1,2	
	Nicotine sulphate, *solid or solution*	6.1	UN 1658	Poison	II	1,2	1,2	
	Nicotine tartrate	6.1	UN 1659	Poison	II	1,2	1,2	
	Nitrate of soda and potash, mixture. *See* Sodium nitrate and potash, *mixture*							
	Nitrates, *(inorganic)*, n.o.s.	5.1	UN 1477	Oxidizer	II	1,2	1,2	
	Nitrating acid. *See* Acid mixtures, *nitrating acid*							
N	Nitric acid, *other than red fuming, all concentrations*	8	UN 2031	Corrosive	I/II			
N	Nitric acid, *red fuming*	8	UN 2032	Corrosive, Oxidizer	I			
	Nitric oxide	2.3	UN 1660	Poison Gas, Oxidizer	–	1	5	Stow 'away from' foodstuffs and living quarters
	Nitric oxide and nitrogen tetroxide, *mixtures*	2.3	UN 1975	Poison Gas, Oxidizer	–	1	5	Stow 'away from' foodstuffs, organic materials and living quarters
	Nitroanilines *(o-, m-, p-)*	6.1	UN 1661	Poison	II	1,2	1,2	
	Nitrobenzene	6.1	UN 1662	Poison	II	1,2	1,2	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Nitrobenzenesulphonic acid	8	UN 2305	Corrosive	II	1,2	1,2	
	Nitrobenzol. *See* Nitrobenzene							
N	5-Nitrobenzotriazol	1.1D	UN 0385	Explosive (1.1D)	--	--	--	
	Nitrobenzotrifluoride	6.1	UN 2306	Poison	II	1,2	1,2	
	Nitrocellulose, *containing at least 25% alcohol, by weight, and not exceeding 12.6% nitrogen by dry weight*	4.1	UN 2556	Flammable Solid	I	1	5	Shade from radiant heat, keep away from heat and open flame
	Nitrocellulose, *containing at least 25%, by weight, water*	4.1	UN 2555	Flammable Solid	II	1	5	Shade from radiant heat. Keep away from heat and open flame
	Nitrocellulose, *containing at least 18% plasticizing substance, by weight, and not exceeding 12.6% nitrogen by dry weight*	4.1	UN 2557	Flammable Solid	I	1	1	Shade from radiant heat. Keep away from heat and open flame
	Nitrocellulose, *in solution in flammable liquids*	3.2 3.3	UN 2059 UN 2060	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Nitrocellulose, *wetted with, by weight, more than 40% flammable liquids*	3.2 3.3	(UN 2556) (UN 2556)	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
N	Nitrocellulose with *less than 25%* alcohol, *by weight*	1.1D	UN 0340	Explosive (1.1D)	--	--	--	
N	Nitrocellulose with *less than 18%* plasticizing substance, *by weight*	1.1D	UN 0341	Explosive (1.1D)	--	--	--	
N	Nitrocellulose with *less than 25%* water, *by weight*	1.1D	UN 0340	Explosive (1.1D)	--	--	--	
N	Nitrocellulose with *not less than 25%* alcohol, *by weight*	1.3C	UN 0342	Explosive (1.3C)	--	--	--	
N	Nitrocellulose with *not less than 18%* plasticizing substance, *by weight*	1.3C	UN 0343	Explosive (1.3C)	--	--	--	
	3-Nitro-4-chlorobenzotrifluoride	6.1	UN 2307	Poison	II	1,2	1,2	
	Nitrocresols	6.1	UN 2446	Poison	III	1,2	1,2	
	Nitrogen, *compressed*	2.2	UN 1066	Nonflammable Gas	--	1,2	1,2	
	Nitrogen dioxide	2.3	UN 1067	Poison Gas, Oxidizer	--	1	5	Stow 'away from' foodstuffs, organic materials and living quarters
	Nitrogen, *liquid*	2.2	UN 1977	Nonflammable Gas	--	1	5	
	Nitrogen tetroxide. *See* Nitrogen dioxide							
	Nitrogen trifluoride	2.3	UN 2451	Poison Gas	--	1	5	Stow 'away from' living quarters and organic materials
	Nitrogen trioxide	2.3	UN 2421	Poison Gas	--	1	5	Stow 'away from' living quarters and readily combustible substances
N	Nitroglycerine, desensitized, *containing, by weight, at least 40% non-volatile water-insoluble phlegmatizer*	1.1D	UN 0143	Explosive (1.1D), Poison	--	--	--	
N	Nitroglycerine, spirit of, *containing more than 1% but not more than 10% nitroglycerine in solution in alcohol*	1.1D	UN 0144	Explosive (1.1D)	--	--	--	
	Nitroglycerin solution, *up to 1% in alcohol. See* Glyceryl trinitrate, *solution*							
N	Nitroguanidine, *dry or containing, by weight, less than 20% water*	1.1D	UN 0282	Explosive (1.1D)	--	--	--	
	Nitroguanidine, *wetted with not less than 20% of water*	4.1	UN 1336	Flammable Solid	I	1,2	5	
	Nitrohydrochloric acid	8	UN 1798	Corrosive	I	1	5	Stow 'away from' fluorides
	Nitromethane	3.3	UN 1261	Flammable Liquid	II	1,2	1,2	
	Nitromuriatic acid. *See* Nitrohydrochloric acid							
	Nitronapthalene	4.1	UN 2538	Flammable Solid	III	1,2	1,2	
	Nitrophenols *(o-, m-, p-)*	6.1	UN 1663	St. Andrews Cross	III	1,2	1,2	
	Nitropropanes	3.3	UN 2608	Flammable Liquid	III	1,2	1,2	
	p-Nitrosodimethylaniline	4.2	UN 1369	Spontaneously Combustible	II	1,2	5	Stow 'away from' foodstuffs
N	Nitrostarch, *dry or containing, by weight, less than 20% water*	1.1D	UN 0146	Explosive (1.1D)	--	--	--	
	Nitrostarch, *wetted with not less than 20% of water*	4.1	UN 1337	Flammable Solid	I	1	5	
	Nitrosyl chloride	2.3	UN 1069	Poison Gas, Corrosive	--	1	5	Stow 'away from' foodstuffs and living quarters
	Nitrosylsulphuric acid	8	UN 2308	Corrosive	II	1	5	Stow 'away from' organic materials
	Nitrotoluenes *(o-, m-, p-)*	6.1	UN 1664	Poison	II	1,2	1,2	
N	Nitro urea	1.1D	UN 0147	Explosive (1.1D)	--	--	--	
	Nitrous oxide	2.2	UN 1070	Nonflammable Gas, Oxidizer	--	1,2	1,2	
	Nitroxylenes *(o-, m-, p-)*	6.1	UN 1665	Poison	II	1,2	1,2	
	Nonane	3.3	UN 1920	Flammable Liquid	II	1,2	1,2	
	n-Nonanoyl peroxide, *technical pure*	5.2	UN 2130	Organic Peroxide	II	1	5	Maximum transport temperature 0 deg C
	Nonyl trichlorosilane	8	UN 1799	Corrosive	II	1	1	Keep dry
	Octadecyl trichlorosilane	8	UN 1800	Corrosive	II	1	1	Keep dry
	Octadiene	3.2	UN 2309	Flammable Liquid	III	1,2	1	
	Octafluorocyclobutane	2.2	UN 1976	Nonflammable Gas	--	1,2	1,2	
	Octane *and its isomers*	3.2	UN 1262	Flammable Liquid	II	1,2	1	
	n-Octanoyl peroxide, *technical pure*	5.2	UN 2129	Organic Peroxide	II	1	5	Maximum transport temperature 10 deg C
N	Octolite, *dry or containing, by weight, less than 15% water*	1.1D	UN 0266	Explosive (1.1D)	--	--	--	
	Octyl trichlorosilane	8	UN 1801	Corrosive	II	1	1	Keep dry
	Oil gas	2.1	UN 1071	Flammable Gas, Poison Gas	--	1	5	Stow 'away from' living quarters
	Oleum. *See* Sulphuric acid, *fuming*							
	Organic peroxides, mixture *(this description must be supplemented with the name of the primary constituent of the mixture)*	5.2	UN 2756	Organic Peroxide	I/II	1	5	
	Organic peroxides, n.o.s.	5.2	UN 2255	Organic Peroxide	I/II	1	5	
	Organophosphates, *(poisonous)*, n.o.s.	6.1 6.1	UN 1893 UN 1893	Poison St. Andrews Cross	I/II III	1,2 1,2	1,2 1,2	
	Osmium tetroxide	6.1	UN 2471	Poison	I	1,2	1	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Oxalates, *water soluble*	6.1	UN 2449	St. Andrews Cross	III	1,2	1,2	
	Oxidizing substances, n.o.s.	5.1	UN 1479	Oxidizer	II	1,2	1,2	
	Oxygen and carbon dioxide, mixtures. See Carbon dioxide and oxygen *mixtures*							
	Oxygen, *compressed*	2.2	UN 1072	Nonflammable Gas, Oxidizer	–	1,2	1,2	
	Oxygen difluoride	2.3	UN 2190	Poison Gas	–	1	5	Keep dry. Stow 'away from' living quarters and readily combustible substances
	Oxygen, *liquid*	2.2	UN 1073	Nonflammable Gas, Oxidizer	–	1	5	Stow 'separated from' acetylene. Do not overstow
	Paint, enamel, lacquer, stain, shellac, varnish, polish, filler (liquid),	3.2	UN 1263	Flammable Liquid	II/III	1,2	1	
	lacquer base *and* thinner (*not including substances containing nitrocellulose for which See* Nitrocellulose.)	3.3	UN 1263	Flammable Liquid	II/III	1,2	1,2	
	Paper, *treated with unsaturated oils, incompletely dried*	4.2	UN 1379	Spontaneously Combustible	III	1,2	1,2	
	Paraformaldehyde	4.1	UN 2213	None. Package to be marked 'Class 4.1'	III	1,2	1,2	
	Paraldehyde	3.3	UN 1264	Flammable Liquid	III	1,2	1,2	
	Parathion, *and mixtures, solid, liquid or under compressed gas*	6.1	UN 1668	Poison	I/II	1,2	1,2	Shade cylinders from radiant heat.
		6.1	UN 1668	St. Andrews Cross	III	1,2	1,2	Shade cylinders from radiant heat
	Pentaborane	4.2	UN 1380	Spontaneously Combustible	I	1	5	
	Pentachloroethane	6.1	UN 1669	Poison	II	1,2	1,2	
N	Pentaerythrite tetranitrate, *containing, by weight, at least 25% water or at least 15% phlegmatizer*	1.1D	UN 0150	Explosive (1.1D)	–	–	–	
	Pentane	3.1	UN 1265	Flammable Liquid	I	1,2	5	
	2,4-Pentanedione	3.3	UN 2310	Flammable Liquid	III	1,2	1,2	
N	Pentolite, *dry or containing, by weight, less than 15% water*	1.1D	UN 0151	Explosive (1.1D)	–	–	–	
	Peracetic acid, *maximum concentration 43% in acetic acid or in a mixture of acetic acid and water, with in either case not more than 6% hydrogen peroxide and not more than 1% sulphuric acid*	5.2	UN 2131	Organic Peroxide, Corrosive	I	1	5	
	Perborates, *(inorganic)*, n.o.s.	5.1	UN 1480	Oxidizer	II	1,2	1,2	
	Perchlorates, *(inorganic)*, n.o.s.	5.1	UN 1481	Oxidizer	II	1,3	1,3	Stow 'away from' powdered metals
	Perchloric acid, *not exceeding 50%, by weight, of acid*	8	UN 1802	Corrosive, Oxidizer	II	1	1	Stow 'away from' hydrazine
	Perchloric acid, *over 50% and not exceeding 72% of acid*	5.1	UN 1873	Oxidizer, Corrosive	I	1	5	
	Perchloroethylene. *See* Tetrachloroethylene							
	Perchloromethyl-mercaptan	6.1	UN 1670	Poison	I	1	5	
	Perchloryl fluoride	2.3	(UN 1955)	Poison Gas	–	1	5	Stow 'away from' living quarters and readily combustible substances
	Perfumery products, *flammable liquid*	3.2	UN 1266	Flammable Liquid	II	1,2	1	
		3.3	UN 1266	Flammable Liquid	II	1,2	1,2	
	Permanganates, *(inorganic)*, n.o.s.	5.1	UN 1482	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds, hydrogen peroxide and strong liquid acids
	Peroxides, *(metallic)*, n.o.s.	5.1	UN 1483	Oxidizer	II	1,2	1,2	
	Pesticides, *(high hazard, solid or liquid)*, n.o.s.	6.1	UN 2588	Poison	I/II	1,2	1,2	Stow 'separated from' foodstuffs.
		6.1	UN 2588	St. Andrews Cross	III	1,2	1,2	Stow 'away from' foodstuffs
	Pesticides, *(liquid, non-toxic)*, n.o.s.	3.2	UN 1996	Flammable Liquid	II	1,2	1	
		3.3	UN 1996	Flammable Liquid	II	1,2	1,2	
	Pesticides, *(liquid, toxic)*, n.o.s.	3.2	UN 1995	Flammable Liquid, Poison	II	1,2	1	
		3.3	UN 1995	Flammable Liquid, Poison	II	1,2	1,2	
	Pesticides, *(low hazard, solid or liquid)*, n.o.s.	9	–	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Petroleum crude oil	3.1	UN 1267	Flammable Liquid	II	1,2	5	
		3.2	UN 1267	Flammable Liquid	II	1,2	1	
		3.3	UN 1267	Flammable Liquid	II	1,2	1,2	
	Petroleum distillates, n.o.s.	3.1	UN 1268	Flammable Liquid	II	1,2	5	
		3.2	UN 1268	Flammable Liquid	II	1,2	1	
		3.3	UN 1268	Flammable Liquid	II	1,2	1,2	
	Petroleum ether. *See* Petroleum spirit							
	Petroleum gases, *liquefied*	2.1	UN 1075	Flammable Gas	–	1,2	1	Stow 'away from' living quarters
	Petroleum oil	3.1	UN 1270	Flammable Liquid	II	1,2	5	
		3.2	UN 1270	Flammable Liquid	II	1,2	1	
		3.3	UN 1270	Flammable Liquid	II	1,2	1,2	
	Petroleum spirit	3.1	UN 1271	Flammable Liquid	II	1,2	5	
		3.2	UN 1271	Flammable Liquid	II	1,2	1	
		3.3	UN 1271	Flammable Liquid	II	1,2	1,2	
	Petrol. *See* Gasoline							
	Phenetidines	6.1	UN 2311	St. Andrews Cross	III	1,2	1,2	
	Phenol	6.1	UN 1671	Poison	II	1,2	1,2	
	Phenolsulphonic acid, *liquid*	8	UN 1803	Corrosive	II	1,2	1	Metal drums only under deck
	Phenylacetonitrile. *See* Benzyl cyanide, *liquid*							
	Phenylcarbylamine chloride	6.1	UN 1672	Poison	I	1	5	
	Phenylenediamines *(o-, m-, p-)*	6.1	UN 1673	St. Andrews Cross	III	1,2	1,2	
	Phenylhydrazine	6.1	UN 2572	Poison	II	1,2	1,2	
	Phenyl isocyanate	6.1	UN 2487	Poison	II	1	5	Shade from radiant heat
	Phenyl mercaptan	3.2	UN 2337	Flammable Liquid, Poison	II	1,2	1	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Phenylmercuric acetate	6.1	UN 1674	Poison	II	1,2	1,2	
	Phenylmercuric compounds, n.o.s.	6.1	UN 2026	Poison	I/II	1,2	1,2	
		6.1	UN 2026	St. Andrews Cross	III	1,2	1,2	
	Phenylmercuric hydroxide	6.1	UN 1894	Poison	II	1,2	1,2	
	Phenylmercuric nitrate	6.1	UN 1895	Poison	II	1,2	1,2	
	Phenyl trichlorosilane	8	UN 1804	Corrosive	II	1	1	Keep dry
	Phosgene	2.3	UN 1076	Poison Gas, Corrosive	--	1	5	Stow 'away from' living quarters
	Phosphine	2.3	UN 2199	Poison Gas, Flammable Gas	--	1	5	Stow 'away from' living quarters
	o-Phosphoric acid, *liquid*	8	UN 1805	Corrosive	III	1,2	1,2	Glass carboys in hampers prohibited under deck. Keep dry
	o-Phosphoric acid, *solid*	8	UN 1805	Corrosive	III	1,2	1,2	
	Phosphoric anhydride. *See* Phosphorus pentoxide							
	Phosphorous bromide. *See* Phosphorus tribromide							
	Phosphorous chloride. *See* Phosphorus trichloride							
	Phosphorus, *amorphous*	4.1	UN 1338	Flammable Solid	III	1,2	1,2	
	Phosphorus heptasulphide, *free from yellow or white phosphorus*	4.1	UN 1339	Flammable Solid	II	1,2	1	Stow 'separated from' oxidizing substances
	Phosphorus oxybromide	8	UN 1939	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Phosphorus oxychloride. *See* Phosphoryl chloride							
	Phosphorus pentachloride	8	UN 1806	Corrosive	II	1	1	Keep dry
	Phosphorus pentafluoride	2.3	UN 2198	Poison Gas	--	1	5	Stow 'away from' living quarters
	Phosphorus pentasulphide, *free from yellow or white phosphorus*	4.1	UN 1340	Flammable Solid	II	1,2	1,2	Stow 'separated from' oxidizing substances
	Phosphorus pentoxide	8	UN 1807	Corrosive	II	1,2	1,2	Glass bottles prohibited under deck
	Phosphorus sesquisulphide, *free from yellow or white phosphorus*	4.1	UN 1341	Flammable Solid	II	1,2	1	Stow 'separated from' oxidizing substances
	Phosphorus tribromide	8	UN 1808	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Phosphorus trichloride	8	UN 1809	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Phosphorus trifluoride	2.3	(UN 1955)	Poison Gas	--	1	5	Stow 'away from' living quarters
	Phosphorus trisulphide, *free from yellow or white phosphorus*	4.1	UN 1343	Flammable Solid	II	1,2	1	Stow 'separated from' oxidizing substances
	Phosphorus white, molten	4.2	UN 2447	Spontaneously Combustible	I	1	5	
	Phosphorus, *white or yellow, dry*	4.2	UN 1381	Spontaneously Combustible	I	1,2	5	
	Phosphorus, *white or yellow, in water*	4.2	UN 1381	Spontaneously Combustible	I	1,2	5	
	Phosphoryl chloride	8	UN 1810	Corrosive	II	1	1	Glass carboys prohibited on passenger vessels
N	Photo-flash powder *in units*	1.1G	UN 0094	Explosive (1.1G)	--	--	--	
N	Photo-flash powder *in units*	1.2G	UN 0096	Explosive (1.2G)	--	--	--	
N	Photo-flash powder *in units*	1.3G	UN 0305	Explosive (1.3G)	--	--	--	
	Phthalic anhydride, *dust, powder or molten liquid*	8	UN 2214	None	III	1,2	1,2	Stow 'away from' foodstuffs and oxidizing substances
	Picolines	3.3	UN 2313	Flammable Liquid	II	1,2	1,2	
	Picric acid, *wetted with not less than 10% of water*	4.1	UN 1344	Flammable Solid	I	1	5	Stow 'away from' heavy metals and their compounds
	Picric acid, *wetted with not less than 30% of water*	4.1	UN 1344	Flammable Solid	I	1,2	5	Stow 'away from' heavy metals and their compounds
	Pinane hydroperoxide, *technical pure*	5.2	UN 2162	Organic Peroxide	I	1	5	
	alpha-Pinene	3.3	UN 2368	Flammable Liquid	III	1,2	1,2	
	Pine oil	3.3	UN 1272	Flammable Liquid	III	1,2	1,2	
	Piperidine	3.2	UN 2401	Flammable Liquid	II	1,2	1	Keep dry
	Pivaloyl chloride	8	UN 2438	Corrosive, Flammable Liquid	II	1	5	Shade from radiant heat. Segregation same as for flammable liquids
	Plastics moulding materials *evolving flammable vapours*	9	UN 2211	None	III	1,2	1,2	
	Plastics, *(spontaneously combustible)*, n.o.s.	4.2	UN 2006	Spontaneously Combustible	III	1	5	
	Poisonous liquids, n.o.s.	6.1	UN 2810	Poison	I/II	1,2	1	
		6.1	UN 2810	St. Andrews Cross	III	1,2	1,2	
	Poisonous solids, n.o.s.	6.1	UN 2811	Poison	I/II	1,2	1	
		6.1	UN 2811	St. Andrews Cross	III	1,2	1,2	
	Polishes. *See* Paints, *etc.*							
	Polishing fluid. *See* Flammable liquid preparations, n.o.s							
	Polystyrene beads, *expandable, containing flammable liquid. See* Plastics moulding materials							
	Potassium arsenate	6.1	UN 1677	Poison	II	1,2	1,2	
	Potassium arsenite	6.1	UN 1678	Poison	II	1,2	1,2	
	Potassium bifluoride, *solid*	8	UN 1811	Corrosive	II	1,2	1,2	Keep dry
	Potassium bifluoride, *solution*	8	UN 1811	Corrosive	II	1,2	1,2	
	Potassium borohydride	4.3	UN 1870	Dangerous When Wet	I	1,2	5	
	Potassium bromate	5.1	UN 1484	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and 'away from' powdered metals
	Potassium chlorate	5.1	UN 1485	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and 'away from' powdered metals
	Potassium chlorate, *aqueous solution*	5.1	UN 2427	Oxidizer	II	1,2	1	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Potassium cuprocyanide	6.1	UN 1679	Poison	II	1,2	1,2	Stow 'away from' acids

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Potassium cyanide	6.1	UN 1680	Poison	I	1,2	1,2	Stow 'away from' acids
	Potassium dithionite	4.2	UN 1929	Spontaneously Combustible	II	1,2	5	Keep dry
	Potassium fluoride	6.1	UN 1812	St. Andrews Cross, Corrosive	III	1,2	1,2	Stow 'away from' acids
	Potassium hydrogen fluoride. *See* Potassium bifluoride, *solution*							
	Potassium hydroxide, *solid*	8	UN 1813	Corrosive	II	1,2	1,2	Keep dry
	Potassium hydroxide, *solution*	8	UN 1814	Corrosive	II	1,2	1,2	
	Potassium hypochlorite, *solution. See* Hypochlorite, *solutions, etc.*							
	Potassium metal	4.2	UN 2257	Spontaneously Combustible	II	1,2	5	
	Potassium, metal alloys	4.3	UN 1420	Dangerous When Wet	II	1,2	5	
	Potassium metavanadate	6.1	UN 2864	Poison	II	1,2	1,2	
	Potassium nitrate	5.1	UN 1486	Oxidizer	III	1,2	1,2	
	Potassium nitrate and sodium nitrite, *mixture*	5.1	UN 1487	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and cyanides, and 'away from' foodstuffs
	Potassium nitrate bags, *empty. See* Bags, *empty and unwashed, etc.*							
	Potassium nitrite	5.1	UN 1488	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and cyanides, and 'away from' foodstuffs
	Potassium oxide	8	UN 2033	Corrosive	II	1,2	1,2	Keep dry
	Potassium perchlorate	5.1	UN 1489	Oxidizer	II	1,2	1,2	Stow 'away from powdered metals
	Potassium permanganate	5.1	UN 1490	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and hydrogen peroxide
	Potassium peroxide	5.1	UN 1491	Oxidizer	I	1,2	1,2	Keep dry
	Potassium persulphate	5.1	UN 1492	Oxidizer	III	1,2	1,2	
	Potassium phosphide	4.3	UN 2012	Dangerous When Wet, Poison	I	1	5	
N	Potassium salts of nitro-aromatic derivatives, *explosive*	1.3C	UN 0158	Explosive (1.3C)	--	--	--	
	Potassium silicofluoride, *solid*	6.1	UN 2655	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	Potassium-sodium, *alloy*	4.3	UN 1422	Dangerous When Wet	I	1,2	5	
	Potassium sulphide, *anhydrous or containing less than 30% water of crystallization*	4.2	UN 1382	Spontaneously Combustible	II	1,2	1,2	Stow 'separated from' liquid acids
	Potassium sulphide, *hydrated, containing not less than 30% water of crystallization*	8	UN 1847	Corrosive	II	1,2	1,2	Stow 'separated from' explosives and acids
	Potassium superoxide	5.1	UN 2466	Oxidizer	I	1,2	1	Keep dry. Stow 'away from' combustible materials including packaging of other cargo
N	Powder paste, *containing, by weight, at least 35% water*	1.3C	UN 0159	Explosive (1.3C)	--	--	--	
N	Powder, smokeless	1.1C	UN 0160	Explosive (1.1C)	--	--	--	
N	Powder, smokeless	1.3C	UN 0161	Explosive (1.3C)	--	--	--	
	Primers, cap type	1.4B	UN 0378	Explosive (1.4B)	--	1,3	1,3	
	Primers, cap type	1.4S	UN 0044	None. Package to be marked '1.4S'	--	1,3	1,3	
N	Primers, cap type	1.1B	UN 0377	Explosive (1.1B)	--	--	--	
	Primers, tubular	1.4G	UN 0320	Explosive (1.4G)	--	1,3	1,3	
	Primers, tubular	1.4S	UN 0376	None. Package to be marked '1.4S'	--	1,3	1,3	
N	Primers, tubular	1.3G	UN 0319	Explosive (1.3G)	--	--	--	
	Projectiles, *inert, with tracer*	1.4 S	UN 0345	None. Package to be marked '1.4 S'	--	1,3	1,3	
N	Projectiles, *with burster or expelling charge*	1.2D	UN 0346	Explosive (1.2D)	--	--	--	
N	Projectiles, *with burster or expelling charge*	1.4D	UN 0347	Explosive (1.4D)	--	--	--	
N	Projectiles, *with bursting charge*	1.1D	UN 0168	Explosive (1.1D)	--	--	--	
N	Projectiles, *with bursting charge*	1.2D	UN 0169	Explosive (1.2D)	--	--	--	
N	Projectiles, *with bursting charge*	1.4D	UN 0344	Explosive (1.4D)	--	--	--	
N	Projectiles, *with bursting charge*	1.1F	UN 0167	Explosive (1.1F)	--	--	--	
N	Projectiles, *with bursting charge*	1.2F	UN 0334	Explosive (1.2F)	--	--	--	
	Propane	2.1	UN 1978	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Propanethiols	3.1	UN 2402	Flammable Liquid	II	1,3	5	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo.
		3.2	UN 2402	Flammable Liquid	II	1,3	1	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo
	Propanol	3.2	UN 1274	Flammable Liquid	II	1,2	1	
	Propionaldehyde	3.2	UN 1275	Flammable Liquid	II	1,2	1	
	Propionic acid, *solution containing not less than 80% acid*	8	UN 1848	Corrosive	III	1,2	1,2	Stow 'separated by a complete compartment or hold from' organic peroxides, and 'separated longitudinally by and intervening complete compartment or hold from' explosives
	Propionic anhydride	8	UN 2496	Corrosive	III	1,2	1,2	Keep dry. Glass carboys prohibited on passenger vessels
	Propionitrile	3.2	UN 2404	Flammable Liquid, Poison	II	1,3	5	Keep cool
	Propionyl chloride	8	UN 1815	Corrosive, Flammable Liquid	II	1	1	Keep dry. Stow 'separated longitudinally by an intervening complete compartment or hold from' explosives
	Propionyl peroxide, *maximum concentration 28% in solution*	5.2	UN 2132	Organic Peroxide	II	1	5	Maximum transport temperature 15 deg C
	n-Propyl acetate	3.2	UN 1276	Flammable Liquid	II	1,2	1	
	sec-Propyl alcohol. *See* Isopropanol							
	n-Propyl alcohol. *See* Propanol							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Propylamine. *See* Monopropylamine							
	Propyl benzene	3.3	UN 2364	Flammable Liquid	II	1,2	1,2	
	Propyl chloride	3.1	UN 1278	Flammable Liquid	II	1,3	5	Keep cool
	n-Propyl chloroformate	3.3	UN 2740	Flammable Liquid, Poison, Corrosive	I	1,2	1,2	
	Propylene	2.1	UN 1077	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Propylene diamine	3.3	UN 2258	Flammable Liquid, Corrosive	II	1,2	1,2	
	Propylenediamine	3.2	UN 2258	Flammable Liquid, Corrosive	II	1,2	1	
	Propylene dichloride	3.2	UN 1279	Flammable Liquid	II	1,2	1	
	Propyleneimine, *inhibited*	3.2	UN 1921	Flammable Liquid	I	1,2	1	
	Propylene oxide, *inhibited*	3.1	UN 1280	Flammable Liquid	I	1,3	5	Keep cool
	Propyl formates	3.2	UN 1281	Flammable Liquid	II	1,2	1	
	n-Propyl isocyanate	3.2	UN 2482	Flammable Liquid, Poison	I	1	5	Keep cool. Stow 'away from' living quarters and sources of heat
	Propyl mercaptan	3.1	UN 2704	Flammable Liquid	II	1,3	5	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo
		3.2	UN 2704	Flammable Liquid	II	1,3	1	Keep cool and dry. Stow 'away from' foodstuffs and all odor absorbing cargo
	n-Propyl nitrate	3.2	UN 1865	Flammable Liquid	II	1,2	1	
	Propyl trichlorosilane	8	UN 1816	Corrosive	II	1	1	Keep dry. Stow 'separated longitudinally by an intervening compartment or hold from' explosives
	Pyridine	3.2	UN 1282	Flammable Liquid, Poison	II	1,2	1	
	Pyrophoric alloys	4.2	UN 1383	Spontaneously Combustible	II	1	5	
	Pyrophoric fuel, n.o.s.	4.2	UN 1375	Spontaneously Combustible	I	1	5	Prohibited on vessels carrying explosives
	Pyrophoric liquids, n.o.s.. *See* Pyrophoric fuel, n.o.s							
	Pyrophoric metals	4.2	UN 1383	Spontaneously Combustible	II	1	5	
	Pyrosulphuryl chloride	8	UN 1817	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Pyroxylin. *See* Nitrocellulose							
	Pyrrolidine	3.2	UN 1922	Flammable Liquid	II	1,2	1	
	Rags, *oily*	4.2	UN 1856	Spontaneously Combustible	III	1,2	1,2	Keep dry
	Rare gases, *mixtures*	2.2	UN 1979	Nonflammable Gas	--	1,2	1,2	
	Rare gases, *mixtures with* nitrogen	2.2	UN 1981	Nonflammable Gas	--	1,2	1,2	
	Rare gases, *mixtures with* oxygen	2.2	UN 1980	Nonflammable Gas	--	1,2	1,2	
	Receptacles, *small, containing flammable compressed gas, not fitted with a dispersion device, not refillable*	2.1	UN 2037	Flammable Gas	--			
	Reducing liquid. *See* Flammable liquid preparation, n.o.s							
	Refrigerant gases, n.o.s.	2.1	UN 1078	Flammable Gas	--	1	1	
		2.2	UN 1078	Nonflammable Gas	--	1,2	1,2	
	Release devices, explosive	1.4 S	UN 0173	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Removing liquid. *See* Flammable liquid preparations, n.o.s							
	Resin, *solution in flammable liquid*	3.2	UN 1866	Flammable Liquid	II	1,2	1	
		3.3	UN 1866	Flammable Liquid	II	1,2	1,2	
	Rivets, explosive	1.4 S	UN 0174	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Road asphalt, *liquid, tars or oil. See* Cut-backs, *asphalt or bitumen*							
N	Rocket motors	1.1C	UN 0280	Explosive (1.1C)	--	--	--	
N	Rocket motors	1.2C	UN 0281	Explosive (1.2C)	--	--	--	
N	Rocket motors	1.3C	UN 0186	Explosive (1.3C)	--	--	--	
N	Rocket motors, *containing hypergolic liquids, with or without expelling charge*	1.2L	UN 0322	Explosive (1.2L)	--	--	--	
N	Rocket motors, *containing hypergolic liquids, with or without expelling charge*	1.3L	UN 0250	Explosive (1.3L)	--	--	--	
N	Rockets, line throwing	1.2G	UN 0238	Explosive (1.2G)	--	--	--	
N	Rockets, line throwing	1.3G	UN 0240	Explosive (1.3G)	--	--	--	
N	Rockets, *with bursting charge*	1.1E	UN 0181	Explosive (1.1E)	--	--	--	
N	Rockets, *with bursting charge*	1.2E	UN 0182	Explosive (1.2E)	--	--	--	
N	Rockets, *with bursting charge*	1.1F	UN 0180	Explosive (1.1F)	--	--	--	
N	Rockets, *with bursting charge*	1.2F	UN 0295	Explosive (1.2F)	--	--	--	
N	Rockets, *with inert head*	1.3C	UN 0183	Explosive (1.3C)	--	--	--	
	Rodenticides, n.o.s.	6.1	UN 1681	Poison	I/II	1,2	1,2	Stow 'separated from' foodstuffs.
		6.1	UN 1681	St. Andrews Cross	III	1,2	1,2	Stow 'separated from' foodstuffs.
		9	UN 1681	None	III	1,2	1,2	Stow 'away from' foodstuffs
	Rosin oil	3.2	UN 1286	Flammable Liquid	III	1,2	1	
		3.3	UN 1286	Flammable Liquid	III	1,2	1,2	
	R 22. See Chlorodifluoromethane							
	R 12. See Dichlorodifluoromethane							
	Rubber scrap, *powdered or granulated*	4.1	UN 1345	Flammable Solid	II	1,2	1,2	
	Rubber shoddy. *See* Rubber scrap							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Rubber solution	3.2 3.3	UN 1287 UN 1287	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Rubidium, *(metal)*	4.3	UN 1423	Dangerous When Wet	I	1,2	5	
N	Samples, explosive substance, *other than primary explosives*	1	UN 0190	None	--	--	--	
	Sand acid. *See* Fluosilicic acid							
	Seed cake, *containing vegetable oil, mechanically expelled seeds, containing more than 10% of oil or more than 20% of oil and moisture combined*	4.2	UN 1386	None. Package to be marked 'Class 4.2'	III	1,2	5	
	Seed cake, *containing vegetable oil, solvent extractions and expelled seeds, containing not more than 10% of oil and, when the amount of moisture is higher than 10%, not more than 20% of oil and moisture combined*	4.2	UN 1386	None. Package to be marked 'Class 4.2'	III	1,2	1,2	
	Seed cake, *containing vegetable oil, solvent extractions containing not more than 1.5% of oil and 11% of moisture*	4.2	UN 2217	None. Package to be marked 'Class 4.2'	III	1,2	1,2	
	Selenic acid	8	UN 1905	Corrosive	I	1,2	1,2	Keep dry
	Selenium hexafluoride	2.3	UN 2194	Poison Gas	--	1	5	Stow 'away from' living quarters
	Shale oil	3.2 3.3	UN 1288 UN 1288	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Sheep dips, *(poisonous)*, n.o.s.	6.1 6.1 9	UN 1682 UN 1682 UN 1682	Poison St. Andrews Cross None	I/II III III	1,2 1,2 1,2	1,2 1,2 1,2	Stow 'separated from' foodstuffs. Stow 'separated from' foodstuffs. Stow 'away from' foodstuffs.&
	Shellac. *See* Paints, *etc.*							
	Signal devices, hand	1.4S	UN 0373	None. Package to be marked '1.4S'	--	1,3	1,3	
	Signal devices, hand	1.4 G	UN 0191	Explosive (1.4G)	--	1,3	1,3	
N	Signals, distress, *ship (other than water-activated)*	1.1G	UN 0194	Explosive (1.1G)	--	--	--	
N	Signals, distress, *ship (other than water-activated)*	1.3G	UN 0195	Explosive (1.3G)	--	--	--	
N	Signals, railway track, explosive	1.1G	UN 0192	Explosive (1.1G)	--	--	--	
N	Signals, railway track, explosive	1.4S	UN 0193	None. Package to be marked '1.4S'	--	--	--	
N	Signals, smoke, *with explosive sound unit*	1.1G	UN 0196	Explosive (1.1G)	--	--	--	
N	Signals, smoke, *with explosive sound unit*	1.2G	UN 0313	Explosive (1.2G)	--	--	--	
	Signals, smoke, *without explosive sound unit*	1.4 G	UN 0197	Explosive (1.4G)	--	1,3	1,3	
	Silane	2.3	UN 2203	Poison Gas, Flammable Gas	--	1	5	Shade from radiant heat. Stow 'away from' living quarters, 'separated from' oxidizers
	Silicofluoric acid. *See* Fluosilicic acid							
	Silicofluorides, *solid*, n.o.s.	6.1	(UN 2811)	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	Silicon chloride. *See* Silicon tetrachloride							
	Silicon powder, *amorphous*	4.1	UN 1346	Flammable Solid	III	1,2	1,2	
	Silicon tetrachloride	8	UN 1818	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Silicon tetrafluoride	2.3	UN 1859	Poison Gas, Corrosive	--	1	5	
	Silver arsenite	6.1	UN 1683	Poison	II	1,2	1,2	
	Silver cyanide	6.1	UN 1684	Poison	II	1,2	1,2	Stow 'away from' strong liquid acids
	Silver nitrate	5.1	UN 1493	Oxidizer	II	1,2	1,2	Stow 'away from' foodstuffs
	Sisal, dry. See Fibre, *vegetable, dry*							
	Sludge acid	8	UN 1906	Corrosive	II	1,2	1	Stow 'away from' fluorides. Metal drums only under deck
	Soda lime	8	UN 1907	Corrosive	III	1,2	1,2	Keep dry
	Sodium aluminate, *solution*	8	UN 1819	Corrosive	II	1,2	1,2	
	Sodium amalgam	4.3	UN 1424	Dangerous When Wet	I	1,2	1,2	
	Sodium amide	4.3	UN 1425	Dangerous When Wet	II	1,2	5	
	Sodium-ammonium-vanadate	6.1	UN 2863	Poison	II	1,2	1,2	
	Sodium arsanilate	6.1	UN 2473	St. Andrews Cross	III	1,2	1,2	
	Sodium arsenate	6.1	UN 1685	Poison	II	1,2	1,2	
	Sodium arsenite, *aqueous solutions*	6.1 6.1	UN 1686 UN 1686	Poison St. Andrews Cross	I/II III	1,2 1,2	1,2 1,2	
	Sodium arsenite, *solid*	6.1	UN 2027	Poison	II	1,2	1,2	Stow 'away from' oxidizers and organic peroxides
	Sodium azide	6.1	UN 1687	Poison	II	1,2	1,2	Stow 'away from' heavy metals and their compounds, 'separated from' acids
	Sodium bisulphate, *solid. See* Sodium hydrogen sulphate							
	Sodium bisulphite, *solution. See* Sodium hydrogen sulphite, *solution*							
	Sodium borohydride	4.3	UN 1426	Dangerous When Wet	I	1,2	5	
	Sodium bromate	5.1	UN 1494	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals, 'separated from' ammonium compounds
	Sodium cacodylate	6.1	UN 1688	Poison	II	1,2	1,2	Stow 'away from' acids
	Sodium chlorate	5.1	UN 1495	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals, 'separated from' ammonium compounds
	Sodium chlorate, *aqueous solution*	5.1	UN 2428	Oxidizer	II	1,2	1	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Sodium chlorite	5.1	UN 1496	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals, 'separated from' ammonium compounds
	Sodium chlorite, *solution containing more than 5% available chlorine*	8	UN 1908	Corrosive	II	1,2	1	Glass carboys in hampers not permitted under deck
	Sodium cuprocyanide, *solid*	6.1	UN 2316	Poison	I	1,2	1,2	Keep dry. Stow 'separated from' acids
	Sodium cyanide	6.1	UN 1689	Poison	I	1,2	1,2	Stow 'away from' acids

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
N	Sodium dinitro-o-cresolate, *dry or containing, by weight, less than 15% water*	1.3C	UN 0234	Explosive (1.3C)	--	--	--	
	Sodium dinitro-o-cresolate, *wetted with not less than 15% of water*	4.1	UN 1348	Flammable Solid, Poison	I	1,2	5	Stow 'away from' heavy metals and their compounds
	Sodium dinitro-o-cresolate, *wetted with not less than 10% of water*	4.1	UN 1348	Flammable Solid, Poison	I	1	5	Stow 'away from' heavy metals and their compounds
	Sodium dithionite	4.2	UN 1384	Spontaneously Combustible	II	1,2	1,2	New metal drums only under deck
	Sodium fluoride, *solid*	6.1	UN 1690	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	Sodium fluoride, *solution*	6.1	(UN 2810)	Poison	II	1,2	1,2	
	Sodium hydrate. *See* Sodium hydroxide, *solution*							
	Sodium hydride	4.3	UN 1427	Dangerous When Wet	I	1,2	5	
	Sodium hydrogen fluoride	8	UN 2439	Corrosive	II	1,3	1,3	Keep cool and dry
	Sodium hydrogen sulphate, *containing more than 3% free acid*	8	UN 1821	Corrosive	II	1,2	1,2	
	Sodium hydrogen sulphite, *solution*	8	UN 1909	Corrosive	II	1,2	1,2	
	Sodium hydrosulphide, *solid*	4.2	UN 2318	Spontaneously Combustible	II	1,2	1,2	
	Sodium hydroxide, *solid*	8	UN 1823	Corrosive	II	1,2	1,2	Keep dry
	Sodium hydroxide, *solution*	8	UN 1824	Corrosive	II	1,2	1,2	
	Sodium, *(metal)*	4.3	UN 1428	Dangerous When Wet	II	1,2	5	
	Sodium *metal, dispersion in organic liquids*	4.3	UN 1429	Dangerous When Wet	I	1,2	5	
	Sodium methylate	4.3	UN 1431	Dangerous When Wet	I	1,2	1	
	Sodium methylate, *solutions in alcohol*	3.2 3.3	UN 1289 UN 1289	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Sodium monoxide	8	UN 1825	Corrosive	II	1,2	1,2	Keep dry
	Sodium nitrate	5.1	UN 1498	Oxidizer	III	1,2	1,2	
	Sodium nitrate and potash, *mixture*	5.1	UN 1478	Oxidizer	II	1,2	1,2	
	Sodium nitrate and potassium nitrate, *mixtures*	5.1	UN 1499	Oxidizer	III	1,2	1,2	
	Sodium nitrate bags, *empty. See* Bags, *empty and unwashed, etc.*							
	Sodium nitrite	5.1	UN 1500	Oxidizer	II	1,2	1,2	
	Sodium pentachlorophenate	6.1	UN 2567	Poison	II	1,2	1,2	
	Sodium percarbonates	5.1	UN 2467	Oxidizer	III	1,2	1,2	Keep dry
	Sodium perchlorate	5.1	UN 1502	Oxidizer	II	1,2	1,2	Stow 'away from' foodstuffs, 'separated from' ammonium compounds and cyanides. Paper bags prohibited on passenger vessels
	Sodium permanganate	5.1	UN 1503	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and hydrogen peroxide
	Sodium peroxide	5.1	UN 1504	Oxidizer	I	1,2	1	Keep dry. Stow 'away from' powdered metals, permanganates, and combustible packagings and cargo
	Sodium persulphate	5.1	UN 1505	Oxidizer	III	1,2	1,2	
	Sodium phenolate, *solid*	8	UN 2497	Corrosive	III	1,2	1,2	
	Sodium phosphide	4.3	UN 1432	Dangerous When Wet, Poison	I	1	5	
N	Sodium picramate, *dry or containing, by weight, less than 20% water*	1.3C	UN 0235	Explosive (1.3C)	--	--	--	
	Sodium picramate, *wetted with not less than 20% of water*	4.1	UN 1349	Flammable Solid	I	1,2	5	Stow 'away from' heavy metals and their compounds
	Sodium-potassium, *alloy. See* Potassium-sodium, *alloy*							
N	Sodium salts of nitro-aromatic derivatives, *explosive*	1.3C	UN 0203	Explosive (1.3C)	--	--	--	
	Sodium silicofluoride, *solid*	6.1	UN 2674	St. Andrews Cross	III	1,2	1,2	Stow 'away from' acids
	Sodium sulphide, *anhydrous or containing less than 30% water of crystallization*	4.2	UN 1385	Spontaneously Combustible	II	1,2	1,2	Stow 'separated from' acids
	Sodium sulphide, *hydrated, containing not less than 30% water of crystallization*	9	UN 1849	None	II	1,2	1,2	Stow 'separated from' explosives and acids
	Sodium superoxide	5.1	UN 2547	Oxidizer	I	1,2	5	Keep dry. Stow 'away from' powdered metals, permanganates and combustible packaging and cargo
	Solvents, *(non-toxic)*, n.o.s.	3.2 3.3	UN 1998 UN 1993	Flammable Liquid Flammable Liquid	II II	1,2 1,2	1 1,2	
	Solvents, *(toxic)*, n.o.s.	3.2	UN 1997	Flammable Liquid, Poison	II	1,2	1	
		3.3	UN 1997	Flammable Liquid, Poison	II	1,2	1,2	
N	Sounding devices, explosive	1.1E	UN 0374	Explosive (1.1E)	--	--	--	
N	Sounding devices, explosive	1.2E	UN 0375	Explosive (1.2E)	--	--	--	
N	Sounding devices, explosive	1.1F	UN 0296	Explosive (1.1F)	--	--	--	
N	Sounding devices, explosive	1.2F	UN 0204	Explosive (1.2F)	--	--	--	
	Spent mixed acid. See Acid mixtures, *spent*							
	Spirits of salts. *See* Hydrochloric acid							
	Squibs	1.4 S	UN 0206	None. Package to be marked '1.4 S'	--	1,3	1,3	
	Stains. *See* Paints, *etc.*							
	Stannic chloride, *anhydrous*	8	UN 1827	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Stannic chloride pentahydrate	8	UN 2440	Corrosive	III	1,2	1,2	Keep dry
	Stannic phosphides	4.3	UN 1433	Dangerous When Wet	I	1	5	
	Steel swarf. *See* Iron swarf							

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Stibine	2.3	(UN 1953)	Poison Gas, Flammable Gas	--	1	5	Stow 'away from' living quarters
	Straw	4.1	UN 1327	None	III	1,2	1,2	Stow 'away from' animal or vegetable oils
	Strike anywhere matches. *See* Matches, *strike anywhere*							
	Strontium, *alloys, non-pyrophoric*	4.3	UN 1434	Dangerous When Wet	II	1,2	5	
	Strontium arsenite	6.1	UN 1691	Poison	II	1,2	1,2	
	Strontium chlorate	5.1	UN 1506	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals, 'separated from' ammonium compounds
	Strontium nitrate	5.1	UN 1507	Oxidizer	III	1,2	1,2	
	Strontium perchlorate	5.1	UN 1508	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals
	Strontium peroxide	5.1	UN 1509	Oxidizer	II	1,2	1,2	Keep dry
	Strontium phosphide	4.3	UN 2013	Dangerous When Wet, Poison	I	1	5	
	Strontium, powdered. *See* Pyrophoric metals							
	Strychnine, *and salts*	6.1	UN 1692	Poison	I	1,2	1,2	
	Styrene monomer, *inhibited*	3.3	UN 2055	Flammable Liquid	II	1,2	1,2	
N	Substances, explosive, n.o.s.	1.1L	UN 0357	Explosive (1.1L)	--	--	--	
N	Substances, explosive, n.o.s.	1.2L	UN 0358	Explosive (1.2L)	--	--	--	
N	Substances, explosive, n.o.s.	1.3L	UN 0359	Explosive (1.3L)	--	--	--	
	Succinic acid peroxide, *technical pure*	5.2	UN 2135	Organic Peroxide	I	1	5	
	Sulphides, n.o.s.	4.2	--	Spontaneously Combustible	III	1	5	
	Sulphur chlorides	8	UN 1828	Corrosive	I	1	1	Keep dry. Glass carbons prohibited on passenger vessels
	Sulphur dichloride. *See* Sulphur chlorides							
	Sulphur dioxide	2.3	UN 1079	Poison Gas	--	1,2	5	Stow 'away from' living quarters
	Sulphur hexafluoride	2.2	UN 1080	Nonflammable Gas	--	1,2	1,2	
	Sulphuric acid, *containing more than 51% acid*	8	UN 1830	Corrosive	II	1,2	1	Stow 'away from' fluorides and all other corrosives except nitric acids, sulphur trioxide and other sulphuric acids
	Sulphuric acid, *containing not more than 51% acid*	8	UN 1830	Corrosive	II	1,2	1	Stow 'away from' fluorides. Glass carboys in hampers not permitted under deck
	Sulphuric acid, *fuming*	8	UN 1831	Corrosive	I	1,2	1	Stow 'away from' fluorides and all other corrosives except nitric acids, sulphur trioxide and other sulphuric acids
	Sulphuric acid, *spent*	8	UN 1832	Corrosive	II	1,2	1	Stow 'away from' fluorides. For concentrations of more than 51% acid, stow 'away from' all other corrosives except nitric acids, sulphur trioxide and other sulphuric acids
	Sulphuric and hydrofluoric acid, mixtures. *See* Acid mixtures, *hydrofluoric and sulphuric*							
	Sulphuric anhydride. *See* Sulphur trioxide, *stabilized*							
	Sulphur, *lump or powder*	4.1	UN 1350	Flammable Solid	III	1,2	1,2	Protect from sparks and open flame. Stow 'separated from' oxidizing substances
	Sulphur, molten	4.1	UN 2448	Flammable Solid	III	1	1	Stow 'separated from' oxidizers, 'away from' living quarters. Protect from sparks and open flame
	Sulphurous acid	8	UN 1833	Corrosive	II	1,2	1	Glass carboys in hampers not permitted under deck
	Sulphur tetrafluoride	2.3	UN 2418	Poison Gas	--	1	5	Stow 'away from' living quarters
	Sulphur trioxide, *stabilized*	8	UN 1829	Corrosive	I	1,2	1,2	Keep dry. Glass bottles not permitted under deck. Stow 'away from' other corrosives except nitric and sulphuric acids
	Sulphuryl chloride	8	UN 1834	Corrosive	I	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Sulphuryl fluoride	2.2	UN 2191	Nonflammable Gas, Corrosive	--	1,2	5	Stow 'away from' living quarters
	Tars, *liquid.* *See* Cut-backs, *asphalt or bitumen*							
	Tear gas candles, *non-explosive*	6.1	UN 1700	Poison	II	1	5	
	Tear gas grenades, *non-explosive.* *See* Tear gas candles							
	Tear gas, *(irritating substances, liquid or solid)*, n.o.s.	6.1	UN 1693	Poison	I/II	1	5	
		6.1	UN 1693	St. Andrews Cross	III	1	5	
	Tellurium hexafluoride	2.3	UN 2195	Poison Gas	--	1	5	Stow 'away from' living quarters
	T.E.L. *See* Motor fuel anti-knock mixtures							
	Terpene hydrocarbons n.o.s.	3.3	UN 2319	Flammable Liquid	III	1,2	1,2	
	Terpinolene	3.3	UN 2541	Flammable Liquid	III	1,2	1,2	
	Tetrabromoethane. *See* Acetylene tetrabromide							
	1,1,2,2-Tetrachloroethane	6.1	UN 1702	Poison	II	1,2	1,2	
	Tetrachloroethylene	6.1	UN 1897	St. Andrews Cross	III	1,2	1,2	
	Tetraethyl dithiopyrophosphate, *liquid and mixtures*	6.1	UN 1704	Poison	I/II	1	5	
		6.1	UN 1704	St. Andrews Cross	III	1	5	
	Tetraethyl dithiopyrophosphate *with gases, including solutions and mixtures thereof*	6.1	UN 1703	Poison, Nonflammable gas	I/II	1	5	Shade from radiant heat. Segregation same as for nonflammable gases.
		6.1	UN 1703	St. Andrews Cross, Nonflammable gas	III	1	5	Shade from radiant heat. Segregation same as for nonflammable gases.
	Tetraethylenepentamine	8	UN 2320	Corrosive	III	1,2	1,2	Glass carboys prohibited on passenger vessels
	Tetraethyl lead. *See* Motor fuel anti-knock mixtures							
	Tetraethyl pyrophosphate and compressed gas, *mixture*	6.1	UN 1705	Poison, Nonflammable gas	I/II	1	5	Shade from radiant heat. Segregation same as for nonflammable gases

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
		6.1	UN 1705	St. Andrews Cross, Nonflammable gas	III	1	5	Shade from radiant heat. Segregation same as for nonflammable gases
	Tetraethyl silicate	3.3	UN 1292	Flammable Liquid	II	1,2	1,2	
	Tetrafluoroethylene, *inhibited*	2.2	UN 1081	Nonflammable Gas	--	1,2	1,2	Stow 'away from' living quarters
	Tetrafluorohydrazine	2.3	(UN 1955)	Poison Gas	--	11	5	Stow 'away from' living quarters and readily combustible substances, 'separated from' hydrogen
	Tetrafluoromethane	2.2	UN 1982	Nonflammable Gas	--	1,2	1,2	
	1,2,3,6-Tetrahydrobenzaldehyde	3.3	UN 2498	Flammable Liquid	III	1,2	1,2	
	Tetrahydrofuran	3.1	UN 2056	Flammable Liquid	II	1,3	5	Keep cool
	1,2,3,6-Tetrahydropyridine	3.2	UN 2410	Flammable Liquid	II	1,2	1	
	Tetrahydrothiophene	3.2	UN 2412	Flammable Liquid	II	1,2	1	
	Tetralin hydroperoxide, *technical pure*	5.2	UN 2136	Organic Peroxide	I	1	5	
	Tetramethylammonium hydroxide	8	UN 1835	Corrosive	II	1,2	1,2	
	1,1,3,3-Tetramethyl butyl hydroperoxide, *technical pure*	5.2	UN 2160	Organic Peroxide	II	1	5	
	1,1,3,3-Tetramethyl butyl peroxy-2-ethyl hexanoate, *technical pure*	5.2	UN 2161	Organic Peroxide	I	1	5	Maximum transport temperature 20 deg C
	Tetramethylsilane	3.1	UN 2749	Flammable Liquid	I	1	5	Keep cool. Shade from radiant heat
N	Tetranitro-aniline	1.1D	UN 0207	Explosive (1.1D)	--	--	--	
	Tetranitromethane	5.1	UN 1510	Oxidizer	I	1	5	Shade from radiant heat. Stow 'away from' foodstuffs
	Textile waste, *(wet)*, n.o.s.	4.2	UN 1857	Spontaneously Combustible	III	1,2	1,2	
	Thallium chlorate	5.1	UN 2573	Oxidizer, Poison	II	1,2	1,2	
	Thallium compounds	6.1	UN 1707	Poison	II	1,2	1,2	
	Thinners. *See* Paints, *etc.*							
	Thinning liquid. *See* Flammable liquid preparations, n.o.s							
	Thioacetic acid	3.2	UN 2436	Flammable Liquid	II	1,2	1	
	Thiocarbonyl chloride. See Thiophosgene							
	Thioglycolic acid	8	UN 1940	Corrosive	II	1,2	1,2	Glass carboys in hampers prohibited under deck
	Thionyl chloride	8	UN 1836	Corrosive	I	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	4-Thiopentenal	6.1	UN 2785	St. Andrews Cross	III	1	5	Segregation same as for flammable liquids if flashpoint below 61 deg C. Shade from radiant heat and sunlight. Stow 'away from' living quarters, acids and bases
	Thiophene	3.2	UN 2414	Flammable Liquid	II	1,2	1	
	Thiophosgene	6.1	UN 2474	Poison	II	1,2	1	Stow 'away from' acids
	Thiophosphoryl chloride	8	UN 1837	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Tin chloride, *fuming. See* Stannic chloride, *anhydrous*							
	Tinctures, *medicinal*	3.2	UN 1293	Flammable Liquid	II	1,2	1	
	Tin tetrachloride. *See* Stannic chloride, *anhydrous*							
	Titanium hydride	4.1	UN 1871	Flammable Solid	II	1,2	5	
	Titanium metal powder, dry	4.2	UN 2546	Spontaneously Combustible	II	1,2	5	
	Titanium metal powder, wet, *with not less than 25% water (a visible excess of water must be present)*	4.1	UN 1352	Flammable Solid	II	1,2	5	
	Titanium tetrachloride	8	UN 1838	Corrosive	II	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Titanium trichloride	4.2	UN 2441	Spontaneously Combustible, Corrosive	II	1,2	1,2	
	Toe puffs, *nitrocellulose base*	4.1	UN 1353	Flammable Solid	III	1	5	
	Toluene	3.2	UN 1294	Flammable Liquid	II	1,2	1	
	Toluene diisocyanate *(T.D.I.)*	6.1	UN 2078	Poison	II	1,3	1,3	Shade from radiant heat. Stow 'away from' living quarters and sources of heat
	Toluidines *(o-, m-, p-)*	6.1	UN 1708	Poison	II	1,2	1,2	Stow 'away from' acids
	2,4-Toluylenediamine	6.1	UN 1709	St. Andrews Cross	III	1,2	1,2	
N	Torpedoes, *with bursting charge*	1.1E	UN 0329	Explosive (1.1E)	--	--	--	
N	Torpedoes, *with bursting charge*	1.1F	UN 0330	Explosive (1.1F)	--	--	--	
	Tracers for ammunition	1.4 G	UN 0306	Explosive (1.4G)	--	1,3	1,3	
N	Tracers for ammunition	1.3G	UN 0212	Explosive (1.3G)	--	--	--	
	Triallylamine	3.3	UN 2610	Flammable Liquid	II	1,2	1,2	
	Tributylamine	8	UN 2542	Corrosive	III	1,2	1,2	
	Trichloroacetic acid, *solid*	8	UN 1839	Corrosive	II	1,2	1,2	Keep dry
	Trichloroacetic acid, *solutions*	8	UN 2564	Corrosive	II	1,2	1	Glass carboys in hampers prohibited under deck
	Trichloroacetyl chloride	8	UN 2442	Corrosive	II	1	5	Keep dry
	Trichlorobenzene, *liquid*	6.1	UN 2321	St. Andrews Cross	III	1,2	1,2	
	Trichlorobutene	6.1	UN 2322	St. Andrews Cross	III	1,3	1,3	Stow 'away from' sources of heat. Segregation same as for flammable liquids
	Trichloroethylene	6.1	UN 1710	St. Andrews Cross	III	1,2	1,2	
	Trichloroisocyanuric acid, *dry*	5.1	UN 2468	Oxidizer	II	1,2	1,2	Shade from radiant heat. Keep dry. Stow 'separated from' nitrogen compounds
	Trichlorosilane	4.3	UN 1295	Dangerous When Wet, Flammable Liquid	I	1	5	

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Tricresylphosphate, *with more than 3% ortho isomer*	6.1	UN 2574	Poison	II	1,2	1,2	
	Triethylaluminium. See Aluminium triethyl							
	Triethylamine	3.2	UN 1296	Flammable Liquid	II	1,2	1	
	Triethylenetetramine	8	UN 2259	Corrosive	II	1,2	1	Stow 'separated from' nitric acid, 'away from' acids, copper and copper alloys and living quarters
	Triethyl phosphite	3.3	UN 2323	Flammable Liquid	III	1,2	1,2	
	Trifluorobromomethane. See Bromotrifluoromethane							
	Trifluorochloroethane	2.2	UN 1983	Nonflammable Gas	--	1,2	1,2	
	Trifluorochloroethylene	2.1	UN 1082	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Trifluorochloromethane. See Chlorotrifluoromethane							
	Trifluoroethane	2.1	UN 2035	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Trifluoromethane	2.2	UN 1984	Nonflammable Gas	--	1,2	1,2	
	Triisobutyl aluminium	4.2	UN 1930	Spontaneously Combustible	I	1	1	
	Triisobutylene	3.3	UN 2324	Flammable Liquid	II	1,2	1,2	
	Triisopropyl borate	3.3	UN 2616	Flammable Liquid	II	1,2	1,2	
	Trimethylaluminium. See Aluminium trimethyl							
	Trimethylamine, *anhydrous*	2.1	UN 1083	Flammable Gas, Poison Gas	--	1	5	Stow 'away from' living quarters
	Trimethylamine, *aqueous solutions containing not more than 30% of trimethylamine*	3.2	UN 1297	Flammable Liquid	II	1,2	1	Stow 'away from' mercury and its compounds
	1,3,5-Trimethylbenzene	3.3	UN 2325	Flammable Liquid	III	1,2	1,2	
	Trimethyl borate	3.1	UN 2416	Flammable Liquid	II	1,3	5	Keep cool
	Trimethylchlorosilane	3.2	UN 1298	Flammable Liquid, Corrosive	I	1,2	1	
	Trimethylcyclohexylamine	8	UN 2326	Corrosive	III	1,2	1,2	Glass carboys prohibited on passenger vessels
	3,3,5-Trimethylhexamethylene diamine	8	UN 2327	Corrosive	III	1,2	1,2	Glass carboys prohibited on passenger vessels
	Trimethylhexamethylene diisocyanate	6.1	UN 2328	Poison	II	1,2	1	
	Trimethyl phosphite	3.3	UN 2329	Flammable Liquid	III	1,2	1,2	
N	Trinitro-aniline	1.1D	UN 0153	Explosive (1.1D)	--	--	--	
N	Trinitroanisole	1.1D	UN 0213	Explosive (1.1D)	--	--	--	
N	Trinitrobenzene, *dry or containing, by weight, less than 35% water*	1.1D	UN 0214	Explosive (1.1D)	--	--	--	
N	Trinitrobenzenesulfonic acid	1.1L	UN 0386	Explosive (1.1L)	--	--	--	
	Trinitrobenzene, *wetted with not less than 10% of water*	4.1	UN 1354	Flammable Solid	I	1	5	Stow 'away from' heavy metals and their compounds
N	Trinitrobenzoic acid, *dry or containing, by weight, less than 30% water*	1.1D	UN 0215	Explosive (1.1D)	--	--	--	
	Trinitrobenzoic acid, *wetted with not less than 10% of water*	4.1	UN 1355	Flammable Solid	I	1	5	Stow 'away from' heavy metals and their compounds
N	Trinitrochlorobenzene	1.1D	UN 0155	Explosive (1.1D)	--	--	--	
N	Trinitrofluorenone	1.1D	UN 0387	Explosive (1.1D)	--	--	--	
N	Trinitrometacresol	1.1D	UN 0216	Explosive (1.1D)	--	--	--	
N	Trinitronaphthalene	1.1D	UN 0217	Explosive (1.1D)	--	--	--	
N	Trinitrophenetole	1.1D	UN 0218	Explosive (1.1D)	--	--	--	
N	Trinitrophenol, *dry or containing, by weight, less than 30% water*	1.1D	UN 0154	Explosive (1.1D)	--	--	--	
	Trinitrophenol, wetted. See Picric acid, wetted							
N	Trinitrophenylmethylnitramine	1.1D	UN 0208	Explosive (1.1D)	--	--	--	
N	Trinitroresorcinol, *containing, by weight, not less than 20% water or mixture of alcohol and water*	1.1D	UN 0394	Explosive (1.1D)	--	--	--	
N	Trinitroresorcinol, *dry or containing, by weight, less than 20% water or mixture of alcohol and water*	1.1D	UN 0219	Explosive (1.1D)	--	--	--	
N	Trinitrotoluene, *dry or containing, by weight, less than 30% water*	1.1D	UN 0209	Explosive (1.1D)	--	--	--	
N	Trinitrotoluene *mixed* with hexanitrostilbene	1.1D	UN 0388	Explosive (1.1D)	--	--	--	
N	Trinitrotoluene *mixed* with trinitrobenzene	1.1D	UN 0388	Explosive (1.1D)	--	--	--	
N	Trinitrotoluene *mixed* with trinitrobenzene and hexanitrostilbene	1.1D	UN 0389	Explosive (1.1D)	--	--	--	
	Trinitrotoluene, *wetted with not less than 10% of water*	4.1	UN 1356	Flammable Solid	I	1	5	Stow 'away from' heavy metals and their compounds
	Tripropylamine	3.3	UN 2260	Flammable Liquid, Corrosive	II	1,2	1,2	
	Tripropylene	3.2	UN 2057	Flammable Liquid	II	1,2	1	
		3.3	UN 2057	Flammable Liquid	II	1,2	1,2	
	Tris-(1-aziridinyl)phosphine oxide, *solution*	6.1	UN 2501	Poison	II	1,2	1,2	
N	Tritonal	1.1D	UN 0390	Explosive (1.1D)	--	--	--	
	Tungsten hexafluoride	2.3	UN 2196	Poison Gas	--	1	5	Stow 'away from' living quarters
	Turpentine	3.3	UN 1299	Flammable Liquid	III	1,2	1,2	
	Turpentine substitute	3.2	UN 1300	Flammable Liquid	II	1,2	1	
		3.3	UN 1300	Flammable Liquid	II	1,2	1,2	
	U D M H. See Dimethylhydrazine, *unsymmetrical*							
	Undecane	3.3	UN 2330	Flammable Liquid	III	1,2	1,2	
	Urea hydrogen peroxide	5.1	UN 1511	Oxidizer	III	1,2	1,2	Keep dry Shade from radiant heat
N	Urea nitrate, *dry or containing, by weight, less than 20% water*	1.1D	UN 0220	Explosive (1.1D)	--	--	--	
	Urea nitrate, *wetted with not less than 10% of water*	4.1	UN 1357	Flammable Solid	I	1,2	1,2	
	Valeraldehyde	3.2	UN 2058	Flammable Liquid	II	1,2	1	
	Valeryl chlorides	8	UN 2502	Corrosive	II	1	1	Keep dry
	Vanadium oxitrichloride	8	UN 2443	Corrosive	II	1	1	Keep dry Stow 'away from' organic compounds

172.102 Optional Hazardous Materials Table (Cont'd)

(1) Notes and Symbols	(2) Hazardous Materials Description and Proper Shipping Names	(3) IMCO Class	(4) Identification Number	(5) Label(s) required	(6) Packaging Group	(7) Vessel Stowage Requirements (a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Vanadium pentoxide, *non-fused form*	6.1	UN 2862	Poison	II	1,2	1,2	
	Vanadium tetrachloride	8	UN 2444	Corrosive	I	1	1	Keep dry. Glass carboys prohibited on passenger vessels
	Vanadium trichloride	8	UN 2475	Corrosive	III	1,2	1,2	Keep dry
	Vanadium trioxide, *non-fused form*	6.1	UN 2860	Poison	II	1,2	1,2	
	Varnish. *See* Paints, *etc.*							
	Vinyl acetate, *inhibited*	3.2	UN 1301	Flammable Liquid	II	1,2	1	
	Vinyl bromide, *inhibited*	2.1	UN 1085	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Vinyl chloride, *inhibited*	2.1	UN 1086	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Vinyl ethyl ether, *inhibited*	3.1	UN 1302	Flammable Liquid	I	1,3	5	Keep cool
	Vinyl fluoride, *inhibited*	2.1	UN 1860	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Vinyl isobutyl ether, *inhibited*	3.2	UN 1304	Flammable Liquid	II	1,2	1	
	Vinyl methyl ether, *inhibited*	2.1	UN 1087	Flammable Gas	--	1,2	1	Stow 'away from' living quarters
	Vinyl Toluenes *(mixed isomers), inhibited*	3.3	UN 2618	Flammable Liquid	III	1,2	1,2	
	Vinyl trichlorosilane, *inhibited*	3.2	UN 1305	Flammable Liquid, Corrosive	I	1,2	1	
N	Warheads, rocket, *with burster or expelling charge*	1.4D	UN 0370	Explosive (1.4D)	--	--	--	
N	Warheads, rocket, *with burster or expelling charge*	1.4F	UN 0371	Explosive (1.4F)	--	--	--	
N	Warheads, rocket, *with bursting charge*	1.1D	UN 0286	Explosive (1.1D)	--	--	--	
N	Warheads, rocket, *with bursting charge*	1.2D	UN 0287	Explosive (1.2D)	--	--	--	
N	Warheads, rocket, *with bursting charge*	1.1F	UN 0369	Explosive (1.1F)	--	--	--	
N	Warheads, torpedo, *with bursting charge*	1.1D	UN 0221	Explosive (1.1D)	--	--	--	
	Water-gas	2.1	(UN 1953)	Flammable Gas, Poison Gas	--	1	5	Stow 'away from' living quarters
	White asbestos. *See* Asbestos, white							
	White phosphorus, *dry. See* Phosphorus, *white or yellow, dry*							
	White phosphorus, *wet. See* Phosphorus, *white or yellow, in water*							
	Wood alcohol. See Methanol							
	Wool waste, *wet*	4.2	UN 1387	Spontaneously Combustible	III	1,2	1,2	
	Xenon	2.2	UN 2036	Nonflammable Gas	--	1,2	1,2	
	Xylenes	3.2	UN 1307	Flammable Liquid	II	1,2	1	
		3.3	UN 1307	Flammable Liquid	II	1,2	1,2	
	Xylenols	6.1	UN 2261	Poison	II	1,2	1,2	
	Xylidines	6.1	UN 1711	Poison	II	1,2	1,2	Stow 'away from' acids
	Xylols. See Xylenes							
	Xylyl bromide	6.1	UN 1701	Poison	II	1	5	
	Yellow phosphorus, *dry. See* Phosphorus, *white or yellow, dry*							
	Yellow phosphorus, *wet. See* Phosphorus, *white or yellow, in water*							
	Zinc arsenate and arsenite, *solid mixtures*	6.1	UN 1712	Poison	II	1,2	1,2	
	Zinc ashes	4.3	UN 1435	Dangerous When Wet	III	1,2	1,2	
	Zinc bromate	5.1	UN 2469	Oxidizer	III	1,2	1,2	Stow 'away from' powdered metals and 'separated from' ammonium compounds
	Zinc chlorate	5.1	UN 1513	Oxidizer	II	1,2	1,2	Stow 'away from' powdered metals, 'separated from' ammonium compounds
	Zinc chloride, *anhydrous*	8	UN 2331	Corrosive	III	1,2	1,2	Keep dry
	Zinc chloride, *solution*	8	UN 1840	Corrosive	III	1,2	1,2	
	Zinc cyanide	6.1	UN 1713	Poison	I	1,2	1,2	Stow 'away from' acids
	Zinc dithionite	9	UN 1931	None	III	1,2	1,2	Keep dry. Stow 'away from' acids
	Zinc ethyl. See Diethylzinc							
	Zinc nitrate	5.1	UN 1514	Oxidizer	II	1,2	1,2	
	Zinc permanganate	5.1	UN 1515	Oxidizer	II	1,2	1,2	Stow 'separated from' ammonium compounds and hydrogen peroxide
	Zinc peroxide	5.1	UN 1516	Oxidizer	II	1,2	1,2	Keep dry
	Zinc phosphide	6.1	UN 1714	Poison, Dangerous When Wet	II	1,2	1,2	Stow 'away from' acids and oxidizers
	Zinc, *powder or dust, non-pyrophoric*	4.3	UN 1436	Dangerous When Wet	II	1,2	1,2	
	Zinc, *powder or dust, pyrophoric. See* Pyrophoric metals							
	Zirconium hydride	4.1	UN 1437	Flammable Solid	II	1,2	5	
	Zirconium, *metal, dry, coiled wire, finished metal sheets, strip (thinner than 18 microns)*	4.2	UN 2009	Spontaneously Combustible	III	1	5	
	Zirconium, *metal, dry coiled wire or finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)*	4.1	(UN 1325)	Flammable Solid	III	1,2	1,2	
	Zirconium, *metal, dry, powder or sponge*	4.2	UN 2008	Spontaneously Combustible	II	1	5	
	Zirconium metal powder, dry	4.2	UN 2008	Spontaneously Combustible	II	1	5	
	Zirconium metal powder, wet *with not less than 25% water (a visible excess of water must be present)*	4.1	UN 1358	Flammable Solid	II	1,2	5	
N	Zirconium picramate, *dry or containing, by weight, less than 20% water*	1.3C	UN 0236	Explosive (1.3C)	--	--	--	
	Zirconium picramate, *wetted with not less than 20% of water*	5.1	UN 1517	Oxidizer	I	1	5	Stow 'away from' heavy metals and their salts
	Zirconium, *scrap*	4.2	UN 1932	Spontaneously Combustible	III	1	5	
	Zirconium, *suspended in flammable liquid*	3.1	UN 1308	Flammable Liquid	II	1	5	Keep cool
	Zirconium tetrachloride	8	UN 2503	Corrosive	III	1,2	1,2	Keep dry

14. A Numeric-Alpha index is added as Appendix A to Subpart B of Part 172 to read as follows:

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 0001	102	Alarm devices, explosive
UN 0004	102	Ammonium picrate
UN 0005	102	Cartridges for weapons
UN 0006	102	Cartridges for weapons
UN 0007	102	Cartridges for weapons
UN 0009	102	Ammunition, incendiary
UN 0010	102	Ammunition, incendiary
UN 0012	102	Cartridges for weapons
UN 0014	102	Cartridges for weapons, blank
UN 0015	102	Ammunition, smoke
UN 0016	102	Ammunition, smoke
UN 0018	102	Ammunition, tear producing
UN 0019	102	Ammunition, tear producing
UN 0020	102	Ammunition, toxic
UN 0021	102	Ammunition, toxic
UN 0022	102	Amorces
UN 0027	102	Black powder
UN 0028	102	Black powder, compressed
UN 0029	102	Blasting caps, non-electric
UN 0030	102	Blasting caps, electric
UN 0033	102	Bombs
UN 0034	102	Bombs
UN 0035	102	Bombs
UN 0037	102	Bombs, photo-flash
UN 0038	102	Bombs, photo-flash
UN 0039	102	Bombs, photo-flash
UN 0042	102	Boosters
UN 0042	102	Gaines, without detonator
UN 0043	102	Bursters
UN 0044	102	Caps, percussion
UN 0044	102	Primers, cap type
UN 0048	102	Charges, demolition
UN 0049	102	Cartridges, flash
UN 0050	102	Cartridges, flash
UN 0054	102	Cartridges, signal
UN 0055	102	Cases, cartridges, empty, with primer
UN 0056	102	Charges, depth
UN 0059	102	Charges, shaped
UN 0060	102	Charges, supplementary, explosive
UN 0065	102	Cord, detonating
UN 0066	102	Cord, igniter
UN 0070	102	Cutters, cable, explosive
UN 0072	102	Cyclotrimethylenetrinitramine
UN 0073	102	Detonators for ammunition
UN 0074	102	Diazodinitrophenol
UN 0075	102	Diethyleneglycol dinitrate
UN 0076	102	Dinitrophenol
UN 0077	102	Dinitrophenates
UN 0078	102	Dinitroresorcinol
UN 0079	102	Hexanitrodiphenylamine
UN 0081	102	Explosives, blasting, Type A
UN 0082	102	Explosives, blasting, Type B
UN 0083	102	Explosives, blasting, Type C
UN 0084	102	Explosives, blasting, Type D
UN 0092	102	Flares, surface
UN 0093	102	Flares, aerial
UN 0094	102	Photo-flash powder
UN 0096	102	Photo-flash powder
UN 0099	102	Fracturing devices, explosive
UN 0101	102	Fuse, instantaneous, non-detonating
UN 0102	102	Cord, detonating
UN 0103	102	Fuse, igniter
UN 0104	102	Cord, detonating, mild effect
UN 0105	102	Fuse, safety
UN 0106	102	Fuzes, detonating
UN 0107	102	Fuzes, detonating
UN 0110	102	Grenades, practice
UN 0113	102	Guanyl nitrosamino guanylidene hydrazine
UN 0114	102	Guanyl nitrosamino guanyl tetrazene
UN 0118	102	Hexolite
UN 0121	102	Igniters
UN 0124	102	Jet perforating guns, charged
UN 0129	102	Lead azide
UN 0130	102	Lead styphnate
UN 0131	102	Lighters, fuse
UN 0132	102	Deflagrating metal salts of aromatic nitro-derivatives, n.o.s.
UN 0133	102	Mannitol hexanitrate
UN 0135	102	Mercury fulminate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 0136	102	Mines
UN 0137	102	Mines
UN 0138	102	Mines
UN 0143	102	Nitroglycerine, desensitized
UN 0144	102	Nitroglycerine, spirit of
UN 0146	102	Nitrostarch
UN 0147	102	Nitro urea
UN 0150	102	Pentaerythrite tetranitrate
UN 0151	102	Pentolite
UN 0153	102	Trinitro-aniline
UN 0154	102	Trinitrophenol
UN 0155	102	Trinitrochlorobenzene
UN 0158	102	Potassium salts of nitro-aromatic derivatives
UN 0159	102	Powder paste
UN 0160	102	Powder, smokeless
UN 0161	102	Powder, smokeless
UN 0167	102	Projectiles
UN 0168	102	Projectiles
UN 0169	102	Projectiles
UN 0171	102	Ammunition, illuminating
UN 0173	102	Release devices, explosive
UN 0174	102	Rivets, explosive
UN 0180	102	Rockets
UN 0181	102	Rockets
UN 0182	102	Rockets
UN 0183	102	Rockets
UN 0186	102	Rocket motors
UN 0190	102	Samples, explosive substance
UN 0191	102	Signal devices, hand
UN 0192	102	Signals, railway track, explosive
UN 0193	102	Signals, railway track, explosive
UN 0194	102	Signals, distress
UN 0195	102	Signals, distress
UN 0196	102	Signals, smoke
UN 0197	102	Signals, smoke
UN 0203	102	Sodium salts of nitro-aromatic derivatives
UN 0204	102	Sounding devices, explosive
UN 0206	102	Squibs
UN 0207	102	Tetranitro-aniline
UN 0208	102	Trinitrophenylmethylnitramine
UN 0209	102	Trinitrotoluene
UN 0212	102	Tracers for ammunition
UN 0213	102	Trinitroanisole
UN 0214	102	Trinitrobenzene
UN 0215	102	Trinitrobenzoic acid
UN 0216	102	Trinitrometacresol
UN 0217	102	Trinitronaphthalene
UN 0218	102	Trinitrophenetole
UN 0219	102	Trinitroresorcinol
UN 0220	102	Urea nitrate
UN 0221	102	Warheads, torpedo
UN 0222	102	Ammonium nitrate
UN 0223	102	Ammonium nitrate fertilizers
UN 0224	102	Barium azide
UN 0225	102	Boosters, with detonator
UN 0225	102	Gaines, with detonator
UN 0226	102	Cyclotetramethylenetetranitramine
UN 0234	102	Sodium dinitro-o-cresolate
UN 0235	102	Sodium picramate
UN 0236	102	Zirconium picramate
UN 0237	102	Charges, shaped, flexible, linear
UN 0238	102	Rockets, line throwing
UN 0240	102	Rockets, line throwing
UN 0241	102	Explosives, blasting, Type E
UN 0242	102	Charges, propelling, for cannon
UN 0243	102	Ammunition, incendiary, white phosphorus
UN 0244	102	Ammunition, incendiary, white phosphorus
UN 0245	102	Ammunition, smoke, white phosphorus
UN 0246	102	Ammunition, smoke, white phosphorus
UN 0247	102	Ammunition, incendiary
UN 0248	102	Contrivances, water-activated
UN 0249	102	Contrivances, water-activated
UN 0250	102	Rocket motors
UN 0254	102	Ammunition, illuminating
UN 0255	102	Blasting caps, electric
UN 0257	102	Fuzes, detonating
UN 0266	102	Octolite
UN 0267	102	Blasting caps, non-electric
UN 0268	102	Boosters, with detonator

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 0268	102	Gaines, with detonator
UN 0271	102	Charges, propelling, for rocket motors
UN 0272	102	Charges, propelling, for rocket motors
UN 0273	102	Charges, propelling, for rocket motors
UN 0274	102	Charges, propelling, for rocket motors
UN 0275	102	Cartridges, power device
UN 0276	102	Cartridges, power device
UN 0277	102	Cartridges, oil well
UN 0278	102	Cartridges, oil well
UN 0279	102	Charges, propelling, for cannon
UN 0280	102	Rocket motors
UN 0281	102	Rocket motors
UN 0282	102	Nitroguanidine
UN 0283	102	Boosters
UN 0283	102	Gaines, without detonator
UN 0284	102	Grenades
UN 0285	102	Grenades
UN 0286	102	Warheads, rocket
UN 0287	102	Warheads, rocket
UN 0288	102	Charges, shaped, flexible, linear
UN 0289	102	Cord, detonating
UN 0290	102	Cord, detonating
UN 0291	102	Bombs
UN 0292	102	Grenades
UN 0293	102	Grenades
UN 0294	102	Mines
UN 0295	102	Rockets
UN 0296	102	Sounding devices, explosive
UN 0297	102	Ammunition, illuminating
UN 0299	102	Bombs, photo-flash
UN 0300	102	Ammunition, incendiary
UN 0301	102	Ammunition, tear-producing
UN 0303	102	Ammunition, smoke
UN 0305	102	Photo-flash powder
UN 0306	102	Tracers for ammunition
UN 0312	102	Cartridges, signal
UN 0313	102	Signals, smoke
UN 0314	102	Igniters
UN 0315	102	Igniters
UN 0316	102	Fuzes, igniting
UN 0317	102	Fuzes, igniting
UN 0318	102	Grenades, practice
UN 0319	102	Primers, tubular
UN 0320	102	Primers, tubular
UN 0321	102	Cartridges for weapons
UN 0322	102	Rocket motors
UN 0323	102	Cartridges, power device
UN 0324	102	Projectiles
UN 0325	102	Igniters
UN 0326	102	Cartridges for weapons, blank
UN 0327	102	Cartridges for weapons, blank
UN 0328	102	Cartridges for weapons, with inert projectile
UN 0329	102	Torpedoes
UN 0330	102	Torpedoes
UN 0331	102	Explosives, blasting, Type B
UN 0332	102	Explosives, blasting, Type E
UN 0333	102	Fireworks, Type A
UN 0334	102	Fireworks, Type B
UN 0335	102	Fireworks, Type C
UN 0336	102	Fireworks, Type D
UN 0337	102	Fireworks, Type D
UN 0338	102	Cartridges for weapons, blank
UN 0339	102	Cartridges for weapons, with inert projectile
UN 0340	102	Nitrocellulose with
UN 0341	102	Nitrocellulose with
UN 0342	102	Nitrocellulose with
UN 0343	102	Nitrocellulose with
UN 0344	102	Projectiles
UN 0345	102	Projectiles
UN 0346	102	Projectiles
UN 0347	102	Projectiles
UN 0348	102	Cartridges for weapons
UN 0349	102	Articles, explosive, n.o.s.
UN 0350	102	Articles, explosive, n.o.s.
UN 0351	102	Articles, explosive, n.o.s.
UN 0352	102	Articles, explosive, n.o.s.
UN 0353	102	Articles, explosive, n.o.s.
UN 0354	102	Articles, explosive, n.o.s.
UN 0355	102	Articles, explosive, n.o.s.

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 0356	102	Articles, explosive, n.o.s.
UN 0357	102	Substances, explosive, n.o.s.
UN 0358	102	Substances, explosive, n.o.s.
UN 0359	102	Substances, explosive, n.o.s.
UN 0360	102	Blasting cap assemblies, non-electric
UN 0361	102	Blasting cap assemblies, non electric
UN 0362	102	Ammunition, practice
UN 0363	102	Ammunition, proof
UN 0364	102	Detonators for ammunition
UN 0365	102	Detonators for ammunition
UN 0366	102	Detonators for ammunition
UN 0367	102	Fuzes, detonating
UN 0368	102	Fuzes, igniting
UN 0369	102	Warheads, rocket
UN 0370	102	Warheads, rocket
UN 0371	102	Warheads, rocket
UN 0372	102	Grenades, practice
UN 0373	102	Signal devices, hand
UN 0374	102	Sounding devices, explosive
UN 0375	102	Sounding devices, explosive
UN 0376	102	Primers, tubular
UN 0377	102	Primers, cap type
UN 0378	102	Primers, cap type
UN 0379	102	Cases, cartridge, empty, with primer
UN 0380	102	Articles, pyrophoric
UN 0381	102	Cartridges, power device
UN 0382	102	Components, explosive train, n.o.s.
UN 0383	102	Components, explosive train, n.o.s.
UN 0384	102	Components, explosive train, n.o.s.
UN 0385	102	5-Nitrobenzotriazol
UN 0386	102	Trinitrobenzenesulfonic acid
UN 0387	102	Trinitrofluorenone
UN 0388	102	Trinitrotoluene
UN 0389	102	Trinitrotoluene
UN 0390	102	Tritonal
UN 0391	102	Cyclotrimethylenetrinitramine mixed with cyclotetramethylenetetranitramine
UN 0392	102	Hexanitrostilbene
UN 0393	102	Hexatonal, cast
UN 0394	102	Trinitroresorcinol
UN 1001	101	Acetylene
UN 1002	102	Air
UN 1002	101	Air, compressed
UN 1003	102	Air
UN 1005	102	Ammonia
UN 1005	101	Ammonia, anhydrous
UN 1006	101	Argon
UN 1008	101	Boron trifluoride
UN 1009	102	Bromotrifluoromethane
UN 1009	101	Monobromotrifluoromethane
UN 1010	102	Butadiene
UN 1010	101	Butadiene, inhibited
UN 1011	102	Butane
UN 1012	102	Butylene
UN 1013	102	Carbon dioxide
UN 1014	102	Carbon dioxide and oxygen
UN 1014	101	Carbon dioxide-oxygen mixture
UN 1015	102	Carbon dioxide and nitrous oxide
UN 1015	101	Carbon dioxide-nitrous oxide mixture
UN 1016	101	Carbon monoxide
UN 1017	101	Chlorine
UN 1018	102	Chlorodifluoromethane
UN 1018	101	Monochlorodifluoromethane
UN 1020	102	Chloropentafluoroethane
UN 1020	101	Monochloropentafluoroethane
UN 1021	102	Chlorotetrafluoroethane
UN 1021	101	Monochlorotetrafluoroethane
UN 1022	102	Chlorotrifluoromethane
UN 1022	101	Monochlorotrifluoromethane
UN 1023	102	Coal gas
UN 1026	102	Cyanogen
UN 1026	101	Cyanogen gas
UN 1027	101	Cyclopropane
UN 1028	101	Dichlorodifluoromethane
UN 1029	102	Dichloromonofluoromethane
UN 1030	102	1,1-Difluoroethane
UN 1030	101	Difluoroethane
UN 1031	102	Difluoromonochloroethane
UN 1032	102	Dimethylamine
UN 1032	101	Dimethylamine, anhydrous
UN 1033	101	Dimethyl ether
UN 1035	101	Ethane

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1036	102	Ethylamine
UN 1036	101	Monoethylamine
UN 1037	101	Ethyl chloride
UN 1038	102	Ethylene
UN 1039	101	Ethyl methyl ether
UN 1040	101	Ethylene oxide
UN 1041	102	Ethylene oxide and carbon dioxide
NA 1043	101	Crude nitrogen fertilizer solution
UN 1043	101	Fertilizer ammoniating solution
NA 1043	101	Nitrogen fertilizer solution
UN 1044	101	Fire extinguisher
UN 1044	102	Fire extinguishers
UN 1045	101	Fluorine
UN 1046	101	Helium
UN 1048	101	Hydrogen bromide
UN 1049	101	Hydrogen
UN 1050	101	Hydrogen chloride
NA 1051	101	Hydrocyanic acid, liquefied
UN 1051	102	Hydrogen cyanide
UN 1052	102	Hydrogen fluoride
UN 1053	101	Hydrogen sulfide
UN 1053	102	Hydrogen sulphide
UN 1055	102	Isobutylene
UN 1056	102	Krypton
UN 1057	101	Cigarette lighter
UN 1057	102	Lighters
UN 1058	102	Liquefied non-flammable gases charged with nitrogen, carbon dioxide or air
UN 1060	102	Methyl acetylene
UN 1060	101	Methylacetylene-propadiene; stabilized
UN 1061	102	Methylamine
UN 1061	101	Methylamine, anhydrous
UN 1062	102	Methyl bromide
UN 1063	101	Methyl chloride
UN 1064	101	Methyl mercaptan
UN 1064	102	Methylmercaptan
UN 1065	101	Neon
UN 1066	101	Nitrogen
UN 1067	102	Nitrogen dioxide
UN 1067	101	Nitrogen dioxide, liquid
NA 1067	101	Nitrogen peroxide, liquid
NA 1067	101	Nitrogen tetroxide, liquid
UN 1069	101	Nitrosyl chloride
UN 1070	101	Nitrous oxide
UN 1071	102	Oil gas
NA 1072	101	Oxygen
UN 1073	102	Oxygen
NA 1073	101	Oxygen, pressurized liquid
UN 1075	101	Liquefied petroleum gas
UN 1075	102	Petroleum gases
UN 1076	101	Phosgene
UN 1077	102	Propylene
UN 1078	102	Refrigerant gases, n.o.s.
UN 1079	101	Sulfur dioxide
UN 1079	102	Sulphur dioxide
UN 1080	101	Sulfur hexafluoride
UN 1080	102	Sulphur hexafluoride
UN 1081	102	Tetrafluoroethylene
UN 1081	101	Tetrafluoroethylene, inhibited
UN 1082	101	Trifluorochlorethylene
UN 1082	102	Trifluorochloroethylene
UN 1083	102	Trimethylamine
UN 1083	101	Trimethylamine, anhydrous
UN 1085	102	Vinyl bromide
UN 1086	101	Vinyl chloride
UN 1087	101	Vinyl methyl ether
UN 1088	101	Acetal
UN 1089	101	Acetaldehyde
UN 1090	101	Acetone
UN 1091	101	Acetone oil
UN 1091	102	Acetone oils
UN 1092	102	Acrolein
UN 1092	101	Acrolein, inhibited
UN 1093	101	Acrylonitrile
UN 1095	102	Alcohol
UN 1098	102	Alcohol
UN 1098	101	Allyl alcohol
UN 1099	101	Allyl bromide
UN 1100	101	Allyl chloride
UN 1101	102	Diethylaluminium chloride
UN 1102	102	Aluminium triethyl
UN 1103	102	Aluminium trimethyl
UN 1104	101	Amyl acetate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1104	102	Amyl acetates
UN 1105	102	Amyl alcohols
UN 1106	101	Amylamine
UN 1107	101	Amyl chloride
UN 1108	101	Amylene
UN 1108	102	n-Amylene
UN 1109	101	Amyl formate
UN 1109	102	Amyl formates
UN 1110	102	Amyl methyl ketone
UN 1110	101	Methyl amyl ketone
UN 1111	101	Amyl mercaptan
UN 1112	102	Amyl nitrate
UN 1113	101	Amyl nitrite
UN 1114	101	Benzene
UN 1115	101	Benzine
UN 1118	102	Brake fluid, hydraulic
UN 1120	102	Butanol
NA 1120	101	Butyl alcohol
UN 1121	102	sec-Butanol
UN 1122	102	tert-Butanol
UN 1123	101	Butyl acetate
UN 1123	102	n-Butyl acetate
UN 1124	102	sec-Butyl acetate
UN 1125	101	Butylamine
UN 1125	102	n-Butylamine
UN 1126	101	Butyl bromide
UN 1126	102	n-Butyl bromide
UN 1127	101	Butyl chloride
UN 1127	102	n-Butyl chloride
UN 1128	101	Butyl formate
UN 1128	102	n-Butyl formate
UN 1129	101	Butyraldehyde
UN 1130	101	Camphor oil
UN 1131	101	Carbon bisulfide, *or* Carbon disulfide
UN 1131	102	Carbon disulphide
UN 1132	102	Carbon remover
UN 1132	101	Carbon remover, liquid
UN 1133	102	Cement, adhesive
NA 1133	101	Cement, container, linoleum, tile, *or* wallboard, liquid
NA 1133	101	Cement, leather
NA 1133	101	Cement, liquid, n.o.s.
NA 1133	101	Cement, pyroxylin
NA 1133	101	Cement, roofing, liquid
NA 1133	101	Cement, rubber
UN 1134	101	Chlorobenzene
UN 1135	102	2-Chloroethanol
UN 1135	101	Ethylene chlorohydrin
UN 1136	101	Coal tar distillate
NA 1136	101	Coal tar light oil
NA 1136	101	Coal tar oil
UN 1137	101	Coal tar distillate
NA 1137	101	Coal tar light oil
NA 1137	101	Coal tar oil
UN 1139	101	Coating solution
NA 1142	101	Antifreeze compound, liquid
NA 1142	101	Antifreeze preparation, liquid
NA 1142	101	Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid
NA 1142	101	Compound, polishing, liquid
NA 1142	101	Compound, vulcanizing, liquid
NA 1142	101	Dressing, leather
UN 1142	102	Flammable liquid preparation, n.o.s.
NA 1142	101	Leather bleach *or* dressing
NA 1142	101	Polish, metal, stove, furniture *or* wood, liquid
NA 1142	101	Rust preventive coating
UN 1143	101	Crotonaldehyde
UN 1144	101	Crotonylene
UN 1145	101	Cyclohexane
UN 1146	101	Cyclopentane
UN 1147	101	Decahydronaphthalene
UN 1148	102	Diacetone alchohol
UN 1148	101	Diacetone alcohol
UN 1149	101	Butyl ether
UN 1149	102	Dibutyl ethers
UN 1150	101	Dichloroethylene
UN 1152	101	Dichloropentane
UN 1152	102	Dichloropentanes
UN 1153	102	1,2-Diethoxyethane
UN 1153	101	Ethylene glycol diethyl ether
UN 1154	101	Diethylamine
UN 1155	102	Diethyl ether
UN 1155	101	Ethyl ether

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1156	101	Diethyl ketone
UN 1157	101	Diisobutyl ketone
UN 1158	101	Diisopropylamine
UN 1159	101	Diisopropyl ether
UN 1160	102	Dimethylamine
UN 1160	101	Dimethylamine, aqueous solution
UN 1161	101	Dimethyl carbonate
UN 1162	101	Dimethyldichlorosilane
UN 1163	102	Dimethylhydrazine
UN 1163	101	Dimethylhydrazine, unsymmetrical
UN 1164	101	Dimethyl sulfide
UN 1164	102	Dimethyl sulphide
UN 1165	101	Dioxane
UN 1166	101	Dioxolane
UN 1167	101	Divinyl ether
UN 1168	102	Driers
UN 1168	101	Paint drier, liquid
UN 1169	102	Extracts
UN 1170	101	Alcoholic beverage
NA 1170	101	Cologne spirits
UN 1170	102	Ethanol
UN 1170	101	Ethyl alcohol
UN 1171	102	2-Ethoxyethanol
UN 1171	101	Ethylene glycol monoethyl ether
UN 1172	102	2-Ethoxyethyl acetate
UN 1172	101	Ethylene glycol monoethyl ether acetate
UN 1173	101	Ethyl acetate
UN 1175	101	Ethyl benzene
UN 1175	102	Ethylbenzene
UN 1176	101	Ethyl borate
UN 1177	102	Ethylbutyl acetate
UN 1177	101	Ethyl butyl acetate
UN 1178	102	2-Ethylbutyraldehyde
UN 1178	101	Ethyl butyraldehyde
UN 1179	101	Ethyl butyl ether
UN 1180	101	Ethyl butyrate
UN 1181	101	Ethyl chloroacetate
UN 1182	101	Ethyl chloroformate
UN 1183	101	Ethyl dichlorosilane
UN 1183	102	Ethyldichlorosilane
UN 1184	101	Ethylene dichloride
UN 1185	102	Ethylenimine
UN 1185	101	Ethylene imine, inhibited
UN 1188	101	Ethylene glycol monomethyl ether
UN 1189	101	Ethylene glycol monomethyl ether acetate
UN 1190	101	Ethyl formate
UN 1191	102	Ethyl hexaldehyde
UN 1191	101	Ethylhexaldehyde
UN 1192	101	Ethyl lactate
UN 1193	101	Ethyl methyl ketone
UN 1193	101	Methyl ethyl ketone
UN 1194	102	Ethyl nitrite
UN 1194	101	Ethyl nitrite (nitrous ether)
UN 1195	101	Ethyl propionate
UN 1196	101	Ethyl trichlorosilane
UN 1196	102	Ethyltrichlorosilane
UN 1197	101	Extract, liquid, flavoring
UN 1197	102	Extracts
UN 1198	102	Formaldehyde
UN 1198	101	Formaldehyde solution
UN 1199	101	Furfural
UN 1201	101	Fusel oil
UN 1202	102	Gas oil
UN 1203	102	Gasoline
NA 1203	101	Motor fuel, n.o.s.
UN 1204	102	Glyceryl trinitrate
NA 1204	101	Spirits of nitroglycerin
NA 1204	101	Spirits of nitroglycerin, not exceeding 1% nitroglycerin by weight
UN 1205	102	Gutta percha
UN 1206	101	Heptane
UN 1207	101	Hexaldehyde
UN 1208	101	Hexane
UN 1208	101	Neohexane
UN 1210	101	Ink
UN 1210	102	Ink, printers
UN 1212	102	Isobutanol
UN 1213	101	Isobutyl acetate
UN 1214	101	Isobutylamine
UN 1216	101	Isooctene
UN 1218	101	Isoprene
UN 1219	101	Isopropanol
UN 1220	101	Isopropyl acetate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1221	101	Isopropylamine
UN 1222	101	Isopropyl nitrate
UN 1223	101	Kerosene
UN 1224	102	Ketones
UN 1226	101	Cigarette lighter
UN 1226	101	Lighter fluid
UN 1226	102	Lighter fuels
UN 1226	102	Lighters
NA 1228	101	Mercaptan mixture, aliphatic
UN 1228	102	Mercaptans *and* mercaptan mixtures
UN 1229	101	Mesityl oxide
NA 1230	101	Columbian spirits
UN 1230	102	Methanol
UN 1230	101	Methyl alcohol
UN 1231	101	Methyl acetate
UN 1232	101	Methyl acetone
UN 1233	101	Methylamyl acetate
UN 1234	101	Methylal
UN 1235	102	Methylamine
UN 1235	101	Methylamine, aqueous solution
UN 1237	101	Methyl butyrate
UN 1238	101	Methyl chloroformate
UN 1239	102	Methylchloromethyl ether
UN 1239	101	Methylchloromethyl ether, anhydrous
UN 1242	101	Methyl dichlorosilane
UN 1242	102	Methyldichlorosilane
UN 1243	101	Methyl formate
UN 1244	101	Methylhydrazine
UN 1245	102	Methyl isobutyl ketone
UN 1246	102	Methyl isopropenyl ketone
UN 1246	101	Methyl isopropenyl ketone, inhibited
UN 1247	102	Methyl methacrylate
UN 1247	101	Methyl methacrylate monomer, inhibited
NA 1247	101	Methyl methacrylate monomer, uninhibited
UN 1248	101	Methyl propionate
UN 1249	101	Methyl propyl ketone
UN 1250	101	Methyltrichlorosilane
UN 1251	102	Methyl vinyl ketone
UN 1251	101	Methyl vinyl ketone, inhibited
UN 1255	102	Naphtha, petroleum
UN 1255	101	Petroleum naphtha
UN 1256	101	Naphtha, solvent
UN 1257	102	Casinghead gasoline
NA 1257	101	Gasoline
UN 1259	101	Nickel carbonyl
UN 1261	101	Nitromethane
UN 1262	101	Isooctane
UN 1262	101	Octane
NA 1263	101	Compound, enamel
NA 1263	101	Lacquer base *or* Lacquer chips, plastic
UN 1263	101	Paint, Enamel, Lacquer, Stain, Shellac, *or* Varnish; Aluminum, Bronze, Gold, Wood filler, liquid *or* Lacquer base, liquid
UN 1263	102	Paint, enamel, lacquer, stain, shellac, varnish, polish, filler (liquid), lacquer base *and* thinner
UN 1264	101	Paraldehyde
UN 1265	101	Isopentane
UN 1265	101	Pentane
UN 1266	102	Perfumery products
UN 1267	102	Petroleum crude oil
NA 1268	101	Naphtha distillate
UN 1268	101	Petroleum distillate
UN 1268	102	Petroleum distillates, n.o.s.
NA 1268	101	Road oil
NA 1270	101	Oil
UN 1270	102	Petroleum oil
UN 1271	101	Petroleum ether
UN 1271	102	Petroleum spirit
UN 1272	101	Pine oil
UN 1274	102	Propanol
UN 1274	101	Propyl alcohol
UN 1275	101	Propionaldehyde
UN 1276	102	n-Propyl acetate
UN 1276	101	Propyl acetate
UN 1277	102	Monopropylamine
UN 1277	101	Propylamine
UN 1278	101	Propyl chloride
UN 1279	101	Propylene dichloride
UN 1280	101	Propylene oxide
UN 1281	101	Propyl formate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1281	102	Propyl formates
UN 1282	101	Pyridine
UN 1286	102	Rosin oil
UN 1287	102	Rubber solution
UN 1288	102	Shale oil
UN 1289	102	Sodium methylate
NA 1289	101	Sodium methylate, alcohol mixture
UN 1292	101	Ethyl silicate
UN 1292	102	Tetraethyl silicate
UN 1293	102	Tinctures
UN 1294	101	Toluene
UN 1295	101	Trichlorosilane
UN 1296	101	Triethylamine
UN 1297	102	Trimethylamine
UN 1297	101	Trimethylamine, aqueous solution
UN 1298	101	Trimethylchlorosilane
UN 1299	101	Turpentine
UN 1300	101	Turpentine substitute
UN 1301	101	Vinyl acetate
UN 1302	102	Vinyl ethyl ether
UN 1302	101	Vinyl ethyl ether, inhibited
UN 1303	101	Vinylidene chloride, inhibited
UN 1304	101	Vinyl isobutyl ether
UN 1305	101	Vinyl trichlorosilane
UN 1307	101	Xylene
UN 1307	102	Xylenes
UN 1308	102	Zirconium
UN 1308	101	Zirconium, metal, liquid, suspensions
UN 1309	102	Aluminium
UN 1310	102	Ammonium picrate
UN 1310	101	Ammonium picrate, wet
UN 1312	102	Borneol
UN 1313	101	Calcium resinate
UN 1314	102	Calcium resinate
UN 1314	101	Calcium resinate, fused
UN 1318	102	Cobalt resinate
UN 1318	101	Cobalt resinate, precipitated
UN 1320	102	Dinitrophenol
UN 1321	102	Dinitrophenolates
UN 1322	102	Dinitroresorcinols
UN 1323	102	Ferrocerium
NA 1324	101	Film
UN 1324	102	Film, motion picture
NA 1325	101	Antimony sulfide, solid
NA 1325	101	Burnt cotton, not repicked
NA 1325	101	Cosmetics, n.o.s.
NA 1325	101	Drugs, n.o.s.
UN 1325	101	Flammable solid, n.o.s.
UN 1325	102	Flammable solids, n.o.s.
NA 1325	101	Fusee
NA 1325	101	Garbage tankage
NA 1325	101	N-Methyl-N'-nitro-N-nitrosoguanidine
NA 1325	101	Paper stock, wet
NA 1325	101	Rags, wet
NA 1325	101	Rough ammoniate tankage
NA 1325	101	Self-lighting cigarette
NA 1325	101	Smokeless powder for small arms
NA 1325	101	Tankage fertilizer
NA 1325	101	Tankage, rough ammoniate
NA 1325	101	Waste paper, wet
(UN 1325).	102	Zirconium
UN 1326	102	Hafnium metal powder, wet
UN 1326	101	Hafnium metal, wet
UN 1327	102	Bhusa
UN 1327	101	Hay
UN 1327	101	Hay or straw
UN 1327	102	Straw
UN 1328	102	Hexamine
UN 1330	102	Manganese resinate
UN 1331	102	Matches
UN 1331	101	Matches, strike anywhere
UN 1332	102	Metaldehyde
UN 1333	102	Mischmetal
UN 1334	102	Naphthalene
UN 1334	101	Naphthalene *or* Naphthalin
UN 1336	102	Nitroguanidine
UN 1336	101	Nitroguanidine, wet with not less than 20% water
UN 1337	102	Nitrostarch
UN 1337	101	Nitrostarch, wet with not less than 20% water
UN 1338	102	Phosphorus
UN 1338	101	Phosphorus, amorphous, red
UN 1339	101	Phosphorus heptasulfide
UN 1339	102	Phosphorus heptasulphide

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1340 ...	101	Phosphorus pentasulfide
UN 1340 ...	102	Phosphorus pentasulphide
UN 1341 ...	101	Phosphorus sesquisulfide
UN 1341 ...	102	Phosphorus sesquisulphide
UN 1343 ...	101	Phosphorus trisulfide
UN 1343 ...	102	Phosphorus trisulphide
UN 1344 ...	102	Picric acid
NA 1344 ...	101	Picric acid, wet, with not less than 10% water
UN 1345 ...	102	Rubber scrap
NA 1345 ...	101	Rubber scrap *or* Rubber buffings
NA 1345 ...	101	Rubber shoddy *or* Rubber, regenerated *or* Rubber, reclaimed
UN 1346 ...	102	Silicon powder
UN 1348 ...	102	Sodium dinitro-o-cresolate
UN 1349 ...	102	Sodium picramate
UN 1349 ...	101	Sodium picramate, wet
UN 1350 ...	101	Sulfur, solid
UN 1350 ...	102	Sulphur
UN 1352 ...	102	Titanium metal powder, wet
NA 1352 ...	101	Titanium metal powder, wet with 20% or more water
UN 1353 ...	102	Toe puffs
UN 1354 ...	102	Trinitrobenzene
UN 1354 ...	101	Trinitrobenzene, wet
UN 1355 ...	102	Trinitrobenzoic acid
UN 1355 ...	101	Trinitrobenzoic acid, wet
UN 1356 ...	102	Trinitrotoluene
UN 1356 ...	101	Trinitrotoluene, wet
UN 1357 ...	102	Urea nitrate
NA 1357 ...	101	Urea nitrate, wet
UN 1358 ...	102	Zirconium metal powder, wet
UN 1358 ...	101	Zirconium metal, wet
UN 1359 ...	102	Bags
UN 1359 ...	101	Bags, sodium nitrate, empty and unwashed
UN 1360 ...	101	Calcium phosphide
UN 1361 ...	102	Carbon, non-activated
NA 1361 ...	101	Charcoal briquettes *or* briquets
NA 1361 ...	101	Charcoal screenings, made from 'pinon' wood
NA 1361 ...	101	Charcoal, shell
NA 1361 ...	101	Charcoal, wood, ground, crushed, granulated, *or* pulverized
NA 1361 ...	101	Charcoal, wood, lump
NA 1361 ...	101	Charcoal wood screenings, other than 'pinon' wood screenings
NA 1361 ...	101	Coal, ground bituminous, sea coal, coal facings
UN 1362 ...	102	Carbon, activated
UN 1362 ...	101	Charcoal, activated
UN 1363 ...	101	Copra
UN 1364 ...	102	Cotton waste
UN 1364 ...	101	Cotton waste, oily
UN 1365 ...	102	Cotton
UN 1366 ...	102	Diethylzinc
UN 1367 ...	102	Diethylmagnesium
UN 1368 ...	102	Dimethylmagnesium
UN 1369 ...	102	Dimethyl-p-nitrosoaniline
UN 1369 ...	102	p-Nitrosodimethylaniline
UN 1370 ...	102	Dimethylzinc
UN 1371 ...	102	Driers
NA 1372 ...	101	Burnt fiber
NA 1372 ...	101	Fibers
NA 1372 ...	101	Fibers, burnt
UN 1372 ...	102	Fibres
NA 1372 ...	101	Hair, wet
UN 1373 ...	102	Fabric
NA 1373 ...	101	Fibers *or* fabric, containing not more than 5% animal *or* vegetable oil
UN 1373 ...	102	Fibres
UN 1374 ...	102	Fishmeal *or* fishscrap
NA 1374 ...	101	Fish meal *or* fish scrap containing less than 6% or more than 12% water
UN 1375 ...	102	Pyrophoric fuel, n.o.s.
UN 1376 ...	101	Iron mass *or* sponge, spent
UN 1376 ...	102	Iron oxide
UN 1378 ...	102	Nickel catalyst
UN 1378 ...	101	Nickel catalyst, wet
UN 1379 ...	102	Paper
UN 1380 ...	101	Pentaborane
UN 1381 ...	102	Phosphorus
UN 1381 ...	101	Phosphorus, white *or* yellow, dry
UN 1381 ...	101	Phosphorus, white *or* yellow, in water

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1382 ...	102	Alkaline earth metal amalgams, n.o.s.
UN 1382 ...	101	Potassium sulfide
UN 1382 ...	102	Potassium sulphide
NA 1383 ...	101	Iron mass *or* sponge
UN 1383 ...	102	Pyrophoric alloys
UN 1383 ...	102	Pyrophoric metals
UN 1384 ...	102	Sodium dithionite
UN 1384 ...	101	Sodium hydrosulfite
UN 1385 ...	101	Sodium sulfide, anhydrous
UN 1385 ...	102	Sodium sulphide
UN 1386 ...	102	Seed cake
UN 1387 ...	101	Waste wool, wet
UN 1387 ...	102	Wool waste
UN 1389 ...	102	Alkali metal amalgams, n.o.s.
UN 1390 ...	102	Alkali metal amides, n.o.s.
UN 1391 ...	102	Alkali metal dispersions, n.o.s.
UN 1393 ...	102	Alloys of alkaline earth metals
UN 1394 ...	102	Aluminium carbide
UN 1395 ...	102	Aluminium ferrosilicon
UN 1396 ...	102	Aluminium
UN 1396 ...	101	Aluminum, metallic, powder
UN 1397 ...	102	Aluminium phosphide
UN 1397 ...	101	Aluminum phosphide
UN 1398 ...	102	Aluminium silicon
UN 1399 ...	102	Barium
UN 1400 ...	102	Barium
UN 1401 ...	102	Calcium
NA 1401 ...	101	Calcium, metal
NA 1401 ...	101	Calcium, metal, crystalline
UN 1402 ...	101	Calcium carbide
UN 1403 ...	102	Calcium cyanamide
UN 1403 ...	101	Calcium cyanamide, not hydrated
UN 1404 ...	102	Calcium hydride
UN 1405 ...	102	Calcium silicide
UN 1406 ...	102	Calcium silicon
UN 1407 ...	102	Caesium.
UN 1407 ...	101	Cesium metal
UN 1408 ...	101	Ferrosilicon
UN 1409 ...	102	Hydrides
UN 1410 ...	102	Lithium aluminium hydride
UN 1410 ...	101	Lithium aluminum hydride
UN 1411 ...	102	Lithium aluminium hydride
UN 1411 ...	101	Lithium aluminum hydride, ethereal
UN 1412 ...	102	Lithium amide
UN 1412 ...	101	Lithium amide, powdered
UN 1413 ...	101	Lithium borohydride
UN 1414 ...	101	Lithium hydride
UN 1415 ...	102	Lithium
UN 1415 ...	101	Lithium metal
NA 1415 ...	101	Lithium metal, in cartridges
UN 1417 ...	101	Lithium silicon
UN 1418 ...	102	Magnesium
UN 1418 ...	102	Magnesium alloys
UN 1419 ...	102	Magnesium aluminium phosphide
UN 1419 ...	101	Magnesium aluminum phosphide
UN 1420 ...	102	Potassium, metal alloys
UN 1420 ...	101	Potassium, metal liquid alloy
UN 1421 ...	102	Alkali metals
NA 1421 ...	101	Sodium, metal liquid alloy
UN 1422 ...	102	Potassium-sodium
UN 1422 ...	101	Sodium potassium alloy (liquid)
UN 1422 ...	101	Sodium potassium alloy (solid)
UN 1423 ...	102	Rubidium
UN 1423 ...	101	Rubidium metal
NA 1423 ...	101	Rubidium metal, in cartridges
UN 1424 ...	102	Sodium amalgam
UN 1425 ...	101	Sodium amide
UN 1426 ...	102	Sodium borohydride
UN 1427 ...	101	Sodium hydride
UN 1428 ...	102	Sodium
UN 1428 ...	101	Sodium, metal *or* metallic
UN 1429 ...	102	Sodium
UN 1429 ...	101	Sodium, metal dispersion in organic solvent
UN 1431 ...	102	Sodium methylate
UN 1431 ...	101	Sodium methylate, dry
UN 1432 ...	101	Sodium phosphide
UN 1433 ...	101	Stannic phosphide
UN 1433 ...	102	Stannic phosphides
UN 1434 ...	102	Strontium
UN 1435 ...	102	Zinc ashes
UN 1436 ...	102	Zinc
UN 1437 ...	101	Zirconium hydride
UN 1438 ...	102	Aluminium nitrate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1438 ...	101	Aluminum nitrate
UN 1439 ...	101	Ammonium dichromate
UN 1442 ...	101	Ammonium perchlorate
UN 1444 ...	102	Ammonium persulphate
UN 1445 ...	101	Barium chlorate
NA 1445 ...	101	Barium chlorate, wet
UN 1446 ...	101	Barium nitrate
UN 1447 ...	101	Barium perchlorate
UN 1448 ...	101	Barium permanganate
UN 1449 ...	102	Barium peroxide
UN 1449 ...	101	Barium peroxide
UN 1450 ...	102	Bromates
UN 1451 ...	102	Caesium nitrate
UN 1452 ...	101	Calcium chlorate
UN 1453 ...	101	Calcium chlorite
UN 1454 ...	101	Calcium nitrate
UN 1455 ...	102	Calcium perchlorate
UN 1456 ...	101	Calcium permanganate
UN 1457 ...	101	Calcium peroxide
UN 1458 ...	102	Borate and chlorate
UN 1458 ...	101	Chlorate and borate mixture
UN 1459 ...	102	Chlorate and magnesium chloride
UN 1459 ...	101	Chlorate and magnesium chloride mixture
UN 1461 ...	101	Chlorate, n.o.s.
NA 1461 ...	101	Chlorate, n.o.s., wet
UN 1461 ...	102	Chlorates
UN 1462 ...	102	Chlorites
NA 1463 ...	101	Chromic acid mixture, dry
NA 1463 ...	101	Chromic acid, solid
UN 1463 ...	102	Chromium trioxide
UN 1464 ...	102	Dichromates
UN 1465 ...	102	Didymium nitrate
UN 1466 ...	101	Ferric nitrate
UN 1467 ...	101	Guanidine nitrate
UN 1469 ...	101	Lead nitrate
UN 1470 ...	102	Lead perchlorate
UN 1471 ...	102	Lithium hypochlorite
UN 1471 ...	101	Lithium hypochlorite compound, dry
UN 1472 ...	101	Lithium peroxide
UN 1473 ...	102	Magnesium bromate
UN 1474 ...	101	Magnesium nitrate
UN 1475 ...	101	Magnesium perchlorate
UN 1476 ...	102	Magnesium peroxide
UN 1476 ...	101	Magnesium peroxide, solid
NA 1477 ...	101	Ammonium sulfate nitrate
NA 1477 ...	101	Nitrate, n.o.s.
UN 1477 ...	102	Nitrates
UN 1478 ...	102	Sodium nitrate and potash
NA 1479 ...	101	Compound, tree *or* weed killing, solid
NA 1479 ...	101	Cosmetics, n.o.s.
NA 1479 ...	101	Cupric nitrate
NA 1479 ...	101	Drugs, n.o.s.
NA 1479 ...	101	Manganese dioxide
UN 1479 ...	101	Oxidizer, n.o.s. *or* Oxidizing material, n.o.s.
UN 1479 ...	102	Oxidizing substances, n.o.s.
NA 1479 ...	101	Potassium dichromate
NA 1479 ...	101	Sodium dichromate
UN 1480 ...	102	Perborates
NA 1481 ...	101	Perchlorate, n.o.s.
UN 1481 ...	102	Perchlorates
NA 1482 ...	101	Permanganate, n.o.s.
UN 1482 ...	102	Permanganates
UN 1483 ...	102	Peroxides
UN 1484 ...	101	Potassium bromate
UN 1485 ...	101	Potassium chlorate
UN 1486 ...	101	Potassium nitrate
UN 1487 ...	102	Potassium nitrate and sodium nitrite
UN 1487 ...	101	Sodium nitrite mixed
NA 1487 ...	101	Sodium nitrite mixture
UN 1488 ...	101	Potassium nitrite
UN 1489 ...	101	Potassium perchlorate
UN 1490 ...	101	Potassium permanganate
UN 1491 ...	101	Potassium peroxide
UN 1492 ...	102	Potassium persulphate
UN 1493 ...	101	Silver nitrate
UN 1494 ...	101	Sodium bromate
UN 1495 ...	101	Sodium chlorate
UN 1496 ...	101	Sodium chlorite
UN 1498 ...	101	Sodium nitrate
UN 1499 ...	102	Sodium nitrate and potassium nitrate
UN 1500 ...	101	Sodium nitrite
UN 1502 ...	101	Sodium perchlorate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1503	101	Sodium permanganate
UN 1504	101	Sodium peroxide
UN 1505	102	Sodium persulphate
UN 1506	101	Strontium chlorate
UN 1506	101	Strontium chlorate, wet
UN 1507	101	Strontium nitrate
UN 1508	102	Strontium perchlorate
UN 1509	101	Strontium peroxide
UN 1510	101	Tetranitromethane
UN 1511	102	Urea hydrogen peroxide
NA 1511	101	Urea peroxide
UN 1512	101	Zinc ammonium nitrite
UN 1513	101	Zinc chlorate
UN 1514	101	Zinc nitrate
UN 1515	101	Zinc permanganate
UN 1516	101	Zinc peroxide
UN 1517	102	Zirconium picramate
UN 1517	101	Zirconium picramate, wet
UN 1541	101	Acetone cyanohydrin
UN 1542	102	Aldrin
UN 1544	102	Alkaloids
UN 1545	102	Allyl isothiocyanate
UN 1546	102	Ammonium arsenate
UN 1546	101	Ammonium arsenate, solid
UN 1547	102	Aniline
UN 1547	101	Aniline oil, liquid
UN 1548	102	Aniline hydrochloride
UN 1549	102	Antimony compounds
NA 1549	101	Antimony tribromide, solid
NA 1549	101	Antimony tribromide solution
NA 1549	101	Antimony trifluoride, solid
NA 1549	101	Antimony trifluoride solution
UN 1550	102	Antimony lactate
UN 1550	101	Antimony lactate, solid
UN 1551	102	Antimony potassium tartrate
UN 1551	101	Antimony potassium tartrate, solid
UN 1553	102	Arsenic acid
UN 1553	101	Arsenic acid solution
UN 1554	102	Arsenic acid
UN 1554	101	Arsenic acid, solid
UN 1555	102	Arsenic bromide
UN 1555	101	Arsenic bromide, solid
UN 1556	101	Arsenical compound, liquid, n.o.s., *or* Arsenical mixture, liquid, n.o.s.
UN 1556	102	Arsenic compounds
NA 1556	101	Methyldichloroarsine
NA 1556	101	Phenyldichloroarsine
UN 1557	101	Arsenical compound, solid, n.o.s., *or* Arsenical mixture, solid, n.o.s.
NA 1557	101	Arsenical dip, liquid
UN 1557	102	Arsenic compounds
NA 1557	101	Arsenic iodide, solid
NA 1557	101	Arsenic sulfide, solid
NA 1557	101	Arsenic trisulfide
UN 1558	102	Arsenic, metallic
UN 1558	101	Arsenic, solid
UN 1559	102	Arsenic pentoxide
UN 1559	101	Arsenic pentoxide, solid
UN 1560	102	Arsenic trichloride
UN 1560	101	Arsenic trichloride, liquid
UN 1561	102	Arsenic trioxide
UN 1561	101	Arsenic trioxide, solid
UN 1562	101	Arsenical dust
UN 1564	102	Barium compounds, n.o.s.
UN 1565	102	Barium cyanide
UN 1565	101	Barium cyanide, solid
NA 1566	101	Beryllium chloride
UN 1566	101	Beryllium compound, n.o.s.
UN 1566	102	Beryllium compounds
NA 1566	101	Beryllium fluoride
UN 1567	102	Beryllium
UN 1568	102	Bordeaux arsenites
UN 1569	102	Bromoacetone
UN 1569	101	Bromoacetone, liquid
UN 1570	102	Brucine
UN 1570	101	Brucine, solid
UN 1571	102	Barium azide
UN 1571	101	Barium azide, wet
UN 1572	102	Cacodylic acid
UN 1573	102	Calcium arsenate
UN 1573	101	Calcium arsenate, solid
UN 1574	102	Calcium arsenate and arsenite
NA 1574	101	Calcium arsenite, solid
UN 1575	102	Calcium cyanide
UN 1575	101	Calcium cyanide, solid *or* Calcium cyanide mixture, solid

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1577	102	Chlorodinitrobenzene
UN 1577	101	Dinitrochlorobenzene
UN 1578	102	Chloronitrobenzenes
NA 1578	101	Nitrochlorobenzene, meta *or* para, solid
NA 1578	101	Nitrochlorobenzene, ortho, liquid
UN 1579	102	4-Chloro-o-toluidine hydrochloride
UN 1579	101	4-Chloro-o-toluidine hydrochloride
UN 1580	102	Chloropicrin
UN 1580	101	Chloropicrin, liquid
UN 1581	102	Chloropicrin and methyl bromide
NA 1581	101	Methyl bromide and more than 2% chloropicrin mixture, liquid
NA 1581	101	Methyl bromide, liquid
UN 1582	102	Chloropicrin and methyl chloride
UN 1582	101	Chloropicrin and methyl chloride mixture
NA 1583	101	Chloropicrin, absorbed
UN 1583	101	Chloropicrin mixture
UN 1583	102	Chloropicrin mixtures, n.o.s.
UN 1584	102	Cocculus
UN 1584	101	Cocculus, solid
UN 1585	102	Copper aceloarsenite
UN 1585	101	Copper aceloarsenite, solid
UN 1586	102	Copper arsenite
UN 1586	101	Copper arsenite, solid
UN 1587	101	Copper cyanide
UN 1588	101	Cyanide *or* cyanide mixture, dry
UN 1588	102	Cyanides
NA 1588	101	Cyanide solution, n.o.s.
UN 1589	101	Cyanogen chloride
UN 1590	102	Dichloroanilines
UN 1591	101	Dichlorobenzene, ortho, liquid
UN 1591	102	Dichlorobenzenes
UN 1592	101	Dichlorobenzene, para, solid
UN 1592	102	p-Dichlorobenzene
UN 1593	102	Dichloromethane
UN 1593	101	Dichloromethane *or* Methylene chloride
UN 1594	102	Diethyl sulphate
UN 1595	101	Dimethyl sulfate
UN 1595	102	Dimethyl sulphate
UN 1596	102	Dinitroanilines
UN 1597	102	Dinitrobenzenes
UN 1597	101	Dinitrobenzene, solid, *or* Dinitrobenzol, solid
UN 1597	101	Dinitrobenzene solution
UN 1598	102	4,6-Dinitro-o-cresol
UN 1599	102	Dinitrophenol
UN 1599	101	Dinitrophenol solution
UN 1600	101	Dinitrotoluene
UN 1600	102	Dinitrotoluenes
UN 1601	101	Disinfectant, liquid
UN 1601	102	Disinfectants
UN 1601	101	Disinfectant, solid
(UN 1601).	102	Germicides
UN 1602	102	Dye intermediates
UN 1603	102	Ethyl bromoacetate
UN 1604	101	Ethylenediamine
UN 1605	101	Ethylene dibromide
UN 1606	102	Ferric arsenate
UN 1606	101	Ferric arsenate, solid
UN 1607	102	Ferric arsenite
UN 1607	101	Ferric arsenite, solid
UN 1608	101	Ferrous arsenate
UN 1609	102	Fungicides
UN 1610	102	Halogenated irritating liquids, n.o.s.
UN 1611	102	Hexaethyl tetraphosphate
UN 1611	101	Hexaethyl tetraphosphate, liquid
UN 1612	102	Hexaethyl tetraphosphate
UN 1612	101	Hexaethyl tetraphosphate and compressed gas mixture
UN 1613	101	Hydrocyanic acid
UN 1613	101	Hydrocyanic acid solution, less than 5% hydrocyanic acid
UN 1614	102	Hydrogen cyanide
UN 1615	102	Insecticides, n.o.s.
UN 1616	101	Lead acetate
UN 1617	102	Lead arsenates
UN 1617	101	Lead arsenate, solid
UN 1618	102	Lead arsenites
UN 1618	101	Lead arsenite, solid
UN 1620	101	Lead cyanide
UN 1621	102	London purple
UN 1621	101	London purple, solid

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1622	102	Magnesium arsenate
UN 1622	101	Magnesium arsenate, solid
UN 1623	102	Mercuric arsenate
UN 1624	102	Mercuric chloride
UN 1624	101	Mercuric chloride, solid
UN 1625	101	Mercuric nitrate
UN 1626	102	Mercuric potassium cyanide
UN 1626	101	Mercuric potassium cyanide, solid
UN 1627	101	Mercurous nitrate, solid
UN 1628	101	Mercurous sulfate, solid
UN 1628	102	Mercurous sulphate
UN 1629	101	Mercuric acetate
UN 1629	101	Mercurous acetate, solid
UN 1629	102	Mercury acetate
UN 1630	101	Mercuric ammonium chloride, solid
UN 1630	102	Mercury ammonium chloride
UN 1631	101	Mercuric benzoate, solid
UN 1631	102	Mercury benzoate
UN 1633	102	Mercury bisulphate
UN 1634	101	Mercuric bromide, solid
UN 1634	101	Mercurous bromide, solid
UN 1634	102	Mercury bromides
UN 1636	101	Mercuric cyanide, solid
UN 1636	102	Mercury cyanide
UN 1637	101	Mercurous gluconate, solid
UN 1637	102	Mercury gluconate
UN 1638	101	Mercuric iodide, solid
NA 1638	101	Mercuric iodide solution
NA 1638	101	Mercurous iodide, solid
UN 1638	102	Mercury iodide
UN 1639	101	Mercurol *or* Mercury nucleate, solid
UN 1639	102	Mercury nucleate
UN 1640	101	Mercuric oleate, solid
UN 1640	102	Mercury oleate
UN 1641	101	Mercuric oxide, solid
UN 1641	101	Mercurous oxide, black, solid
UN 1641	102	Mercury oxide
UN 1642	101	Mercuric oxycyanide, solid
UN 1642	102	Mercury oxycyanide
UN 1643	101	Mercuric potassium iodide, solid
UN 1643	102	Mercury potassium iodide
UN 1644	101	Mercuric salicylate solid
UN 1644	102	Mercury salicylate
UN 1645	101	Mercuric sulfate, solid
UN 1645	102	Mercuric sulphate
UN 1646	101	Mercuric sulfocyanate, solid *or* Mercuric thiocyanate, solid
UN 1646	102	Mercury thiocyanate
UN 1647	102	Methyl bromide and ethylene dibromide
UN 1647	101	Methyl bromide - ethylene dibromide mixture, liquid
UN 1648	101	Acetonitrile
UN 1648	102	Methyl cyanide
UN 1649	101	Motor fuel antiknock compound *or* Antiknock compound
UN 1649	102	Motor fuel anti-knock mixtures
NA 1649	101	Tetraethyl lead, liquid
UN 1650	102	Naphthylamine
UN 1651	102	alpha-Naphthylthiourea
UN 1652	102	Naphthylurea
UN 1653	102	Nickel cyanide
UN 1653	101	Nickel cyanide, solid
UN 1654	102	Nicotine
UN 1654	101	Nicotine, liquid
UN 1655	102	Nicotine
UN 1656	101	Nicotine hydrochloride
UN 1657	101	Nicotine salicylate
UN 1658	101	Nicotine sulfate, liquid
UN 1658	101	Nicotine sulfate, solid
UN 1658	102	Nicotine sulphate
UN 1659	101	Nicotine tartrate
UN 1660	101	Nitric oxide
UN 1661	101	Nitroaniline
UN 1661	102	Nitroanilines
UN 1662	102	Nitrobenzene
UN 1662	101	Nitrobenzene, liquid *or* Nitrobenzol, liquid
UN 1663	101	Nitrophenol
UN 1663	102	Nitrophenols
UN 1664	101	Nitrotoluene
UN 1664	102	Nitrotoluenes
UN 1665	102	Nitroxylenes
NA 1665	101	Nitroxylol
UN 1668	102	Parathion

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1669 ...	102	Pentachloroethane
UN 1670 ...	101	Perchloromethyl mercaptan
UN 1670 ...	102	Perchloromethyl-mercaptan
UN 1671 ...	101	Phenol
UN 1672 ...	102	Phenylcarbylamine chloride
UN 1673 ...	101	Phenylenediamine, meta *or* para, solid
UN 1673 ...	102	Phenylenediamines
UN 1674 ...	102	Phenylmercuric acetate
UN 1677 ...	102	Potassium arsenate
UN 1677 ...	101	Potassium arsenate, solid
UN 1678 ...	102	Potassium arsenite
UN 1678 ...	101	Potassium arsenite, solid
UN 1679 ...	102	Potassium cuprocyanide
UN 1680 ...	102	Potassium cyanide
UN 1680 ...	101	Potassium cyanide, solid
UN 1680 ...	101	Potassium cyanide solution
UN 1681 ...	102	Rodenticides, n.o.s.
UN 1682 ...	102	Sheep dips
UN 1683 ...	102	Silver arsenite
UN 1684 ...	101	Silver cyanide
UN 1685 ...	101	Sodium arsenate
UN 1686 ...	101	Sodium arsenite
UN 1687 ...	101	Sodium azide
UN 1688 ...	102	Sodium cacodylate
UN 1689 ...	102	Sodium cyanide
UN 1689 ...	101	Sodium cyanide, solid
UN 1689 ...	101	Sodium cyanide solution
UN 1690 ...	102	Sodium fluoride
UN 1690 ...	101	Sodium fluoride, solid
NA 1690 ...	101	Sodium fluoride solution
UN 1691 ...	102	Strontium arsenite
UN 1691 ...	101	Strontium arsenite, solid
UN 1692 ...	102	Strychnine
UN 1692 ...	101	Strychnine salt, solid
UN 1692 ...	101	Strychnine, solid
NA 1693 ...	101	Irritating agent, n.o.s.
NA 1693 ...	101	ORM-A, n.o.s.
UN 1693 ...	102	Tear gas
UN 1694 ...	102	Bromobenzyl cyanide
UN 1695 ...	102	Chloroacetone
NA 1695 ...	101	Monochloroacetone, stabilized *or* inhibited
UN 1697 ...	102	Chloroacetophenone
UN 1697 ...	101	Chloroacetophenone, gas, liquid, *or* solid
UN 1698 ...	101	Diphenylaminechloroarsine
UN 1699 ...	102	Diphenylchloroarsine
UN 1700 ...	101	Tear gas candle
UN 1700 ...	102	Tear gas candles
UN 1701 ...	101	Xylyl bromide
UN 1702 ...	102	1,1,2,2-Tetrachloroethane
UN 1702 ...	101	Tetrachloroethane
UN 1703 ...	102	Tetraethyl dithiopyrophosphate
UN 1703 ...	101	Tetraethyl dithiopyrophosphate and compressed gas mixture
UN 1704 ...	102	Tetraethyl dithiopyrophosphate
UN 1704 ...	101	Tetraethyl dithiopyrophosphate, liquid
UN 1704 ...	101	Tetraethyl dithiopyrophosphate mixture, dry
UN 1704 ...	101	Tetraethyl dithiopyrophosphate mixture, liquid
UN 1705 ...	102	Tetraethyl pyrophosphate and compressed gas
UN 1705 ...	101	Tetraethyl pyrophosphate and compressed gas mixture
UN 1707 ...	102	Thallium compounds
NA 1707 ...	101	Thallium salt, solid, n.o.s.
NA 1707 ...	101	Thallium sulfate, solid
UN 1708 ...	102	Toluidines
UN 1709 ...	102	2,4-Toluylenediamine
NA 1709 ...	101	Toluenediamine
UN 1710 ...	101	Trichloroethylene
UN 1711 ...	102	Xylidines
UN 1712 ...	101	Zinc arsenate
UN 1712 ...	102	Zinc arsenate and arsenite
UN 1712 ...	101	Zinc arsenite, solid
UN 1713 ...	101	Zinc cyanide
UN 1714 ...	101	Zinc phosphide
UN 1715 ...	101	Acetic anhydride
UN 1716 ...	101	Acetyl bromide
UN 1717 ...	101	Acetyl chloride
UN 1718 ...	101	Acid butyl phosphate
NA 1719 ...	101	Alkaline

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1719 ...	102	Caustic alkali liquids, n.o.s.
UN 1722 ...	101	Allyl chlorocarbonate
UN 1722 ...	102	Allyl chloroformate
UN 1723 ...	102	Allyl iodide
UN 1724 ...	101	Allyl trichlorosilane
UN 1725 ...	102	Aluminium bromide
UN 1725 ...	101	Aluminum bromide, anhydrous
UN 1726 ...	102	Aluminium chloride
UN 1727 ...	102	Ammonium hydrogen fluoride
UN 1727 ...	101	Ammonium hydrogen fluoride, solid
UN 1728 ...	102	Amyl trichlorosilane
UN 1728 ...	101	Amyl trichorosilane
UN 1729 ...	101	Anisoyl chloride
UN 1730 ...	101	Antimony pentachloride
UN 1731 ...	102	Antimony pentachloride
UN 1731 ...	101	Antimony pentachloride solution
UN 1732 ...	101	Antimony pentafluoride
UN 1733 ...	102	Antimony trichloride
UN 1733 ...	101	Antimony trichloride, solid
UN 1733 ...	101	Antimony trichloride solution
UN 1734 ...	102	Batteries
UN 1735 ...	102	Battery fluid
UN 1736 ...	101	Benzoyl chloride
UN 1737 ...	101	Benzyl bromide
UN 1738 ...	101	Benzyl chloride
UN 1739 ...	101	Benzyl chloroformate
UN 1740 ...	102	Bifluorides, n.o.s.
UN 1741 ...	101	Boron trichloride
UN 1742 ...	102	Boron trifluoride acetic acid complex
UN 1742 ...	101	Boron trifluoride-acetic acid complex
UN 1743 ...	102	Boron trifluoride propionic acid complex
UN 1744 ...	101	Bromine
UN 1745 ...	101	Bromine pentafluoride
UN 1746 ...	101	Bromine trifluoride
UN 1747 ...	101	Butyl trichlorosilane
UN 1748 ...	102	Calcium hypochlorite
UN 1748 ...	101	Calcium hypochlorite mixture
UN 1749 ...	101	Chlorine trifluoride
UN 1750 ...	102	Chloroacetic acid
UN 1750 ...	101	Chloroacetic acid, liquid *or* solution
UN 1751 ...	102	Chloroacetic acid
UN 1751 ...	101	Chloroacetic acid, solid
UN 1752 ...	101	Chloroacetyl chloride
UN 1753 ...	102	Chlorophenyl trichlorosilane
UN 1753 ...	101	Chlorophenyltrichlorosilane
UN 1754 ...	101	Chlorosulfonic acid
UN 1754 ...	101	Chlorosulfonic acid-sulfur trioxide mixture
UN 1754 ...	102	Chlorosulphonic acid
UN 1754 ...	102	Dichloroacetyl chloride
UN 1755 ...	102	Chromic acid
UN 1755 ...	101	Chromic acid solution
UN 1756 ...	102	Chromic fluoride
UN 1756 ...	101	Chromic fluoride, solid
UN 1757 ...	102	Chromic fluoride
UN 1757 ...	101	Chromic fluoride solution
UN 1758 ...	102	Chromium oxychloride
UN 1758 ...	101	Chromium oxychloride *or* Chromyl chloride
UN 1759 ...	102	Cleaning compounds
UN 1759 ...	101	Corrosive solid, n.o.s.
(UN 1759).	102	Corrosive solids, n.o.s.
NA 1759 ...	101	Cosmetics, solid, n.o.s.
NA 1759 ...	101	Drugs, n.o.s. solid
NA 1759 ...	101	Ferrous chloride, solid
NA 1759 ...	101	Stannous chloride, solid
NA 1760 ...	101	Acid, liquid, n.o.s.
UN 1760 ...	102	Alkaline corrosive liquids, n.o.s.
NA 1760 ...	101	Aluminum phosphate solution
NA 1760 ...	101	Aluminum sulfate solution
NA 1760 ...	101	2-(2-Aminoethoxy) ethanol
NA 1760 ...	101	Aminopropyldiethanolamine
NA 1760 ...	101	N-Aminopropylmorpholine
NA 1760 ...	101	bis (Aminopropyl) piperazine
NA 1760 ...	101	Boiler compound, liquid
NA 1760 ...	101	Chemical kit
NA 1760 ...	101	Compound, cleaning, liquid
NA 1760 ...	101	Compound, lacquer, paint, *or* varnish removing, liquid
NA 1760 ...	101	Compound, rust preventing *or* Compound, rust removing
NA 1760 ...	101	Compound, tree *or* weed killing, liquid
NA 1760 ...	101	Compound, vulcanizing, liquid

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1760 ...	101	Corrosive liquid, n.o.s.
UN 1760 ...	102	Corrosive liquids, n.o.s.
NA 1760 ...	101	Cosmetics, liquid, n.o.s.
NA 1760 ...	101	2,2-Dichloropropionic acid
NA 1760 ...	101	Drugs, n.o.s. liquid
NA 1760 ...	101	Ethyl phosphonothioic dichloride, anhydrous
NA 1760 ...	101	Ethyl phosphonous dichloride, anhydrous
NA 1760 ...	101	Ethyl phosphorodichloridate
NA 1760 ...	101	Ferrous chloride, solution
NA 1760 ...	101	Flame retardant compound liquid
NA 1760 ...	101	Hexanoic acid
NA 1760 ...	101	Isopentanoic acid
NA 1760 ...	101	Memtetrahydro phthalic anhydride
NA 1760 ...	101	Methyl phosphonothioic dichloride, anhydrous
NA 1760 ...	101	Methyl phosphonous dichloride
NA 1760 ...	101	Morpholine, aqueous, mixture
NA 1760 ...	101	Nitric acid, 40% or less
NA 1760 ...	101	ORM-B, n.o.s.
NA 1760 ...	101	Textile treating compound *or* mixture, liquid
NA 1760 ...	101	Titanium sulfate solution
NA 1760 ...	101	Valeric acid
NA 1760 ...	101	Water treatment compounds, liquid
NA 1760 ...	101	White acid
UN 1761 ...	102	Cupriethylenediamine
UN 1761 ...	101	Cupriethylene-diamine solution
UN 1762 ...	101	Cyclohexenyl trichlorosilane
UN 1763 ...	101	Cyclohexyl trichlorosilane
UN 1764 ...	101	Dichloroacetic acid
UN 1765 ...	101	Dichloroacetyl chloride
UN 1766 ...	102	Dichlorophenyl trichlorosilane
UN 1766 ...	101	Dichlorophenyltrichlorosilane
UN 1767 ...	101	Diethyl dichlorosilane
UN 1768 ...	102	Difluorophosphoric acid
UN 1768 ...	101	Difluorophosphoric acid, anhydrous
UN 1769 ...	101	Diphenyl dichlorosilane
UN 1770 ...	102	Diphenylmethyl bromide
UN 1770 ...	101	Diphenyl methyl bromide, solid
UN 1770 ...	101	Diphenyl methyl bromide solution
UN 1771 ...	101	Dodecyl trichlorosilane
UN 1773 ...	102	Ferric chloride
UN 1773 ...	101	Ferric chloride, solid
UN 1774 ...	101	Fire extinguisher charge containing sulfuric acid
UN 1774 ...	102	Fire extinguisher charges
UN 1775 ...	101	Fluoboric acid
UN 1776 ...	102	Fluorophosphoric acid
UN 1776 ...	101	Monofluorophosphoric acid, anhydrous
UN 1777 ...	101	Fluorosulfonic acid *or* Fluosulfonic acid
UN 1777 ...	102	Fluorosulphonic acid
UN 1778 ...	102	Fluosilicic acid
NA 1778 ...	101	Hydrofluorosilicic acid
UN 1779 ...	101	Formic acid
NA 1779 ...	101	Formic acid solution
UN 1780 ...	101	Fumaryl chloride
UN 1781 ...	102	Hexadecyl trichlorosilane
UN 1781 ...	101	Hexadecyltrichlorosilane
UN 1782 ...	101	Hexafluorophosphoric acid
UN 1783 ...	102	Hexamethylenediamine
UN 1783 ...	101	Hexamethylenediamine, solution
UN 1784 ...	102	Hexyl trichlorosilane
UN 1784 ...	101	Hexyltrichlorosilane
UN 1786 ...	102	Acid mixtures
UN 1786 ...	101	Hydrofluoric and sulfuric acid mixture
UN 1787 ...	101	Hydriodic acid
UN 1788 ...	101	Hydrobromic acid
UN 1788 ...	101	Hydrobromic acid not more than 49% strength
NA 1789 ...	101	Compound, cleaning, liquid (containing hydrochloric (muriatic) acid)
UN 1789 ...	101	Hydrochloric acid
NA 1789 ...	101	Hydrochloric acid mixture
UN 1789 ...	101	Hydrochloric acid solution, inhibited
NA 1790 ...	101	Compound, cleaning, liquid (containing hydrofluoric acid)
NA 1790 ...	101	Etching acid, liquid, n.o.s.
UN 1790 ...	102	Hydrofluoric acid
UN 1790 ...	101	Hydrofluoric acid solution
NA 1790 ...	101	Hydrogen fluoride

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1791	102	Hypochlorite
NA 1791	101	Hypochlorite solution
NA 1791	101	Hypochlorite solution containing not more than 7% available chlorine
UN 1792	101	Iodine monochloride
UN 1793	102	Isopropyl acid phosphate
UN 1793	101	Isopropyl acid phosphate, solid
NA 1794	101	Lead dross
UN 1794	101	Lead sulfate, solid
UN 1794	102	Lead sulphate
UN 1796	102	Acid mixtures
NA 1796	101	Nitrating acid
NA 1796	101	Nitrating acid, spent
UN 1798	101	Nitrohydrochloric acid
NA 1798	101	Nitrohydrochloric acid, diluted
UN 1799	102	Nonyl trichlorosilane
UN 1799	101	Nonyltrichlorosilane
UN 1800	102	Octadecyl trichlorosilane
UN 1800	101	Octadecyltrichlorosilane
UN 1801	102	Octyl trichlorosilane
UN 1801	101	Octyltrichlorosilane
UN 1802	102	Perchloric acid
UN 1802	101	Perchloric acid, not over 50% acid
UN 1803	102	Phenolsulphonic acid
UN 1804	102	Phenyl trichlorosilane
UN 1804	101	Phenyltrichlorosilane
UN 1805	102	o-Phosphoric acid
UN 1805	101	Phosphoric acid
UN 1806	102	Phosphorus pentachloride
UN 1806	101	Phosphorus pentachloride, solid
NA 1807	101	Phosphoric anhydride
UN 1807	102	Phosphorus pentoxide
UN 1808	101	Phosphorus tribromide
UN 1809	101	Phosphorus trichloride
UN 1810	101	Phosphorus oxychloride
UN 1810	102	Phosphoryl chloride
UN 1811	102	Potassium bifluoride
NA 1811	101	Potassium hydrogen fluoride solution
UN 1812	101	Potassium fluoride
UN 1812	101	Potassium fluoride solution
UN 1813	102	Potassium hydroxide
UN 1813	101	Potassium hydroxide, dry solid, flake, bead, *or* granular
UN 1814	102	Potassium hydroxide
UN 1814	101	Potassium hydroxide, liquid *or* solution
UN 1815	102	Propionyl chloride
UN 1816	101	Propyl trichlorosilane
UN 1817	101	Pyrosulfuryl chloride
UN 1817	102	Pyrosulphuryl chloride
UN 1818	101	Silicon chloride *or* Silicon tetrachloride
UN 1818	102	Silicon tetrachloride
UN 1819	102	Sodium aluminate
UN 1819	101	Sodium aluminate solution
UN 1821	101	Sodium hydrogen sulfate, solid
UN 1821	102	Sodium hydrogen sulphate
UN 1823	102	Sodium hydroxide
UN 1823	101	Sodium hydroxide, dry solid, flake, bead, *or* granular
UN 1824	102	Sodium hydroxide
UN 1824	101	Sodium hydroxide, liquid *or* solution
UN 1825	102	Sodium monoxide
UN 1825	101	Sodium monoxide, solid
UN 1826	102	Acid mixtures
UN 1827	102	Stannic chloride
UN 1827	101	Tin tetrachloride, anhydrous
UN 1828	101	Sulfur chloride
UN 1828	102	Sulphur chlorides
UN 1829	101	Sulfur trioxide
UN 1829	102	Sulphur trioxide
UN 1830	101	Sulfuric acid
UN 1830	102	Sulphuric acid
NA 1831	101	Oleum
UN 1831	102	Sulphuric acid
UN 1832	101	Sulfuric acid, spent
UN 1832	102	Sulphuric acid
UN 1833	101	Sulfurous acid
UN 1833	102	Sulphurous acid
UN 1834	101	Sulfuryl chloride
UN 1834	102	Sulphuryl chloride
UN 1835	102	Tetramethylammonium hydroxide
UN 1835	101	Tetramethylammonium hydroxide, liquid
UN 1836	101	Thionyl chloride
UN 1837	101	Thiophosphoryl chloride
UN 1838	101	Titanium tetrachloride
UN 1839	102	Trichloroacetic acid
UN 1839	101	Trichloroacetic acid, solid
UN 1840	102	Zinc chloride
UN 1840	101	Zinc chloride solution
UN 1841	101	Acetaldehyde ammonia
UN 1842	102	Acetic acid
UN 1843	102	Ammonium dinitro-o-cresolate
UN 1845	101	Carbon dioxide, solid, *or* Dry ice, *or* Carbonice
UN 1846	101	Carbon tetrachloride
UN 1847	102	Potassium sulphide
UN 1848	101	Propionic acid
NA 1848	101	Propionic acid solution
UN 1849	102	Sodium sulphide
UN 1850	101	Eradicator, paint *or* grease, liquid
UN 1850	102	Eradicators
UN 1851	101	Medicines, n.o.s.
UN 1851	101	Medicines, n.o.s., liquid
UN 1851	101	Medicines, n.o.s., solid
UN 1854	102	Barium alloys
UN 1855	102	Calcium
UN 1856	102	Rags
UN 1856	101	Rags, oily
UN 1857	102	Textile waste
UN 1857	101	Textile waste, wet
UN 1857	101	Waste textile, wet
UN 1858	101	Hexafluoropropylene
UN 1859	101	Silicon tetrafluoride
UN 1860	102	Vinyl fluoride
UN 1860	101	Vinyl fluoride, inhibited
UN 1862	101	Ethyl crotonate
UN 1863	102	Fuel, aviation
UN 1863	101	Fuel, aviation, turbine engine
UN 1864	102	Gas drips
UN 1864	101	Gas drips, hydrocarbon
UN 1865	102	n-Propyl nitrate
UN 1866	102	Resin
UN 1866	101	Resin solution
UN 1867	102	Cigarettes
UN 1868	101	Decaborane
UN 1869	102	Magnesium
UN 1869	102	Magnesium alloys
UN 1869	101	Magnesium, metal
UN 1870	102	Potassium borohydride
UN 1871	102	Titanium hydride
UN 1872	102	Lead dioxide
UN 1872	101	Lead peroxide
UN 1873	101	Perchloric acid
UN 1884	101	Barium oxide
UN 1885	101	Benzidine
UN 1886	102	Benzylidene chloride
UN 1887	101	Bromochloromethane
UN 1888	101	Chloroform
UN 1889	101	Cyanogen bromide
UN 1891	102	Ethyl bromide
UN 1892	102	Ethyl dichloroarsine
UN 1893	102	Organophosphates
UN 1894	102	Phenylmercuric hydroxide
UN 1895	102	Phenylmercuric nitrate
UN 1897	102	Tetrachloroethylene
UN 1897	101	Tetrachloroethylene *or* Perchloroethylene
UN 1898	101	Acetyl iodide
UN 1899	102	Alkanesulphonic acids
UN 1901	102	Calcium hydrogen sulphite
NA 1902	101	Di-(2-ethylhexyl) phosphoric acid
UN 1902	101	Diisooctyl acid phosphate
UN 1903	101	Disinfectant, liquid
UN 1903	102	Disinfectants
UN 1905	102	Selenic acid
UN 1905	101	Selenic acid, liquid
UN 1906	101	Acid, sludge
UN 1906	102	Sludge acid
UN 1907	102	Soda lime
UN 1907	101	Soda lime, solid
UN 1908	102	Sodium chlorite
UN 1908	101	Sodium chlorite solution
UN 1909	102	Sodium hydrogen sulphite
UN 1910	101	Calcium oxide
UN 1911	102	Diborane
UN 1911	101	Diborane *or* diborane mixtures
UN 1912	102	Methyl chloride and methylene chloride
UN 1912	101	Methyl chloride-methylene chloride mixture
UN 1913	102	Neon
UN 1914	102	Butyl propionate
UN 1915	102	Cyclohexanone
UN 1916	102	Dichloroethyl ether
UN 1917	102	Ethyl acrylate
UN 1917	101	Ethyl acrylate, inhibited
UN 1918	102	Isopropylbenzene
UN 1919	102	Methyl acrylate
UN 1919	101	Methyl acrylate, inhibited
UN 1920	102	Nonane
UN 1921	102	Propyleneimine
UN 1921	101	Propyleneimine, inhibited
UN 1922	101	Pyrrolidine
UN 1923	102	Calcium dithionite
UN 1924	102	Ethyl aluminum dichloride
UN 1925	102	Ethyl aluminum sesquichloride
UN 1926	102	Methyl aluminum sesquibromide
UN 1927	102	Methyl aluminum sesquichloride
UN 1928	102	Methyl magnesium bromide
UN 1928	101	Methyl magnesium bromide in ethyl ether
UN 1929	102	Potassium dithionite
UN 1930	102	Triisobutyl aluminum
UN 1931	102	Zinc dithionite
UN 1931	101	Zinc hydrosulfite
UN 1932	102	Zirconium
UN 1932	101	Zirconium scrap
UN 1935	102	Cyanides
UN 1936	102	Bromoacetic acid
UN 1936	101	Bromoacetic acid, solid
UN 1936	101	Bromoacetic acid solution
UN 1939	101	Phosphorus oxybromide
UN 1940	101	Thioglycolic acid
UN 1941	101	Dibromodifluoromethane
UN 1942	102	Ammonium nitrate
NA 1942	101	Ammonium nitrate (no organic coating)
NA 1942	101	Ammonium nitrate (organic coating)
UN 1944	102	Matches
UN 1944	101	Matches, safety
UN 1945	102	Matches
UN 1950	102	Aerosol dispensers
UN 1951	102	Argon
UN 1951	101	Argon, liquid pressurized
UN 1952	102	Ethylene oxide and carbon dioxide
UN 1953	102	Compressed *or* liquefied gases
(UN 1953)	102	Sabine
(UN 1953)	102	Water-gas
UN 1954	101	Compressed gas, n.o.s.
UN 1954	102	Compressed *or* liquefied gases
NA 1954	101	Refrigerating machine
NA 1955	101	Chloropicrin and nonflammable, nonliquefied compressed gas mixture
UN 1955	102	Compressed *or* liquefied gases
NA 1955	101	Methyl bromide and nonflammable, nonliquefied compressed gas mixture, liquid
NA 1955	101	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound; mixed with compressed gas
(UN 1955)	102	Perchloryl fluoride
(UN 1955)	102	Phosphorus trifluoride
(UN 1955)	102	Tetrafluorohydrazine
NA 1956	101	Accumulator, pressurized
UN 1956	101	Compressed gas, n.o.s.
UN 1956	102	Compressed *or* liquefied gases
NA 1956	101	Dichlorodifluoromethane-dichlorotetrafluoroethane mixture
NA 1956	101	Dichlorodifluoromethane-monochlorodifluoromethane mixture
NA 1956	101	Dichlorodifluoromethane-trichloromonofluoromethane mixture
NA 1956	101	Dichlorodifluoromethane-trichlorotrifluoroethane mixture
NA 1958	101	Hexafluoropropylene oxide
NA 1958	101	Liquefied nonflammable gas
NA 1958	101	Water pump system
UN 1957	102	Deuterium
UN 1958	102	Dichlorotetrafluoroethane

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 1959 ...	102	1,1-Difluoroethylene
UN 1960 ...	101	Engine starting fluid
UN 1961 ...	102	Ethane
UN 1962 ...	101	Ethylene
UN 1963 ...	102	Helium
UN 1964 ...	102	Hydrocarbon gases
UN 1964 ...	101	Hydrocarbon gas, nonliquefied
UN 1965 ...	102	Hydrocarbon gases
UN 1965 ...	101	Hydrocarbon gas, liquefied
UN 1966 ...	102	Hydrogen
UN 1966 ...	101	Hydrogen, liquefied
UN 1967 ...	102	Insecticide gases
NA 1967 ...	101	Insecticide, liquefied gas, containing Poison A material *or* Poison B material
NA 1967 ...	101	Parathion and compressed gas mixture
UN 1968 ...	102	Insecticide gases
NA 1968 ...	101	Insecticide, liquefied gas
UN 1969 ...	102	Isobutane
UN 1970 ...	102	Krypton
UN 1971 ...	101	Methane
UN 1971 ...	102	Methane *or* natural gases
UN 1972 ...	102	Methane *or* natural gases
UN 1973 ...	102	Chlorodifluoromethane and chloropentafluoroethane
UN 1974 ...	102	Chlorodifluorobromomethane
UN 1975 ...	102	Nitric oxide and nitrogen tetroxide
UN 1976 ...	102	Octafluorocyclobutane
UN 1977 ...	102	Nitrogen
UN 1977 ...	101	Nitrogen, pressurized liquid
UN 1978 ...	102	Propane
UN 1979 ...	102	Rare gases
NA 1980 ...	101	Helium-oxygen mixture
UN 1980 ...	102	Rare gases
UN 1981 ...	102	Rare gases
UN 1982 ...	102	Tetrafluoromethane
UN 1983 ...	102	Trifluorochloroethane
UN 1984 ...	102	Trifluoromethane
UN 1986 ...	102	Alcohols
NA 1986 ...	101	Denatured alcohol
NA 1986 ...	101	Propargyl alcohol
NA 1986 ...	101	Rum, denatured
UN 1987 ...	101	Alcohol, n.o.s.
UN 1987 ...	102	Alcohols
UN 1988 ...	102	Aldehydes
UN 1989 ...	102	Aldehydes
UN 1989 ...	101	Benzaldehyde
UN 1990 ...	102	Benzaldehyde
UN 1991 ...	102	Chloroprene
UN 1991 ...	101	Chloroprene, inhibited
UN 1992 ...	101	Flammable liquid, poisonous, n.o.s.
UN 1992 ...	102	Flammable liquids
NA 1993 ...	101	Combustible liquid, n.o.s.
NA 1993 ...	101	Compound, cleaning, liquid
NA 1993 ...	101	Compound, tree *or* weed killing, liquid
NA 1993 ...	101	Cosmetics, n.o.s.
NA 1993 ...	101	Creosote, coal tar
NA 1993 ...	101	Crude oil, petroleum
NA 1993 ...	101	Disinfectant, liquid, n.o.s.
NA 1993 ...	101	Drugs, n.o.s.
NA 1993 ...	101	Drugs, n.o.s,
NA 1993 ...	101	Ethyl nitrate
UN 1993 ...	101	Flammable liquid, n.o.s.
UN 1993 ...	102	Flammable liquids
NA 1993 ...	101	Fuel oil
NA 1993 ...	101	Fuel oil, No. 1, 2, 4, 5 *or* 6
NA 1993 ...	101	Heater for refrigerator car, liquid fuel type
NA 1993 ...	101	Insecticide, liquid, n.o.s.
NA 1993 ...	101	Mortar stain, liquid
NA 1993 ...	101	Nitrostarch, wet with not less than 30% alcohol *or* solvent
NA 1993 ...	101	Organic peroxide liquid *or* solution, n.o.s.
NA 1993 ...	101	Plastic solvent, n.o.s.
NA 1993 ...	101	Refrigerating machine
NA 1993 ...	101	Solvent, n.o.s.
NA 1993 ...	101	Wax, liquid
UN 1994 ...	102	Iron carbonyl
UN 1995 ...	102	Pesticides
UN 1996 ...	102	Pesticides
UN 1997 ...	102	Solvents
UN 1998 ...	102	Solvents

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
NA 1999 ...	101	Asphalt
NA 1999 ...	101	Asphalt, cut back
UN 1999 ...	102	Cut-backs
UN 1999 ...	101	Tar, liquid
UN 2000 ...	102	Celluloid
UN 2001 ...	102	Cobalt naphthenates
UN 2002 ...	102	Celluloid
UN 2003 ...	102	Aluminium alkylchlorides
UN 2003 ...	102	Aluminium alkyls
UN 2003 ...	102	Aluminium tributyl
UN 2003 ...	102	Metal alkyls, n.o.s.
UN 2004 ...	102	Magnesium diamide
UN 2005 ...	102	Magnesium diphenyl
UN 2006 ...	102	Plastics
NA 2006 ...	101	Pyroxylin plastic scrap
NA 2006 ...	101	Pyroxylin plastics, rods, sheets, rolls, *or* tubes
UN 2008 ...	102	Zirconium
UN 2008 ...	101	Zirconium metal, dry
UN 2008 ...	102	Zirconium metal powder, dry
UN 2009 ...	102	Zirconium
UN 2010 ...	102	Magnesium hydride
UN 2011 ...	102	Magnesium phosphide
UN 2012 ...	102	Potassium phosphide
UN 2013 ...	102	Strontium phosphide
UN 2014 ...	102	Hydrogen peroxide
UN 2014 ...	101	Hydrogen peroxide solution
UN 2015 ...	102	Hydrogen peroxide
UN 2015 ...	101	Hydrogen peroxide solution
UN 2016 ...	102	Ammunition
UN 2016 ...	101	Chemical ammunition, nonexplosive
NA 2016 ...	101	Grenade
UN 2017 ...	102	Ammunition
UN 2017 ...	101	Chemical ammunition, nonexplosive
NA 2017 ...	101	Grenade, tear gas
UN 2018 ...	102	Chloroanilines
UN 2019 ...	102	Chloroanilines
UN 2020 ...	102	Chlorophenates
UN 2020 ...	102	Chlorophenols
NA 2020 ...	101	Pentachlorophenol
NA 2020 ...	101	Trichlorophenol
UN 2021 ...	102	Chlorophenates
UN 2021 ...	102	Chlorophenols
UN 2022 ...	102	Cresylic acid
NA 2022 ...	101	Mining reagent, liquid
UN 2023 ...	101	Epichlorohydrin
UN 2024 ...	102	Mercury compounds
NA 2025 ...	101	Mercuric subsulfate, solid
UN 2025 ...	101	Mercury compound, n.o.s., solid
UN 2025 ...	102	Mercury compounds
UN 2026 ...	102	Phenylmercuric compounds, n.o.s.
UN 2027 ...	102	Sodium arsenite
UN 2028 ...	102	Bombs, smoke
UN 2029 ...	102	Hydrazine
UN 2029 ...	101	Hydrazine, anhydrous
UN 2030 ...	102	Hydrazine
UN 2030 ...	101	Hydrazine, aqueous solution
UN 2031 ...	101	Nitric acid
UN 2032 ...	102	Nitric acid
UN 2032 ...	101	Nitric acid, fuming
UN 2033 ...	102	Potassium oxide
UN 2034 ...	102	Hydrogen and methane
UN 2035 ...	102	Trifluoroethane
UN 2036 ...	101	Xenon
UN 2037 ...	102	Cartouche
UN 2037 ...	102	Gas cartridges
UN 2037 ...	102	Receptacles
UN 2038 ...	102	Dinitrotoluenes
UN 2044 ...	102	2,2-Dimethylpropane
UN 2045 ...	102	Isobutyraldehyde
UN 2046 ...	102	p-Cymene
UN 2047 ...	101	Dichloropropene
NA 2047 ...	101	Dichloropropene and propylene dichloride mixture
UN 2048 ...	102	Dicyclopentadiene
UN 2049 ...	102	Diethylbenzene
UN 2050 ...	102	Diisobutylene
UN 2051 ...	102	Dimethylethanolamine
UN 2052 ...	102	Dipentene
UN 2053 ...	102	Methyl isobutyl carbinol
UN 2054 ...	101	Morpholine
NA 2054 ...	101	Morpholine, aqueous, mixture
UN 2055 ...	102	Styrene monomer
UN 2055 ...	101	Styrene monomer, inhibited
UN 2056 ...	101	Tetrahydrofuran

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2057 ...	102	Tripropylene
UN 2058 ...	102	Valeraldehyde
UN 2059 ...	101	Box too gum
NA 2059 ...	101	Collodion
UN 2059 ...	102	Nitrocellulose
NA 2059 ...	101	Nitrocellulose, colloided, granular *or* flake, wet with not less than 20% alcohol *or* solvent, *or* block, wet with not less than 25% alcohol
NA 2059 ...	101	Pyroxylin solution
NA 2059 ...	101	Pyroxylin solvent, n.o.s.
UN 2060 ...	101	Box too gum
UN 2065 ...	102	Endrin
UN 2067 ...	101	Ammonium nitrate fertilizer
UN 2067 ...	102	Ammonium nitrate fertilizers
UN 2068 ...	101	Ammonium nitrate-carbonate mixture
UN 2069 ...	101	Ammonium nitrate mixed fertilizer
UN 2070 ...	101	Ammonium nitrate-phosphate
UN 2071 ...	102	Ammonium nitrate fertilizers
UN 2072 ...	102	Ammonium nitrate fertilizer
UN 2073 ...	102	Ammonia
UN 2073 ...	101	Ammonia solution
UN 2074 ...	102	Acrylamide
UN 2075 ...	102	Chloral
NA 2076 ...	101	Cresol
UN 2076 ...	102	Cresols
UN 2077 ...	102	Naphthylamine
UN 2078 ...	101	Toluene diisocyanate
UN 2079 ...	102	Diethylenetriamine
UN 2080 ...	101	Acetyl acetone peroxide
UN 2081 ...	101	Acetyl benzoyl peroxide
UN 2081 ...	101	Acetyl benzoyl peroxide solution
UN 2082 ...	101	Acetyl cyclohexanesulphonyl peroxide
UN 2082 ...	102	Acetyl cyclohexane sulphonyl peroxide
UN 2083 ...	101	Acetyl cyclohexanesulphonyl peroxide
UN 2083 ...	102	Acetyl cyclohexane sulphonyl peroxide
UN 2084 ...	101	Acetyl peroxide
UN 2084 ...	101	Acetyl peroxide solution
NA 2085 ...	101	Benzoyl peroxide
UN 2086 ...	102	Benzoyl peroxide
UN 2087 ...	101	Benzoyl peroxide
UN 2088 ...	101	Benzoyl peroxide
UN 2089 ...	101	Benzoyl peroxide
UN 2090 ...	101	Benzoyl peroxide
UN 2091 ...	101	tert-Butyl cumyl peroxide
NA 2091 ...	101	tert-Butyl isopropyl benzene hydroperoxide
UN 2091 ...	102	tert-Butyl cumyl peroxide
UN 2092 ...	101	tert-Butyl hydroperoxide
UN 2092 ...	102	tert-Butyl hydroperoxide
UN 2093 ...	101	tert-Butyl hydroperoxide
UN 2093 ...	102	tert-Butyl hydroperoxide
UN 2094 ...	101	tert-Butyl hydroperoxide
UN 2094 ...	102	tert-Butyl hydroperoxide
UN 2095 ...	101	tert-Butyl peroxyacetate
UN 2095 ...	102	tert-Butyl peracetate
UN 2096 ...	101	tert-Butyl peroxyacetate
UN 2096 ...	102	tert-Butyl peracetate
UN 2097 ...	101	tert-Butyl peroxybenzoate
UN 2097 ...	102	tert-Butyl perbenzoate
UN 2098 ...	101	tert-Butyl peroxybenzoate
UN 2098 ...	102	tert-Butyl perbenzoate
UN 2099 ...	101	tert-Butyl peroxymaleate
UN 2099 ...	102	tert-Butyl permaleate
UN 2100 ...	101	tert-Butyl peroxymaleate
UN 2100 ...	102	tert-Butyl permaleate
UN 2101 ...	101	tert-Butyl peroxymaleate
UN 2101 ...	102	tert-Butyl permaleate
UN 2102 ...	101	Di-tert-Butyl peroxide
UN 2102 ...	102	tert-Butyl peroxide
UN 2103 ...	101	tert-Butyl peroxyisopropyl carbonate
UN 2103 ...	102	tert-Butyl peroxy isopropyl carbonate
UN 2104 ...	101	tert-Butyl peroxy-3,5,5-trimethylhexanoate *or* tert-Butyl peroxyisononanoate
UN 2104 ...	102	tert-Butyl peroxy-3,5,5-trimethyl hexanoate
UN 2105 ...	101	tert-Butyl peroxyphthalate
UN 2105 ...	102	tert-Butyl monoperphthalate
UN 2106 ...	101	Di-(tert-butylperoxy)phthalate
UN 2106 ...	102	tert-Butyl diperphthalate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2107	101	Di-(tert-butylperoxy)phthalate
UN 2107	102	tert-Butyl diperphthalate
UN 2108	101	Di-(tert-butylperoxy)phthalate
UN 2108	102	tert-Butyl diperphthalate
UN 2110	101	tert-Butyl peroxypivalate
UN 2110	102	tert-Butyl perpivalate
UN 2111	102	2,2-Bis-(tert-butylperoxy) butane
UN 2111	101	2,2-Di-(tert-butylperoxy)butane
UN 2112	102	1,4-Bis-(2-tert-butylperoxy isopropyl) benzene, *or* ,1,3-bis-(2-tert-butylperoxy isopropyl) benzene
UN 2112	101	1,3-Di-(2-tert-butylperoxyisopropyl) benzene
UN 2112	101	1,3-Di-(2-tert-butylperoxyisopropyl) benzene and 1,4-Di-(2-tert-butylperoxyisopropyl) benzene mixture
UN 2113	101	p-Chlorobenzoyl peroxide
UN 2113	102	p-Chlorobenzoyl peroxide
UN 2114	101	p-Chlorobenzoyl peroxide
UN 2114	102	p-Chlorobenzoyl peroxide
UN 2115	101	p-Chlorobenzoyl peroxide
UN 2115	102	p-Chlorobenzoyl peroxide
UN 2116	101	Cumene hydroperoxide
UN 2117	102	1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide
UN 2118	102	1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide
UN 2118	101	Cyclohexanone peroxide
UN 2119	102	1-Hydroxy-1'-hydroperoxy dicyclohexyl peroxide
UN 2119	101	Cyclohexanone peroxide
UN 2120	101	Decanoyl peroxide
NA 2121	101	Dicumyl peroxide
UN 2121	101	Dicumyl peroxide, dry
UN 2122	102	Di-(2-ethylhexyl) perdicarbonate
UN 2122	101	Di-(2-ethylhexyl) peroxydicarbonate
UN-2123	102	Di-(2-ethylhexyl) perdicarbonate
UN 2123	101	Di-(2-ethylhexyl) peroxydicarbonate
UN 2124	101	Lauroyl peroxide
UN 2125	101	p-Menthane hydroperoxide
UN 2125	101	Paramenthane hydroperoxide
UN 2125	102	p-Menthane hydroperoxide
UN 2126	102	Isobutyl methyl ketone peroxide
UN 2126	101	Methyl isobutyl ketone peroxide
UN 2127	102	Ethyl methyl ketone peroxide(s)
UN 2128	102	Isononanoyl peroxide
UN 2128	101	Isononanyl peroxide
NA 2129	101	Caprylyl peroxide solution
UN 2129	102	n-Octanoyl peroxide
UN 2129	101	n-Octanoyl peroxide
UN 2130	102	n-Nonanoyl peroxide
UN 2130	101	Pelargonyl peroxide
UN 2131	102	Peracetic acid
NA 2131	101	Peracetic acid solution
UN 2131	101	Peroxyacetic acid
UN 2132	101	Propionyl peroxide
UN 2133	102	Diisopropyl perdicarbonate
NA 2133	101	Isopropyl percarbonate, unstabilized
UN 2133	101	Isopropyl peroxydicarbonate
UN 2134	102	Diisopropyl perdicarbonate
NA 2134	101	Isopropyl percarbonate, stabilized
UN 2134	101	Isopropyl peroxydicarbonate
UN 2135	101	Succinic acid peroxide
UN 2136	101	Tetralin hydroperoxide
UN 2137	102	2,4-Dichlorobenzoyl peroxide
UN 2137	101	2,4-Dichlorobenzoyl peroxide
UN 2138	102	2,4-Dichlorobenzoyl peroxide
UN 2138	101	2,4-Dichlorobenzoyl peroxide
UN 2139	102	2,4-Dichlorobenzoyl peroxide
UN 2139	101	2,4-Dichlorobenzoyl peroxide
UN 2140	101	n-Butyl-4,4-di-(tert-butylperoxy)valerate
UN 2140	102	n-Butyl-4,4-bis-(tert-butyl-peroxy) valerate
UN 2141	101	n-Butyl-4,4-di-(tert-butylperoxy)valerate
UN 2141	102	n-Butyl-4,4-bis-(tert-butyl-peroxy) valerate
UN 2142	101	tert-Butyl peroxyisobutyrate
UN 2142	102	tert-Butyl perisobutyrate
UN 2143	101	tert-Butyl peroxy-2-ethylhexanoate
UN 2143	102	tert-Butyl per-(2-ethyl) hexanoate
UN 2144	101	tert-Butyl peroxydiethylacetate
UN 2144	102	tert-Butyl perdiethylacetate

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2145	102	1,1-Bis-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane
UN 2145	101	1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane
UN 2146	102	1,1-Bis-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane
UN 2146	101	1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane
UN 2147	102	1,1-Bis-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane
UN 2147	101	1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl cyclohexane
UN 2148	102	Bis-(1-hydroxy cyclohexyl) peroxide
UN 2148	101	Di-(1-hydroxycyclohexyl) peroxide
UN 2149	102	Dibenzyl perdicarbonate
UN 2149	101	Dibenzyl peroxydicarbonate
UN 2150	102	Di-sec-butyl perdicarbonate
UN 2150	101	Di-sec-butyl peroxydicarbonate
UN 2151	102	Di-sec-butyl perdicarbonate
UN 2151	101	Di-sec-butyl peroxydicarbonate
UN 2152	102	Dicyclohexyl perdicarbonate
UN 2152	101	Dicyclohexyl peroxydicarbonate
UN 2153	102	Dicyclohexyl perdicarbonate
UN 2153	101	Dicyclohexyl peroxydicarbonate
UN 2154	102	Bis-(4-tert-butyl cyclohexyl) perdicarbonate
UN 2154	101	Di-(4-tert-butylcyclohexyl)peroxydicarbonate
UN 2155	102	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexane
UN 2155	101	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane
UN 2156	102	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexane
UN 2156	101	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane
UN 2157	102	2,5-Dimethyl-2,5-bis-(2-ethylhexanoylperoxy) hexane
UN 2157	101	2,5-Dimethyl-2,5-di-(2-ethylhexanoylperoxy)hexane
UN 2158	102	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexyne-3
UN 2158	101	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3
UN 2159	102	2,5-Dimethyl-2,5-bis-(tert-butylperoxy) hexyne-3
UN 2159	101	2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexyne-3
UN 2160	102	1,1,3,3-Tetramethyl butyl hydroperoxide
UN 2160	101	1,1,3,3-Tetramethylbutyl hydroperoxide
UN 2161	102	1,1,3,3-Tetramethyl butyl peroxy-2-ethyl hexanoate
UN 2161	101	1,1,3,3-Tetramethylbutyl peroxy-2-ethylhexanoate
UN 2162	101	Pinane hydroperoxide
UN 2162	101	Pinane hydroperoxide solution
UN 2163	101	Diacetone alcohol peroxide
UN 2163	102	Diacetone alcohol peroxides
UN 2164	102	Dicetyl perdicarbonate
UN 2164	101	Dicetyl peroxydicarbonate
UN 2165	102	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxonane
UN 2165	101	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxocyclononane
UN 2166	102	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxonane
UN 2166	101	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxocyclononane
UN 2167	102	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetroxonane
UN 2167	101	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxocyclononane
UN 2168	102	2,2-Bis-(4,4-di-tert-butylperoxy cyclohexyl) propane
UN 2168	101	2,2-Di-(4,4-di-tert-butylperoxycyclohexyl)propane
UN 2169	101	n-Butyl peroxydicarbonate
UN 2169	102	n-Butyl perdicarbonate
UN 2170	101	n-Butyl peroxydicarbonate
UN 2170	102	n-Butyl perdicarbonate
UN 2171	101	Diisopropylbenzene hydroperoxide
UN 2171	101	Diisopropylbenzene hydroperoxide solution

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2172	102	2,5-Dimethyl-2,5-bis-(benzoylperoxy) hexane
UN 2172	101	2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane
UN 2173	102	2,5-Dimethyl-2,5-bis-(benzoylperoxy) hexane
UN 2173	101	2,5-Dimethyl-2,5-di-(benzoylperoxy)hexane
UN 2174	102	2,5-Dimethyl-2,5-dihydroperoxy hexane
UN 2174	101	2,5-Dimethyl-2,5-dihydroperoxy hexane
UN 2174	101	Dimethylhexane dihydroperoxide, (with 18% or more water)
UN 2175	102	Diethyl perdicarbonate
UN 2175	101	Diethyl peroxydicarbonate
UN 2176	101	Di-n-propyl peroxydicarbonate
UN 2177	101	tert-Butyl peroxyneodecanoate
UN 2177	102	tert-Butyl per-neodecanoate
UN 2178	102	2,2-Dihydroperoxy propane
UN 2178	101	2,2-Dihydroperoxy propane
UN 2179	102	1,1-Bis-(tert-butylperoxy) cyclohexane
UN 2179	101	1,1-Di-(tert-butylperoxy)cyclohexane
UN 2180	102	1,1-Bis-(tert-butylperoxy) cyclohexane
UN 2180	101	1,1-Di-(tert-butylperoxy)cyclohexane
UN 2181	102	1,2-Bis-(tert-butylperoxy) cyclohexane
UN 2181	101	1,2-Di-(tert-butylperoxy)cyclohexane
UN 2182	101	Diisobutyryl peroxide
UN 2182	102	Isobutyryl peroxide
UN 2183	101	tert-Butyl peroxycrotonate
UN 2183	102	tert-Butyl percrotonate
UN 2184	102	Ethyl-3,3-bis-(tert-butylperoxy) butyrate
UN 2184	101	Ethyl-3,3-di-(tert-butylperoxy)butyrate
UN 2185	102	Ethyl-3,3-bis-(tert-butylperoxy) butyrate
UN 2185	101	Ethyl-3,3-di-(tert-butylperoxy)butyrate
UN 2187	101	Carbon dioxide, liquefied
UN 2188	101	Arsine
UN 2189	102	Dichlorosilane
UN 2190	102	Oxygen difluoride
UN 2191	101	Sulfuryl fluoride
UN 2191	102	Sulphuryl fluoride
UN 2192	101	Germane
UN 2194	102	Selenium hexafluoride
UN 2195	102	Tellurium hexafluoride
UN 2196	101	Tungsten hexafluoride
UN 2197	102	Hydrogen iodide
UN 2198	102	Phosphorus pentafluoride
UN 2199	101	Phosphine
UN 2202	101	Hydrogen selenide
UN 2203	102	Silane
UN 2204	102	Carbonyl sulfide
UN 2205	102	Adiponitrile
UN 2206	102	Isocyanates
UN 2207	102	Isocyanates
UN 2208	101	Bleaching powder
UN 2208	102	Calcium hypochlorite mixtures
UN 2209	102	Formaldehyde
UN 2209	101	Formaldehyde solution
UN 2210	102	Maneb, *or* maneb preparation(s)
NA 2210	101	Pesticide, water reactive
UN 2211	102	Plastics moulding materials
UN 2212	102	Asbestos, blue
UN 2213	101	Paraformaldehyde
UN 2214	102	Phthalic anhydride
NA 2215	101	Maleic acid
UN 2215	101	Maleic anhydride
UN 2216	102	Fishmeal *or* fishscrap
NA 2216	101	Fish meal *or* fish scrap containing 6% to 12% water
UN 2217	102	Seed cake
UN 2218	101	Acrylic acid
UN 2219	102	Allyl glycidyl ether
UN 2220	102	Aluminium alkyl halides, in solution
UN 2221	102	Aluminium alkyl halides
UN 2222	102	Anisole
UN 2224	101	Benzonitrile
UN 2225	102	Benzene sulphonyl chloride
UN 2226	102	Benzotrichloride
UN 2227	102	n-Butyl methacrylate
UN 2228	102	Butylphenols

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2229	102	Butylphenols
UN 2230	102	Chlorinated anthracene oil
UN 2232	102	Chloroacetaldehyde
UN 2233	102	p-Chloro-o-anisidine
UN 2234	102	Chlorobenzotrifluorides
UN 2235	102	p-Chlorobenzyl chloride
UN 2236	102	3-Chloro-4-methylphenyl isocyanate
UN 2237	102	Chloronitroanilines
UN 2238	102	Chlorotoluenes
UN 2239	102	Chlorotoluidines
UN 2240	102	Chromosulphuric acid
UN 2241	102	Cycloheptane
UN 2242	102	Cycloheptene
UN 2243	102	Cyclohexyl acetate
UN 2244	102	Cyclopentanol
UN 2245	102	Cyclopentanone
UN 2246	102	Cyclopentene
UN 2247	102	n-Decane
UN 2248	102	Di-(n-butyl)amine
UN 2249	102	sym-Dichlorodimethyl ether
UN 2250	102	Dichlorophenyl isocyanates
UN 2252	102	1,2-Dimethoxyethane
UN 2253	102	N,N-Dimethylaniline
UN 2254	102	Matches
UN 2255	101	Organic peroxide, sample, n.o.s.
UN 2255	102	Organic peroxides, n.o.s.
UN 2256	102	Cyclohexene
UN 2257	102	Potassium metal
UN 2257	101	Potassium, metal *or* metallic
UN 2258	102	Propylene diamine
UN 2258	101	Propylenediamine
UN 2259	102	Triethylenetetramine
UN 2260	102	Tripropylamine
UN 2261	101	Xylenol
UN 2261	102	Xylenols
UN 2263	101	1,4-Dimethylcyclohexane
UN 2263	102	Dimethylcyclohexanes
UN 2264	102	N, N-Dimethylcyclohexylamine
UN 2265	102	N,N-Dimethylformamide
UN 2266	102	Dimethyl-N-propylamine
UN 2267	102	Dimethyl thiophosphoryl chloride
UN 2269	102	Dipropylene triamine
UN 2269	101	Iminobispropylamine
UN 2270	102	Ethylamine solution
UN 2271	102	Ethyl amyl ketone
UN 2272	102	N-Ethylaniline
UN 2273	102	2-Ethylaniline
UN 2274	102	N-Ethyl-n-benzylaniline
UN 2275	102	2-Ethylbutanol
UN 2276	102	2-Ethylhexylamine
UN 2277	102	Ethyl methacrylate
UN 2278	102	n-Heptene
UN 2279	102	Hexachlorobutadiene
UN 2280	102	Hexamethylenediamine
UN 2280	101	Hexamethylenediamine, solid
UN 2282	102	Hexanols
UN 2283	102	Isobutyl methacrylate
UN 2284	102	Isobutyronitrile
UN 2286	102	Isododecane
UN 2287	102	Isoheptene
UN 2288	102	Isohexene
UN 2289	102	Isophorondiamine
UN 2290	102	Isophorone diisocyanate
NA 2291	101	Lead chloride
UN 2291	102	Lead compounds
NA 2291	101	Lead fluoborate
NA 2291	101	Lead sulfide
NA 2291	101	Lead thiocyanate
UN 2293	102	4-Methoxy-4-methylpentan-2-one
UN 2294	102	N-Methylaniline
UN 2295	102	Methyl chloroacetate
UN 2296	102	Methyl cyclohexane
UN 2296	101	Methylcyclohexane
UN 2297	102	Methyl cyclohexanone
UN 2298	101	Cyclopentane, methyl
UN 2298	102	Methyl cyclopentane
UN 2298	101	Methylcyclopentane
UN 2299	101	Methyl dichloroacetate
UN 2300	102	2-Methyl-5-ethylpyridine
UN 2300	101	Methyl ethyl pyridine
UN 2301	102	2-Methylfuran
UN 2301	101	Methylfuran
UN 2302	102	5-Methylhexan-2-one
UN 2303	102	Isopropenylbenzene
UN 2304	102	Napthalene, molten

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2305	102	Nitrobenzenesulphonic acid
UN 2306	102	Nitrobenzotrifluoride
UN 2307	102	3-Nitro-4-chlorobenzotrifluoride
UN 2308	102	Nitrosylsulphuric acid
UN 2309	102	Octadiene
UN 2310	102	2,4-Pentanedione
UN 2311	102	Phenetidines
UN 2313	102	Picolines
UN 2315	101	Polychlorinated biphenyls
UN 2316	102	Sodium cuprocyanide
UN 2318	101	Sodium hydrosulfide, solid
UN 2318	102	Sodium hydrosulphide
UN 2319	102	Terpene hydrocarbons n.o.s.
UN 2320	102	Tetraethylenepentamine
UN 2321	102	Trichlorobenzene
UN 2322	102	Trichlorobutene
UN 2323	102	Triethyl phosphite
UN 2324	102	Triisobutylene
UN 2325	102	1,3,5-Trimethylbenzene
UN 2326	102	Trimethylcyclohexylamine
UN 2327	102	3,3,5-Trimethylhexamethylene diamine
UN 2328	102	Trimethylhexamethylene diisocyanate
UN 2329	102	Trimethyl phosphite
UN 2330	102	Undecane
UN 2331	102	Zinc chloride
UN 2331	101	Zinc chloride, solid
UN 2332	102	Acetaldehyde oxime
UN 2333	102	Allyl acetate
UN 2334	102	Allylamine
UN 2335	102	Allyl ethyl ether
UN 2336	102	Allyl formate
UN 2337	102	Phenyl mercaptan
UN 2338	102	Benzotrifluoride
UN 2339	102	2-Bromobutane
UN 2340	102	2-Bromoethyl ethyl ether
UN 2341	102	1-Bromo-3-methylbutane
UN 2342	102	Bromomethylpropanes
UN 2343	102	2-Bromopentane
UN 2344	102	Bromopropanes
UN 2345	102	3-Bromopropyne
UN 2346	102	Butanedione
UN 2346	101	Diacetyl
UN 2347	102	Butane-1-thiol
UN 2347	101	Butyl mercaptan
UN 2348	102	Butylacrylate
UN 2350	102	Butyl methyl ether
UN 2351	102	Butyl nitrite
UN 2352	102	Butyl vinyl ether
UN 2353	102	Butyryl chloride
UN 2354	102	Chloromethyl ethyl ether
UN 2356	102	2-Chloropropane
UN 2357	101	Cyclohexylamine
UN 2358	102	Cyclooctatetraene
UN 2359	102	Diallylamine
UN 2360	102	Diallylether
UN 2361	102	Diisobutylamine
UN 2362	102	1,1-Dichloroethane
UN 2363	101	Ethyl mercaptan
UN 2364	102	Propyl benzene
UN 2366	102	Diethyl carbonate
UN 2367	102	alpha-Methyl valeraldehyde
UN 2368	102	alpha-Pinene
UN 2368	101	Pinene
UN 2369	102	Ethylene glycol monobutyl ether
UN 2370	102	Hex-1-ene
UN 2371	102	Isopentenes
UN 2373	102	Diethoxymethane
UN 2375	102	Diethyl sulfide
UN 2376	102	2,3-Dihydropyran
UN 2376	101	Dihydropyran
UN 2377	102	1,1-Dimethoxyethane
UN 2379	102	1,3-Dimethylbutylamine
UN 2380	102	Dimethyldiethoxysilane
UN 2381	102	Dimethyl disulfide
UN 2382	102	Dimethylhydrazine
UN 2383	102	Dipropylamine
UN 2384	102	Dipropyl ether
UN 2385	102	Ethylisobutyrate
UN 2386	102	1-Ethyl piperidine
UN 2387	102	Fluorobenzene
UN 2388	102	Fluorotoluenes
UN 2389	101	Furan
UN 2390	102	2-Iodobutane

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2391	102	Iodomethylpropanes
UN 2392	102	Iodopropanes
UN 2393	102	Isobutyl formate
UN 2394	102	Isobutyl propionate
UN 2395	102	Isobutyryl chloride
UN 2396	102	Methacraldehyde
UN 2397	102	3-Methyl butan-2-one
UN 2398	102	Methyl-tert-butyl ether
UN 2399	102	1-Methylpiperidine
UN 2400	102	Methylisovalerate
UN 2401	102	Piperidine
UN 2402	102	Propanethiols
UN 2403	102	Isopropenyl acetate
UN 2404	102	Propionitrile
UN 2405	102	Isopropyl butyrate
UN 2406	102	Isopropyl isobutyrate
UN 2407	102	Isopropyl chloroformate
UN 2408	102	Isopropyl formate
UN 2409	102	Isopropyl propionate
UN 2410	102	1,2,3,6-Tetrahydropyridine
UN 2411	102	Butyronitrile
UN 2412	102	Tetrahydrothiophene
UN 2414	102	Thiophene
UN 2416	102	Trimethyl borate
UN 2417	102	Carbonyl fluoride
UN 2418	102	Sulphur tetrafluoride
UN 2420	102	Hexafluoroacetone
UN 2421	102	Nitrogen trioxide
NA 2422	101	Perfluoro-2-butene
NA 2426	101	Ammonium nitrate, solution
UN 2427	102	Potassium chlorate
UN 2428	102	Sodium chlorate
UN 2429	102	Calcium chlorate
UN 2431	102	o-Anisidine
UN 2432	102	N,N-Diethylaniline
UN 2433	102	Chloro-o-nitrotoluene
UN 2434	102	Dibenzyldichlorosilane
UN 2435	101	Ethyl phenyl dichlorosilane
UN 2435	102	Ethylphenyldichlorosilane
UN 2436	102	Thioacetic acid
UN 2437	102	Methylphenyldichlorosilane
UN 2438	102	Pivaloyl chloride
UN 2438	101	Trimethylacetyl chloride
UN 2439	101	Sodium bifluoride, solid
UN 2439	101	Sodium bifluoride, solution
UN 2439	102	Sodium hydrogen fluoride
UN 2440	102	Stannic chloride pentahydrate
UN 2441	102	Titanium trichloride
UN 2442	102	Trichloroacetyl chloride
UN 2443	102	Vanadium oxitrichloride
UN 2443	101	Vanadium oxytrichloride
NA 2443	101	Vanadium oxytrichloride and titanium tetrachloride mixture
UN 2444	101	Vanadium tetrachloride
UN 2445	102	Lithium alkyls
UN 2446	102	Nitrocresols
UN 2447	102	Phosphorus white, molten
UN 2448	102	Sulphur, molten
NA 2449	101	Ammonium oxalate
NA 2449	101	Cupric oxalate
UN 2449	102	Oxalates
UN 2451	101	Nitrogen trifluoride
UN 2456	102	2-Chloropropene
UN 2456	101	2-Chloropropene
UN 2457	101	2,3-Dimethylbutane
UN 2458	101	Hexadiene
UN 2459	102	2-Methyl-1-butene
UN 2460	102	2-Methyl-2-butene
NA 2460	101	Methyl butene
UN 2461	101	Methylpentadiene
UN 2462	101	Methyl pentane
UN 2462	102	Methylpentanes
UN 2463	102	Aluminium hydride
UN 2463	101	Aluminum hydride
UN 2464	101	Beryllium nitrate
UN 2465	102	Dichloroisocyanuric acid
NA 2465	101	Potassium dichloro-s-triazinetrione
UN 2465	101	Sodium dichloro-s-triazinetrione
UN 2466	102	Potassium superoxide
UN 2467	102	Sodium percarbonates
UN 2468	102	Trichloroisocyanuric acid
UN 2468	101	Trichloro-s-triazinetrione
NA 2468	101	(mono-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2469	102	Zinc bromate
UN 2470	102	Benzyl cyanide
UN 2471	102	Osmium tetroxide
UN 2473	102	Sodium arsanilate
UN 2474	101	Thiophosgene
UN 2475	102	Vanadium trichloride
UN 2477	102	Methyl isothiocyanate
UN 2478	102	Isocyanates
UN 2480	102	Methyl isocyanate
UN 2481	102	Ethyl isocyanate
UN 2482	102	n-Propyl isocyanate
UN 2483	102	Isopropyl isocyanate
UN 2484	102	tert-Butyl isocyanate
UN 2485	101	n-Butyl isocyanate
UN 2485	102	n-Butyl isocyanate
UN 2486	102	Isobutyl isocyanate
UN 2487	102	Phenyl isocyanate
UN 2488	102	Cyclohexyl isocyanate
UN 2489	102	Diphenylmethane diisocyanate
UN 2490	101	Dichloroisopropyl ether
UN 2491	102	Ethanolamine
UN 2491	101	Monoethanolamine
UN 2493	101	Hexamethyleneimine
UN 2495	101	Iodine pentafluoride
UN 2496	101	Propionic anhydride
UN 2497	102	Sodium phenolate
UN 2497	101	Sodium phenolate, solid
UN 2498	102	1,2,3,6-Tetrahydrobenzaldehyde
UN 2498	101	1,2,3,6-Tetrahydrobenzaldehyde
UN 2501	102	Tris-(1-aziridinyl)phosphine oxide
UN 2501	101	Tris-(1-aziridinyl) phosphine oxide
UN 2502	101	Valeryl chloride
UN 2502	102	Valeryl chlorides
UN 2503	102	Zirconium tetrachloride
UN 2503	101	Zirconium tetrachloride, solid
UN 2504	101	Acetylene tetrabromide
UN 2505	101	Ammonium fluoride
UN 2506	101	Ammonium hydrogen sulfate
UN 2507	102	Chloroplatinic acid
UN 2507	101	Chloroplatinic acid, solid
UN 2508	101	Molybdenum pentachloride
UN 2509	101	Potassium hydrogen sulfate, solid
UN 2511	102	Chloropropionic acid
UN 2512	102	Aminophenols
UN 2513	102	Bromoacetyl bromide
UN 2514	101	Bromobenzene
UN 2515	102	Bromoform
UN 2516	102	Carbon tetrabromide
UN 2517	101	Difluoromonochloroethane
UN 2518	102	1,5,9-Cyclododecatriene
UN 2520	102	Cyclooctadienes
UN 2521	102	Diketene
UN 2522	102	Dimethylaminoethyl methacrylate
UN 2524	102	Ethyl orthoformate
UN 2525	102	Ethyl oxalate
UN 2526	102	Furfurylamine
UN 2527	102	Isobutyl acrylate
UN 2528	102	Isobutylisobutyrate
UN 2529	101	Isobutyric acid
UN 2530	101	Isobutyric anhydride
UN 2531	102	Methacrylic acid
UN 2533	102	Methyl trichloroacetate
UN 2534	102	Methyl chlorosilane
UN 2535	102	Methylmorpholine
UN 2536	102	Methyltetrahydrofuran
UN 2538	102	Nitronapthalene
UN 2541	102	Terpinolene
UN 2542	102	Tributylamine
UN 2545	101	Hafnium metal, dry.
UN 2545	102	Hafnium metal powder, dry
UN 2546	102	Titanium metal powder, dry
NA 2546	101	Titanium metal powder, dry or wet
UN 2547	102	Sodium superoxide
UN 2550	102	Ethyl methyl ketone peroxide(s)
UN 2550	101	Methyl ethyl ketone peroxide
UN 2551	101	tert-Butyl peroxydiethylacetate
UN 2551	102	tert-Butyl perdiethylacetate
UN 2552	102	Hexafluoroacetone hydrate
UN 2553	102	Coal tar naphtha
NA 2553	101	Coal tar naptha
UN 2553	101	Naphtha
UN 2554	102	Methyl allyl chloride
UN 2555	102	Nitrocellulose
NA 2555	101	Nitrocellulose, colloided, granular or flake, wet with not less than 20% water

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
NA 2555	101	Nitrocellulose, wet with not less than 20% water
UN 2556	102	Nitrocellulose
NA 2556	101	Nitrocellulose, wet with not less than 30% alcohol or solvent
NA 2557	101	Lacquer base, or Lacquer chips, dry
UN 2557	102	Nitrocellulose
UN 2558	102	1-Bromo-2,3-epoxypropane
UN 2562	101	tert-Butyl peroxyisobutyrate
UN 2562	102	tert-Butyl perisobutyrate
UN 2564	102	Trichloroacetic acid
UN 2564	101	Trichloroacetic acid solution
UN 2565	102	Dicyclohexylamine
UN 2567	101	Sodium pentachlorophenate
NA 2570	101	Cadmium acetate
NA 2570	101	Cadmium bromide
NA 2570	101	Cadmium chloride
UN 2570	102	Cadmium compounds
UN 2572	102	Phenylhydrazine
UN 2573	102	Thallium chlorate
UN 2574	102	Tricresylphosphate
UN 2582	101	Ferric chloride solution
UN 2584	101	Alkanesulfonic acid
NA 2584	101	Dodecylbenzenesulfonic acid
NA 2584	101	Toluene sulfonic acid, liquid
NA 2588	101	Insecticide, dry, n.o.s.
UN 2588	102	Pesticides
UN 2590	102	Asbestos, white
UN 2592	101	Distearyl peroxydicarbonate
UN 2592	102	Distearylperoxydicarbonate
UN 2593	102	Bis-(2-methylbenzoyl)peroxide
UN 2593	101	Di-(2-methylbenzoyl)peroxide
UN 2594	101	tert-Butyl peroxyneodecanoate
UN 2594	102	tert-Butylperneodecanoate
UN 2595	101	Dimyristyl peroxydicarbonate
UN 2595	102	Dimyristylperoxydicarbonate
UN 2596	102	3-tert-Butylperoxy-3-phenyl phthalide
UN 2596	101	3-tert-Butyl peroxy-3-phenylphthalide
UN 2597	102	Bis-(3,5,5-trimethyl-1,2-dioxolanyl-3)peroxide
UN 2597	101	Di-(3,5,5-trimethyl-1,2-dioxolanyl-3)peroxide
UN 2598	102	Ethyl-3,3-bis(tert-butylperoxy)butyrate
UN 2598	101	Ethyl-3,3-di-(tert-butylperoxy)butyrate
UN 2602	101	Dichlorodifluoromethane and difluoroethane mixture
UN 2603	102	Cycloheptatriene
UN 2604	102	Boron trifluoride diethyl etherate
UN 2605	102	Methoxymethyl isocyanate
UN 2606	102	Methyl orthosilicate
UN 2607	102	Acrolein dimer
UN 2608	102	Nitropropanes
UN 2610	102	Triallylamine
UN 2612	102	Methyl propyl ether
UN 2614	102	Methallyl alcohol
UN 2615	102	Ethyl propyl ether
UN 2616	102	Triisopropyl borate
UN 2617	102	Methyl cyclohexanol
UN 2618	102	Vinyl Toluenes
UN 2619	102	Benzyl dimethylamine
UN 2621	102	Acetyl methyl carbinol
UN 2622	102	Glycidaldehyde
NA 2626	101	Chloric acid
UN 2630	101	Sodium selenite
UN 2646	101	Hexachlorocyclopentadiene
UN 2655	102	Potassium silicofluoride
UN 2656	101	Quinoline
UN 2670	102	Cyanuric chloride
UN 2672	102	Ammonia solutions
NA 2672	101	Ammonium hydroxide
UN 2674	102	Sodium silicofluoride
NA 2683	101	Ammonium hydrosulfide solution
UN 2683	101	Ammonium sulfide solution
UN 2686	102	Diethylaminoethanol
UN 2692	101	Boron tribromide
NA 2693	101	Ammonium bisulfite, solid
NA 2693	101	Ammonium bisulfite solution
NA 2693	101	Calcium hydrogen sulfite solution
NA 2693	101	Potassium metabisulfite
NA 2693	101	Sodium hydrogen sulfite, solid
NA 2693	101	Sodium metabisulfite
UN 2703	101	Isopropyl mercaptan
UN 2704	101	Propyl mercaptan
UN 2706	102	Diethylcarbinol

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
UN 2707	102	Dimethyldioxanes
UN 2708	102	Butoxyl
UN 2709	102	Butyl benzenes
UN 2710	102	Butyrone
UN 2711	102	Dibromobenzene
UN 2725	101	Nickel nitrate
UN 2728	101	Zirconium nitrate
UN 2733	102	Alkylamines and polyamines
UN 2740	102	n-Propyl chloroformate
UN 2749	102	Tetramethylsilane
UN 2752	102	1,2-Epoxy-3-ethylxy propane
UN 2755	101	3-Chloroperoxybenzoic acid
UN 2755	102	m-Chloroperoxybenzoic acid
UN 2756	101	Organic peroxide, mixture.
UN 2756	102	Organic peroxides, mixture
UN 2757	101	Carbamate pesticide
NA 2757	101	Carbaryl
NA 2757	101	Carbofuran
NA 2757	101	Mercaptodimethur
NA 2757	101	Mexacarbate
UN 2758	101	Carbamate pesticide
UN 2759	101	Arsenical pesticide
NA 2759	101	Bordeaux arsenite, liquid
NA 2759	101	Bordeaux arsenite, solid
UN 2760	101	Arsenical pesticide
NA 2761	101	Aldrin
NA 2761	101	Aldrin, cast solid
NA 2761	101	Aldrin mixture, dry
NA 2761	101	Aldrin mixture, dry, with 65% or less aldrin
NA 2761	101	DDT or Dichlorodiphenyltrichloroethane
NA 2761	101	Dichlone
NA 2761	101	Dieldrin
NA 2761	101	Endosulfan
NA 2761	101	Endrin
NA 2761	101	Heptachlor
NA 2761	101	Kelthane
NA 2761	101	Kepone
NA 2761	101	Lindane
NA 2761	101	Methoxychlor
UN 2761	101	Organochlorine pesticide
NA 2761	101	TDE
NA 2761	101	Toxaphene
NA 2762	101	Aldrin mixture, liquid
NA 2762	101	Aldrin mixture, liquid, with 60% or less aldrin
NA 2762	101	Chlordane, liquid
UN 2762	101	Organochlorine pesticide
UN 2763	101	Triazine pesticide
UN 2764	101	Triazine pesticide
NA 2765	101	2,4-Dichlorophenoxyacetic acid
NA 2765	101	2,4-Dichlorophenoxyacetic acid ester
UN 2765	101	Phenoxy pesticide
NA 2765	101	Propargite
NA 2765	101	2,4,5-Trichlorophenoxyacetic acid
NA 2765	101	2,4,5-Trichlorophenoxyacetic acid amine, ester, or salt
NA 2765	101	2,4,5-Trichlorophenoxypropionic acid
NA 2765	101	2,4,5-Trichlorophenoxypropionic acid ester
UN 2766	101	Phenoxy pesticide
NA 2767	101	Diuron
UN 2767	101	Phenylurea pesticide
UN 2768	101	Phenylurea pesticide
UN 2769	101	Benzoic derivative pesticide
NA 2769	101	Dicamba
NA 2769	101	Dichlobenil
UN 2770	101	Benzoic derivative pesticide
UN 2771	101	Dithiocarbamate pesticide
NA 2771	101	Thiram
UN 2772	101	Dithiocarbamate pesticide
UN 2773	101	Phthalimide derivative pesticide
UN 2774	101	Phthalimide derivative pesticide
UN 2775	101	Copper based pesticide
UN 2776	101	Copper based pesticide
UN 2777	101	Mercury based pesticide
UN 2778	101	Mercury based pesticide
UN 2779	101	Substituted nitrophenol pesticide
UN 2780	101	Substituted nitrophenol pesticide
UN 2781	101	Bipyridilium pesticide
NA 2781	101	Diquat
UN 2782	101	Bipyridilium pesticide
NA 2783	101	Azinphos methyl
NA 2783	101	Chlorpyrifos

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
NA 2783 ...	101	Coumaphos
NA 2783 ...	101	Diazinon
NA 2783 ...	101	Dichlorvos
NA 2783 ...	101	Disulfoton
NA 2783 ...	101	Ethion
NA 2783 ...	101	Hexaethyl tetraphosphate mixture, dry
NA 2783 ...	101	Hexaethyl tetraphosphate mixture, liquid
NA 2783 ...	101	Malathion
NA 2783 ...	101	Methyl parathion, liquid
NA 2783 ...	101	Methyl parathion mixture, dry
NA 2783 ...	101	Methyl parathion mixture, liquid
NA 2783 ...	101	Methyl parathion mixture, liquid, (containing 25% or less methyl parathion)
NA 2783 ...	101	Mevinphos
UN 2783 ...	101	Mipafox
NA 2783 ...	101	Naled
NA 2783 ...	101	Organic phosphate mixture, Organic phosphate compound mixture, *or* Organic phosphorus compound mixture; liquid
NA 2783 ...	101	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound; liquid
UN 2783 ...	101	Organophosphorus pesticide
NA 2783 ...	101	Parathion, liquid
NA 2783 ...	101	Parathion mixture, dry
NA 2783 ...	101	Parathion mixture, liquid
NA 2783 ...	101	Phencapton
NA 2783 ...	101	Tetraethyl pyrophosphate, liquid
NA 2783 ...	101	Tetraethyl pyrophosphate mixture, dry
NA 2783 ...	101	Tetraethyl pyrophosphate mixture, liquid
NA 2783 ...	101	Trichlorfon
UN 2784 ...	101	Organophosphorus pesticide
UN 2785 ...	102	4-Thiopentenal
UN 2786 ...	101	Organotin pesticide
UN 2787 ...	101	Organotin pesticide
UN 2789 ...	101	Acetic acid, glacial
UN 2790 ...	101	Acetic acid
NA 2791 ...	101	Aircraft rocket engine
UN 2792 ...	101	Aircraft rocket engine igniter
UN 2793 ...	102	Iron swarf
NA 2793 ...	101	Magnesium scrap
NA 2793 ...	101	Metal borings, shavings, turnings, *or* cuttings
NA 2794 ...	101	Battery charger with electrolyte (acid) *or* alkaline battery fluid
NA 2794 ...	101	Battery, electric storage, wet
NA 2794 ...	101	Battery, electric storage, wet, with automobile, auto parts, engine
NA 2794 ...	101	Battery, electric storage, wet, with containers of electrolyte (acid) *or* alkaline battery fluid
UN 2796 ...	101	Electrolyte (acid) battery fluid
NA 2797 ...	101	Alkaline battery fluid
NA 2797 ...	101	Alkaline battery fluid with empty storage battery
NA 2797 ...	101	Electrolyte (acid) *or* alkaline battery fluid, packed with dry-storage battery
UN 2798 ...	101	Benzene phosphorus dichloride
UN 2799 ...	101	Benzene phosphorus thiodichloride
NA 2801 ...	101	Coal tar dye, liquid
UN 2801 ...	101	Dye intermediate, liquid
UN 2802 ...	101	Copper chloride
UN 2803 ...	101	Gallium metal, liquid
UN 2803 ...	101	Gallium metal, solid
UN 2805 ...	101	Lithium hydride in fused solid form
UN 2806 ...	101	Lithium nitride
UN 2807 ...	101	Magnetized material
NA 2809 ...	101	Mercury, metallic
NA 2810 ...	101	Arsenious and mercuric iodide solution
NA 2810 ...	101	Compound, tree *or* weed killing, liquid
NA 2810 ...	101	Drugs, n.o.s. liquid
NA 2810 ...	101	Poisonous liquid, n.o.s. *or* Poison B, liquid, n.o.s.
UN 2810 ...	102	Poisonous liquids, n.o.s.
(UN 2810).	102	Sodium fluoride
NA 2811 ...	101	Drugs, n.o.s. solid

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
NA 2811 ...	101	Flue dust, poisonous
NA 2811 ...	101	Lead fluoride
NA 2811 ...	101	Lead iodide
NA 2811 ...	101	Lead stearate
NA 2811 ...	101	Poisonous solid, n.o.s. *or* Poison B, solid, n.o.s.
UN 2811 ...	102	Poisonous solids, n.o.s.
NA 2811 ...	101	Selenium oxide
(UN 2811).	102	Silicofluorides
UN 2812 ...	101	Sodium aluminate, solid
NA 2813 ...	101	Lithium acetylide-ethylene diamine complex
UN 2813 ...	101	Water reactive solid, n.o.s.
NA 2814 ...	101	Etiologic agent, n.o.s.
UN 2815 ...	101	N-Aminoethylpiperazine
UN 2817 ...	101	Ammonium hydrogen fluoride solution
UN 2818 ...	101	Ammonium polysulfide solution
UN 2819 ...	101	Amyl acid phosphate
UN 2820 ...	101	Butyric acid
NA 2821 ...	101	Phenol, liquid *or* solution
UN 2823 ...	101	Crotonic acid
UN 2826 ...	101	Ethyl chlorothioformate
UN 2830 ...	101	Lithium ferrosilicon
UN 2831 ...	101	1,1,1-Trichloroethane
UN 2835 ...	101	Sodium aluminum hydride
UN 2837 ...	101	Sodium hydrogen sulfate solution
UN 2845 ...	101	Pyrophoric liquid, n.o.s. *or* Pyroforic liquid, n.o.s.
UN 2854 ...	101	Ammonium silicofluoride
UN 2855 ...	101	Zinc silicofluoride
UN 2857 ...	101	Refrigerating machine
UN 2859 ...	102	Ammonium metavanadate
UN 2860 ...	102	Vanadium trioxide
UN 2861 ...	102	Ammonium polyvanadate
UN 2862 ...	101	Vanadium pentoxide
UN 2863 ...	102	Sodium-ammonium-vanadate
UN 2864 ...	102	Potassium metavanadate
UN 2867 ...	101	Ink
UN 2868 ...	101	Resin solution
UN 2876 ...	101	Resorcinol
UN 2880 ...	101	Calcium hypochlorite, hydrated
UN 2883 ...	101	2,2-Di-(tert-butylperoxy)propane
UN 2884 ...	101	2,2-Di-(tert-butylperoxy)propane
UN 2885 ...	101	1,1-Di-(tert-butylperoxy)cyclohexane
UN 2886 ...	101	tert-Butyl peroxy-2-ethylhexanoate
UN 2887 ...	101	tert-Butyl peroxy-2-ethylhexanoate
UN 2888 ...	101	tert-Butyl peroxy-2-ethylhexanoate
UN 2889 ...	101	Diisotridecyl peroxydicarbonate
UN 2890 ...	101	tert-Butyl peroxybenzoate
UN 2891 ...	101	tert- Amyl peroxyneodecanoate
UN 2892 ...	101	Dimyristyl peroxydicarbonate
UN 2893 ...	101	Lauroyl peroxide
UN 2894 ...	101	Di-(4-tert-butylcyclohexyl)peroxydicarbonate
UN 2895 ...	101	Dicetyl peroxydicarbonate
UN 2896 ...	101	Cyclohexanone peroxide
UN 2897 ...	101	1,1-Di-(tert-butylperoxy)cyclohexane
UN 2898 ...	101	tert-Amyl peroxy-2-ethylhexanoate
UN 2899 ...	101	Organic peroxide, trial quantity, n.o.s.
NA 2902 ...	101	Insecticide, liquid, n.o.s.
UN 2910 ...	101	Radioactive material, limited quantity, n.o.s.
UN 2911 ...	101	Radioactive device, n.o.s.
UN 2912 ...	101	Radioactive material, low specific activity *or* LSA, n.o.s.
UN 2918 ...	101	Radioactive material, fissile, n.o.s.
UN 2922 ...	101	Corrosive liquid, poisonous, n.o.s.
NA 2922 ...	101	Dimethyl chlorothiophosphate
NA 2922 ...	101	Sodium hydrosulfide, solution
NA 2924 ...	101	Dichlorobutene
UN 2924 ...	101	Flammable liquid, corrosive, n.o.s.
UN 2925 ...	101	Flammable solid, corrosive, n.o.s.
UN 2926 ...	101	Flammable solid, poisonous, n.o.s.
UN 2928 ...	101	Poisonous solid, corrosive, n.o.s.
NA 9011 ...	101	Camphene
NA 9018 ...	101	Dichlorodifluoroethylene
NA 9026 ...	101	Dinitrocyclohexylphenol
NA 9035 ...	101	Gas identification set
NA 9035 ...	101	Poisonous liquid *or* gas, n.o.s.
NA 9037 ...	101	Hexachloroethane
NA 9053 ...	101	Oiled material
NA 9069 ...	101	Tetramethylmethylenediamine
NA 9077 ...	101	Adipic acid

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
NA 9078 ...	101	Aluminum sulfate, solid
NA 9079 ...	101	Ammonium acetate
NA 9080 ...	101	Ammonium benzoate
NA 9081 ...	101	Ammonium bicarbonate
NA 9083 ...	101	Ammonium carbamate
NA 9084 ...	101	Ammonium carbonate
NA 9085 ...	101	Ammonium chloride
NA 9086 ...	101	Ammonium chromate
NA 9087 ...	101	Ammonium citrate
NA 9088 ...	101	Ammonium fluoborate
NA 9089 ...	101	Ammonium sulfamate
NA 9090 ...	101	Ammonium sulfite
NA 9091 ...	101	Ammonium tartrate
NA 9092 ...	101	Ammonium thiocyanate
NA 9093 ...	101	Ammonium thiosulfate
NA 9094 ...	101	Benzoic acid
NA 9095 ...	101	n-Butyl phthalate
NA 9096 ...	101	Calcium chromate
NA 9097 ...	101	Calcium dodecylbenzenesulfonate
NA 9099 ...	101	Captan
NA 9100 ...	101	Chromic sulfate
NA 9101 ...	101	Chromic acetate
NA 9102 ...	101	Chromous chloride
NA 9103 ...	101	Cobaltous bromide
NA 9104 ...	101	Cobaltous formate
NA 9105 ...	101	Cobaltous sulfamate
NA 9106 ...	101	Cupric acetate
NA 9109 ...	101	Cupric sulfate
NA 9110 ...	101	Cupric sulfate, ammoniated
NA 9111 ...	101	Cupric tartrate
NA 9117 ...	101	Ethylenediaminetetraacetic acid
NA 9118 ...	101	Ferric ammonium citrate
NA 9119 ...	101	Ferric ammonium oxalate
NA 9120 ...	101	Ferric fluoride
NA 9121 ...	101	Ferric sulfate
NA 9122 ...	101	Ferrous ammonium sulfate
NA 9125 ...	101	Ferrous sulfate
NA 9126 ...	101	Fumaric acid
NA 9127 ...	101	Isopropanolamine dodecylbenzenesulfonate
NA 9134 ...	101	Lithium chromate
NA 9137 ...	101	Naphthenic acid
NA 9138 ...	101	Nickel ammonium sulfate
NA 9139 ...	101	Nickel chloride
NA 9140 ...	101	Nickel hydroxide
NA 9141 ...	101	Nickel sulfate
NA 9142 ...	101	Potassium chromate
NA 9145 ...	101	Sodium chromate
NA 9146 ...	101	Sodium dodecylbenzenesulfonate
NA 9147 ...	101	Sodium phosphate, dibasic
NA 9148 ...	101	Sodium phosphate, tribasic
NA 9149 ...	101	Strontium chromate
NA 9151 ...	101	Triethanolamine dodycylbenzenesulfonate
NA 9152 ...	101	Vanadyl sulfate
NA 9153 ...	101	Zinc acetate
NA 9154 ...	101	Zinc ammonium chloride
NA 9155 ...	101	Zinc borate
NA 9156 ...	101	Zinc bromide
NA 9157 ...	101	Zinc carbonate
NA 9158 ...	101	Zinc fluoride
NA 9159 ...	101	Zinc formate
NA 9160 ...	101	Zinc phenolsulfonate
NA 9161 ...	101	Zinc sulfate
NA 9162 ...	101	Zirconium potassium fluoride
NA 9163 ...	101	Zirconium sulfate
NA 9170 ...	101	Thorium metal, pyrophoric
NA 9171 ...	101	Thorium nitrate
NA 9173 ...	101	Uranium hexafluoride, fissile
NA 9174 ...	101	Uranium hexafluoride, low specific activity
NA 9175 ...	101	Uranium metal, pyrophoric
NA 9177 ...	101	Uranyl nitrate, solid
NA 9178 ...	101	Uranyl nitrate hexahydrate solution
NA 9180 ...	101	Uranyl acetate
NA 9181 ...	101	Radioactive material, n.o.s.
NA 9182 ...	101	Radioactive material, special form, n.o.s.
NA 9183 ...	101	Organic peroxide, liquid, *or* solution, n.o.s.
NA 9184 ...	101	Pyrethrins
NA 9185 ...	101	Plutonium nitrate solution
NA 9188 ...	101	Hazardous substance, liquid *or* solid, n.o.s.
NA 9189 ...	101	Hazardous waste, liquid *or* solid, n.o.s.

APPENDIX A - IDENTIFICATION NUMBER CROSS REFERENCE TO PROPER SHIPPING NAMES IN §172.101 AND §172.102—Continued

This listing is provided for information purposes only.

(1) Identification Number	(2) Source 172.***	(3) Description
NA 9190 ...	101	Ammonium permanganate
NA 9191 ...	101	Chlorine dioxide hydrate, frozen
NA 9193 ...	101	Oxidizer, corrosive, liquid, n.o.s.
NA 9194 ...	101	Oxidizer, corrosive, solid, n.o.s.
NA 9195 ...	101	Metal alkyl solution, n.o.s.
NA 9199 ...	101	Oxidizer, poisonous, liquid, n.o.s.
NA 9200 ...	101	Oxidizer, poisonous, solid, n.o.s.
NA 9201 ...	101	Antimony trioxide

15. In § 172.200 the introductory text of paragraph (b) is revised and paragraph (c) is added to read as follows:

§ 172.200 Applicability.

* * * * *

(b) This subpart does not apply to any material, other than a hazardous waste or a hazardous substance, that is—

* * * * *

(c) The requirement of § 172.202(a)(3) pertaining to the display of identification numbers on shipping papers does not apply prior to July 1, 1981.

16. In § 172.201 paragraphs (a)(1)(ii), (a)(1)(iii), the introductory text of (a)(4), and (a)(4)(i) are revised to read as follows:

§ 172.201 General entries.

(a) * * *

(1) * * *

(ii) Must be entered in a color that clearly contrasts with any description on the shipping paper of a material not subject to the requirements of this subchapter, except that a description on a reproduction of a shipping paper may be highlighted, rather than printed, in a contrasting color (the provisions of this paragraph apply only to the basic description required by §§ 172.202(a) (1), (2), and (3)), or

(iii) Must be identified by the entry of an "X" (or "RQ" if appropriate) placed before the proper shipping name in a column captioned "HM".

* * * * *

(4) A shipping paper may contain additional information concerning the material provided the information is not inconsistent with the required description. Unless otherwise permitted or required by this subpart, additional information must be placed after the basic description required by § 172.202(a).

(i) When appropriate, the entries "IMCO" or "IMCO Class" may be entered immediately before or immediately following the class entry in the basic description.

* * * * *

17. In § 172.202, paragraph (a) is amended, paragraphs (b) and (c) are revised and paragraph (d) is added to read as follows:

§ 172.202 Description of hazardous material on shipping papers.

(a) The basic description of a hazardous material on a shipping paper must include—

(1) The proper shipping name prescribed for the material in the Hazardous Materials Table in § 172.101 or the Optional Hazardous Materials Table in § 172.102;

(2) The hazard class prescribed for the material in the same Table. Inclusion of the hazard class is not required when the words of the proper shipping name contain the key word or words of the class, such as Flammable liquid; Poison B, liquid; Radioactive device; or Corrosive liquid; and

(3) The identification number (proceeded by "UN" or "NA" as appropriate) prescribed for the material in the same Table.

* * * * *

(b) Except as provided in this subpart, the basic description specified in paragraphs (a) (1), (2) and (3) of this section must be shown in sequence. For example: "Gasoline, Flammable liquid, UN 1203."

(c) The total quantity of the material covered by one description must appear before or after, or both before and after, the basic description required and authorized by this subpart.

(1) Abbreviations may be used to specify the type of packaging and weight or volume. For example: "40 cyl. Nitrogen, Nonflammable gas, UN 1066, 800 pounds"; "1 box Cement, liquid, n.o.s., Flammable liquid, NA 1133, 25 lbs."

(2) The type of packaging may be entered in any appropriate manner.

(d) Technical and chemical group names may be entered in parentheses between the proper shipping name and hazard class.

18. In § 172.203 paragraphs (d), (1)(ii), (e), and (i)(2) are revised; paragraphs (c), (j) and (k) are added to read as follows:

§ 172.203 Additional description requirements.

* * * * *

(c) *Hazardous substances.*

(1) If the proper shipping name for a mixture or solution that is a hazardous substance does not identify the constituents making it a hazardous substance, the name or names of such constituents shall be entered in association with the basic description. This requirement also applies to descriptions from the Optional Table in § 172.102.

(2) The letters "RQ" shall be entered on the shipping paper either before or after the basic description required by § 172.202 for each hazardous substance (see definition in § 171.8). For example: "RQ, Cresol, Corrosive material, NA 2076"; or "Adipic acid, ORM-E, NA 9077, RQ."

(d) * * *

(1) * * *

(ii) A description of the physical and chemical form of the material, if the material is not in special form (generic chemical description is acceptable for chemical form).

* * * * *

(e) *Empty packagings:*

(1) Except for a tank car or any packaging that contains a hazardous substance, the description on the shipping paper for an empty packaging containing the residue of a hazardous material may contain the word(s) "EMPTY" or "EMPTY: Last contained * * *" followed by the name of the hazardous material last contained in the packaging. This entry may be before or after the basic description.

(2) For empty tank cars, see § 174.25(c), of this subchapter.

(3) If a packaging, including a tank car, contains a residue that is a hazardous substance, the description on the shipping paper shall be prefaced with the phrase "EMPTY: Last contained * * *" and shall have "RQ" entered before or after the basic description.

* * * * *

(i) * * *

(2) The shipping paper for a hazardous material offered for transportation by vessel to any country outside the United States must have in parentheses the technical name of the material immediately following the proper shipping name when the material is described by an n.o.s. entry in § 172.101 or § 172.102. For example: "Corrosive liquid, n.o.s. (Caprylyl chloride), UN 1760." If the material is a mixture of two or more hazardous materials, the names of at least two components most predominately contributing to the hazard or hazards of the mixture shall be entered in parentheses. For example: "Flammable liquid, corrosive, n.o.s. (Methyl alcohol, Potassium hydroxide), UN 2924." The provisions of this paragraph do not apply if—

(i) The n.o.s. description for the material (other than a mixture of hazardous materials of different classes meeting the definition of more than one

hazard class) contains the name of the chemical element or group which is primarily responsible for the material being included in the hazard class indicated. For example: "Mercury compound, n.o.s., solid, Poison B, UN 2025."

(ii) The n.o.s. description for the material (which is a mixture of hazardous materials of different classes meeting the definition of more than one hazard class) contains the name of the chemical element or group responsible for the material meeting the definition of one of these classes. In such cases, only the technical name of the component that is not appropriately identified in the n.o.s. description shall be entered in parentheses.

For example: "Carbamate pesticide, liquid, n.o.s. (contains Xylene), Flammable liquid, UN 2758."

* * * * *

(j) *Dangerous When Wet.* The words "Dangerous When Wet" shall be entered on the shipping paper in association with the basic description when a package covered by the basic description is required to be labeled with a DANGEROUS WHEN WET label.

(k) *Poisonous materials.* Notwithstanding the class to which a material is assigned—

(1) If the name of the compound or principal constituent that causes the material to meet the definition of a poison (according to this subchapter) is not included in the proper shipping name for the material, the name of that compound or constituent shall be entered on the shipping paper in association with the shipping description for the material. The name of the compound or principal constituent may be either a technical name or any name for the material that is listed in the NIOSH Registry. This subparagraph does not apply to—

(i) A material having a proper shipping name that includes the chemical element or group which causes the material to be a poison.

(ii) Limited Quantities.

(2) If the material in a package meets the definition of a poison according to this subchapter, and the fact that it is a poison is not disclosed in the shipping name or class entry, the word "Poison" shall be entered on the shipping paper in association with the shipping description.

(3) The provisions of paragraphs (k)(1) and (2) of this section do not apply—

(i) To consumer commodities, ORM-D, or

(ii) To compounds or principal constituents that would cause death by corrosive destruction to tissue rather than by systemic poisoning.

(iii) Prior to July 1, 1981.

19. In § 172.204, the note following paragraph (a) is deleted and a new note is added; the introductory text to paragraph (b)(1) is revised to read as follows:

§ 172.204 Shipper's certification.

(a) * * *

Note.—In line one of the certification in paragraph (a) of this section, the words "herein-named" may be substituted for the words "above-named."

(b) * * *

(1) Except for a hazardous waste, no certification is required for a hazardous material offered for transportation by motor vehicle and transported—

* * * * *

20. Section 172.205 is added to read as follows:

§ 172.205 Hazardous waste manifest.

(a) No person may offer, transport, transfer, or deliver a hazardous waste (waste) unless a hazardous waste manifest (manifest) is prepared, signed, carried, and given as required of that person by this section.

(b) The shipper (generator) shall prepare the manifest in accordance with 40 CFR Part 262.

(c) The original copy of the manifest must be dated by, and bear the handwritten signature of, the person representing—

(1) The shipper (generator) of the waste at the time it is offered for transportation, and

(2) The initial carrier accepting the waste for transportation.

(d) A copy of the manifest must be dated by, and bear the handwritten signature of the person representing—

(1) Each subsequent carrier accepting the waste for transportation, at the time of acceptance, and

(2) The designated facility receiving the waste, upon receipt.

(e) A copy of the manifest bearing all required dates and signatures must be—

(1) Given to a person representing each carrier accepting the waste for transportation,

(2) Carried during transportation in the same manner as required by this subchapter for shipping papers,

(3) Given to a person representing the designated facility receiving the waste,

(4) Returned to the shipper (generator) by the carrier that transported the waste from the United States to a foreign destination with a notation of the date of departure from the United States, and

(5) Retained by the shipper (generator) and by the initial and each subsequent carrier for three years from the date the waste was accepted by the initial carrier. Each retained copy must bear all required signatures and dates up to and including those entered by the next person who received the waste.

(f) The requirements of paragraphs (d) and (e) of this section do not apply to a rail carrier when waste is delivered to a designated facility by railroad if—

(1) All of the information required to be entered on the manifest (except generator and carrier identification numbers and the generator's certification) is entered on the shipping paper carried in accordance with § 174.26(c) of this subchapter;

(2) The delivering rail carrier obtains and retains a receipt for the waste that is dated by and bears the handwritten signature of the person representing the designated facility; and

(3) A copy of the shipping paper is retained for three years by each railroad transporting the waste.

(g) The person delivering a hazardous waste to an initial rail carrier shall send a copy of the manifest, dated and signed by a representative of the rail carrier, to the person representing the designated facility.

(h) A hazardous waste manifest required by 40 CFR Part 262, containing all of the information required by this subpart, may be used as the shipping paper required by this subpart.

Subpart D—Marking

21. Section 172.300 is revised to read as follows:

§ 172.300 General marking requirements.

(a) Except as provided by this subchapter, each person who offers a package containing a hazardous material for transportation shall mark the package with the proper shipping name and identification number assigned to the material in § 172.101 or § 172.102.

(b) When it has been determined by the shipper that a package has been previously marked as required for the material it contains, it need not be remarked. (For empty packagings, see § 173.29 of this subchapter.)

(c) This section does not apply to—

(1) A portable tank, cargo tank, or tank car,

(2) The display of identification numbers on packages containing Limited Quantities (see § 171.8 of this subchapter), and

(3) The display of identification numbers on packages prior to July 1, 1983.

22. In § 172.316 the introductory text of paragraph (a) and paragraph (c) are

revised; paragraph (a)(7) is added to read as follows:

§ 172.316 Packagings containing material classed as ORM.

(a) Each package containing a material classed as ORM-A, B, C, D, or E must be plainly, durably, and legibly marked on at least one side or end with the appropriate ORM designation immediately following or below the proper shipping name of the material. The appropriate ORM designation must be placed within a rectangle that is approximately ¼ inch (6.3 mm.) larger on each side than the designation. The appropriate designation for each ORM must be:

* * * * *

(7) ORM-E for an ORM-E.

* * * * *

(c) The marking ORM-A, B, C, D, or E is the certification by the person offering the package for transportation that the material is properly described, classed, packaged, marked and labeled (when appropriate) and in proper condition for transportation according to the applicable regulations of this subchapter. This form of certification does not preclude the requirement for a certificate on a shipping paper when required by § 172.204.

23. Section 172.324 is added to read as follows:

§ 172.324 Package containing a hazardous substance.

(a) If the proper shipping name for a mixture or solution that is a hazardous substance does not identify the constituents making it a hazardous substance, the name or names of such constituents shall be entered in association with the basic description. This requirement also applies to descriptions from the Optional Table in § 172.102.

(b) The letters RQ shall be displayed in association with the proper shipping name on a package containing a hazardous substance before the package may be offered for transportation.

(c) This section does not apply—

(1) To a portable tank, cargo tank, or tank car.

(2) Until July 1, 1983.

24. In § 172.326 paragraphs (a) and (b) are revised; paragraphs (d) and (e) are added to read as follows:

§ 172.326 Portable tanks.

(a) No person may offer for transportation or transport a portable tank containing a hazardous material unless it is legibly marked with letters or numerals, as required, measuring no less than two inches (50.8 mm.) in height—

(1) On two opposing sides with the proper shipping name of the material, and

(2) As prescribed by § 172.332, with the identification number specified for the material in § 172.101 or § 172.102, and

(i) On each side and each end, if the tank has a capacity of 1,000 gallons or more, or

(ii) On two opposing sides or ends in association with the proper shipping name, if the tank has a capacity of less than 1,000 gallons.

(b) A portable tank marked with the name or identification number of a hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material in the portable tank, whichever is appropriate.

* * * * *

(d) If the marking required by paragraph (a) of this section is not visible, a transport vehicle, or freight container used to transport a portable tank must be marked on each side and each end as required by § 172.332 with the identification number specified for the material in § 172.101 or § 172.102.

(e) Each portable tank marked as required by paragraph (a) of this section must remain marked unless it is—

(1) Filled with a material not subject to this subchapter; or

(2) Sufficiently cleaned of residue and purged of vapor to remove any potential hazard.

25. In § 172.328 paragraphs (a), (b) and (e) are revised and paragraph (f) is added to read as follows:

§ 172.328 Cargo tanks.

(a) Except as provided in this subpart, no person may offer for transportation or transport a hazardous material in a cargo tank unless the cargo tank is marked as required by § 172.332 on each side and each end with the identification number specified for the material in § 172.101 or § 172.102.

(1) A person who offers a motor carrier a hazardous material for transportation in a cargo tank shall provide to the motor carrier the required identification numbers on panels or placards, as appropriate, prior to or at the time the material is offered for transportation unless the cargo tank is already marked with the identification number required by this subpart.

(2) A person who offers a cargo tank containing a hazardous material for transportation shall affix the required identification numbers on panels or placards prior to or at the time the cargo tank is offered for transportation unless it is already marked with identification numbers as required by this subpart.

(b) Except as specified in paragraph (a) of this section, when the name of a material or other marking is required by this subchapter to be marked on a cargo tank, it must be legibly displayed in lettering or numbers no less than two inches (50.8 mm.) in height.

* * * * *

(e) A cargo tank marked with the name or identification number of a hazardous material may not be used to transport any other material unless the marking is removed, or changed to identify the hazardous material in the cargo tank, whichever is appropriate.

(f) A cargo tank that is required to be marked with the name or identification number of a hazardous material must remain marked when empty unless it is—

(1) Reloaded with a material not subject to this subchapter; or

(2) Sufficiently cleaned of residue and purged of vapor to remove any potential hazard.

26. Section 172.330 is revised to read as follows:

§ 172.330 Tank cars and multi-unit tank car tanks.

(a) No person may offer for transportation or transport a hazardous material in a tank car (other than a multi-unit tank car tank) unless the tank car is—

(1) Marked on each side, when required by Part 173 or 179 of this subchapter, with the—

(i) Proper shipping name of the material, or

(ii) Common name authorized in this subchapter for the material such as "Refrigerant Gas."

(2) Marked on each side and each end, as required by § 172.332, with the identification number specified for the material in § 172.101 or § 172.102.

(b) The letters in the marking of a proper shipping name or common name must be 4 inches (101.6 mm.) or more in height with at least a ⅝ inch (15.9 mm.) stroke. The separation between each letter must be at least ¾ inch (19.0 mm.).

(c) No person may offer for transportation or transport a hazardous material in a multi-unit tank car tank unless it is marked on opposing sides, in letters and numerals no less than two inches high, with the—

(1) Proper shipping name specified for the material in § 172.101 or § 172.102, or common name authorized for the material in this subchapter, and

(2) Identification number specified for the material in § 172.101 or § 172.102.

(d) A tank car or a multi-unit tank car tank marked with the identification number or name of a hazardous material may not be used to transport any other

material unless the marking is removed, or changed to identify the hazardous material that the tank car or multi-unit tank car tank contains, whichever is appropriate.

(e) A motor vehicle or rail car used to transport a multi-unit tank car tank must be marked on each side and each end, as required by § 172.332, with the identification number specified for the material in § 172.101 or § 172.102.

(f) If a multi-unit tank car tank contains chlorine, marking of the name "Chlorine" is not required when the CHLORINE label is used as provided in § 172.405(b).

(g) Each tank car and multi-unit tank car tank marked as required by this section must remain marked when empty unless—

(1) Reloaded with a material not subject to this subchapter, or

(2) Sufficiently cleaned of residue and purged of vapor to remove any potential hazard.

(h) Display of identification numbers on multi-unit tank car tanks is not required prior to July 1, 1983.

27. Section 172.332 is added to read as follows:

§ 172.332 Identification number markings.

(a) Identification numbers on portable tanks, cargo tanks and tank cars shall be displayed on orange panels 5⅞ inches (15 cm.) high by 15¾ inches (40 cm.) wide with a ⅜ of an inch (9.5 mm.) black outer border. The indentification number shall be displayed in 4-inch (10 cm.) black Helvetica Medium numerals. Measurements may vary from those specified plus or minus 0.1 of an inch (3 mm.).

(b) The orange display panel may be made of any durable material prescribed for placards in § 172.519, and shall be of the orange color specified for labels or placards in Appendix A to this Part.

(c) The name and hazard class of a material represented by the identification number may be shown in the upper left border of the orange panel in letters not more than 18 point (¼-inch) high.

(d) Except for size and color, the orange panel and identification numbers shall be as illustrated for Liquefied petroleum gas:

(e) The identification number on an orange panel shall be displayed in proximity to any placard required by § 172.504.

28. Section 172.334 is added to read as follows:

§ 172.334 Identification numbers; alternative display.

(a) As an alternative to the display of an identification number on an orange panel as required by § 172.332, an identification number may be displayed on the placard specified for the material subject to the following conditions:

(1) The placard may not be a POISON GAS or RADIOACTIVE placard.

(2) The identification number shall be displayed across the center area of the placard in 3½ inch (89 mm.) black Helios Bold Condensed numerals on a white background 4 inches (10 cm.) high and approximately 8½ inches (21.5 cm.) wide.

(3) The top of the 4-inch (10 cm.) high white background shall be approximately 1⅝ inches (40.0 mm.) above the placard horizontal center line.

(4) Whenever this alternative is used, the United Nations hazard class number for the material shall be displayed in the lower corner of each placard as specified in § 172.519(d).

(5) Whenever the alternate identification number marking procedure is used for marking a cargo tank or tank car transporting a combustible liquid, the entire area below the white background for the identification number on the placard must be white, except for the hazard class number.

(6) If an identification number is placed over the word(s) on a placard, the word(s) should be substantially covered to maximize the effectiveness of the identification number.

(7) The name of the hazardous material and the hazard class may be shown in letters not more than 18 points (¼) inch) high immediately within the upper border of the space on the placard bearing the identification number of the material.

(b) Except for size and color, the alternative display of an identification number on a placard shall be as illustrated for Acetone:

28A. Section 172.336 is added to read as follows:

§ 172.336 Identification numbers; special provisions and exceptions.

(a) When not required by this subpart, identification numbers may be displayed on a transport vehicle or a freight container in the manner prescribed by this subpart when all hazardous materials contained therein are identified by the identification numbers displayed.

(b) For hazardous materials in hazard classes for which placards are not authorized or required, identification numbers may be displayed on a plain white square-on-point configuration

having the same outside dimensions as those prescribed for a hazard warning placard. [Note: A display containing an identification number as authorized in this paragraph is not considered a placard.]

(c) Identification numbers are not required—

(1) On the ends of a portable tank, cargo tank or tank car having more than one compartment if hazardous materials having different identification numbers are being transported therein. In such a circumstance, the identification numbers on the sides of the tank must be displayed in the same sequence as the compartments containing the materials they identify.

(2) On a cargo tank containing only fuel oil, if the cargo tank is marked "Fuel Oil" on each side and rear in letters no less than 2 inches high.

(3) for different distillate fuels in the same cargo tank or tank car, if the identification number is displayed for the distillate fuel having the lowest flash point.

(4) On nurse tanks meeting the provisions of § 173.315(m) of this subchapter.

(5) On the forward end of cargo tank trucks or semi-trailers.

(6) On mulit-unittank car tanks prior to July 1, 1983.

(7) On orange panels or placards prior to July 1, 1981.

29. Section 172.338 is added to read as follows:

§ 172.338 Replacement of identification numbers.

If an identification number on a vehicle or portable tank is lost or destroyed during transportation, the carrier shall replace the missing identification number as soon as practicable. However, in such a case, the numerals may be entered legibly by hand using an indelible marking material.

30. In § 172.400, paragraph (a) is amended by inserting "or § 172.102" immediately following "§ 172.101"; paragraph (b)(3) is amended by inserting the words "freight containerload," in the third line immediately before the word "carload"; and a new paragraph (d) is added to read as follows:

§ 172.400 General labeling requirements.

* * * * *

(d) Except as provided in paragraph (b) of this section, when the proper shipping name marked on a package is a proper shipping name from § 172.102 that does not appear in § 172.101, the package must be labeled as provided in § 172.102.

31. In § 172.402 subparagraphs (a)(5) to (a)(10) are added to read as follows:

§ 172.402 Additional labeling requirements.

(a) * * *

(5) A material classed as a Corrosive material that also meets the definition of a Poison B shall be labeled with a POISON label in addition to the class label. This subparagraph does not apply to a material that would cause death due to corrosive destruction of tissue rather than by systemic poisoning.

(6) A material classed as a Poison B that also meets the definition of a corrosive material shall be labeled with a CORROSIVE label in addition to the class label.

(7) A material classed as a Flammable liquid that also meets the definition of a Corrosive material shall be labeled with a CORROSIVE label in addition to the class label.

(8) A material classed as a Flammable solid that also meets the definition of a Corrosive material shall be labeled with a CORROSIVE label in addition to the class label.

(9) A material classed as an Oxidizer that also meets the definition of a Corrosive material shall be labeled with a CORROSIVE label in addition to the class label.

(10 The requirements of subparagraphs (5) through (9) of this paragraph do not apply prior to July 1, 1983.

32. In § 172.407 paragraph (h) is revised to read as follows:

§ 172.407 Label specifications.

* * * * *

(h) Except for EXPLOSIVE A and EXPLOSIVE B labels, IMCO specifications for labels may be used provided the labels bear English language inscriptions as prescribed in this subpart, and color tolerances are as prescribed by paragraph (d) of this section. EXPLOSIVE A and EXPLOSIVE B labels may bear inscriptions in addition to those prescribed in this subpart if required for purposes of import or export. A label may contain inscriptions required by the country of origin subject to the limitations specified in § 172.401.

* * * * *

33. A new § 172.503 is added to read as follows:

§ 172.503 Identification number display on placards.

For procedures and limitations pertaining to the display of identification numbers on placards, see § 172.334.

34. In § 172.504 Table 2 of paragraph (a) is revised and paragraph (d) is added to read as follows:

§ 172.504 General placarding requirements.

(a) * * *

* * * * * * *

Table 2

If the motor vehicle, rail car, or freight container contains a material classed (described) as—	The motor vehicle, rail car, or freight container must be placarded on each side and each end—
Class C explosives	DANGEROUS.[b]
Blasting agents	BLASTING AGENTS.[a]
Nonflammable gas	NON-FLAMMABLE GAS.[a]
Nonflammable gas (Chlorine)	CHLORINE.[a]
Nonflammable gas (Fluorine)	POISON.
Nonflammable gas (Oxygen, pressurized liquid)	OXYGEN.[a]
Flammable gas	FLAMMABLE GAS.[a]
Combustible liquid	COMBUSTIBLE.[a]
Flammable liquid	FLAMMABLE.
Flammable solid	FLAMMABLE SOLID.[a]
Oxidizer	OXIDIZER.[a]
Organic peroxide	ORGANIC PEROXIDE.
Poison B	POISON.
Corrosive material	CORROSIVE.[a]
Irritating material	DANGEROUS.

* * * * * * *

[a] A NON-FLAMMABLE GAS placard is not required on a motor vehicle displaying a FLAMMABLE GAS placard.

[b] BLASTING AGENTS, OXIDIZER and DANGEROUS placards need not be displayed if a freight container, motor vehicle, or rail car also contains Class A or B explosives and is placarded EXPLOSIVES A or EXPLOSIVES B as required.

* * * * *

(d) Any packaging having a capacity of 110 gallons or less that contains only the residue of a hazardous material covered by Table 2 of this section need not be included in determining the applicability of the placarding requirements.

35. In § 172.519 paragraphs (d) and (f) are revised to read as follows:

§ 172.519 General specifications for placards.

* * * * *

(d) The hazard class and division number prescribed for dangerous goods in the UN Recommendations titled "Transport of Dangerous Goods" may be entered on each placard in the lower corner of the diamond. If a placard is used to display identification numbers as authorized by § 172.334, the class number must be entered in a numeral approximately 1¾-inches (45 mm.) in height (numeral height may be between 1⅝ inches (41 mm.) and 1¾ inches (45 mm.)). They must be black on each placard except on NON-FLAMMABLE GAS, FLAMMABLE GAS, FLAMMABLE, COMBUSTIBLE and CORROSIVE placards. The class numbers on NON-FLAMMABLE GAS, FLAMMABLE GAS and FLAMMABLE placards may be white, and the class numbers on the CORROSIVE placard must be white.

* * * * *

(f) Except as provided in § 172.334, placards shall be as described in this section and as prescribed in Appendix B to this Part.

* * * * *

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

36. In § 173.2 the section title is changed; the introductory text of paragraph (a) is revised; paragraph (a)(16) is added, to read as follows:

§ 173.2 Classification of material.

(a) *Classification of material having more than one hazard as defined in this Part.* Except as provided in paragraph (b) of this section, a hazardous material, having more than one hazard as defined in this Part, must be classed according to the following order of hazards:

* * * * *

(16) ORM-E

* * * * *

37. Section 173.21 is revised to read as follows:

§ 173.21 Forbidden materials and packages.

Unless otherwise provided in this subchapter, the offering for transportation of the following is forbidden:

(a) A hazardous material in the same packaging, freight container, or overpack with another hazardous material, the mixing of which would be liable to cause a dangerous evolution of heat or gas, or produce corrosive materials, except as provided in §§ 173.152(a) and 173.242(a) and (b).

(b) A package containing a material which is liable to decompose or polymerize at a temperature of 130°F. (54.4°C.) or less with an evolution of a dangerous quantity of heat or gas unless stabilized or inhibited in a manner that will preclude such evolution.

(1) The determination of whether a material is forbidden under this paragraph may be made by one of the following methods: Standard Method of Test for Constant Temperature Stability of Chemical Materials (ASTM E-487-74) or the Self Accelerating Decomposition Temperature (SADT) Test published by the Organic Peroxide Producers' Safety Division (OPPSD).

(2) Refrigeration may be used as a means of stabilization only when approved by the Associate Director for Operations and Enforcement, MTB. (For status of approvals issued by the Bureau of Explosives, see § 171.19 of this subchapter.)

(c) Packages which evolve a dangerous quantity of flammable gas or vapor realeased from a material which would not otherwise be subject to this subchapter, i.e., the release of flammable vapor or gas in such quantities that a flammable mixture with air would be created within a transport vehicle.

(d) Packages containing materials (other than those classed as explosives) which will detonate in a fire. For the purposes of this paragraph, a detonation is a type of explosion in which a shock wave travels through the material at a speed greater than the speed of sound in the undecomposed material. When tests are required to evaluate a package under the provisions of this paragraph, the testing must be done or approved by one of the agencies specified in § 173.86.

(e) Any package containing a cigarette lighter or other similar device with fuel and equipped with an ignition element, unless the design of the device and its packaging insofar as they affect safety in transportation have been examined by the Bureau of Explosives (B of E) and approved by the Associate Director for Operations and Enforcement, MTB. (An approval which was issued by the B of E remains valid to the same extent as if it had been issued by MTB.) For lighters containing gases, also see § 173.308.

38. In § 173.28 the section heading, the introductory text of paragraph (h), and paragraph (n) are revised; paragraph (h)(1) is deleted, paragraphs (i) and (j) are deleted and reserved; paragraph (p) is added to read as follows:

§ 173.28 Reuse of packagings (containers).

* * * * *

(h) Except as provided in paragraphs (m), (n), and (p) of this section, single-trip containers (marked STC) and nonreusable containers (marked NRC) subject to the specification requirement of Part 178 of this subchapter from which contents have been removed following use for transportation of any material, may not be used thereafter for the transportation of hazardous materials.

(i) [Reserved]

(j) [Reserved]

* * * * *

(n) A packaging marked as STC or NRC according to the specification requirements of Part 178 of this subchapter may be reused for the shipment of any corrosive solid, ORM-A, ORM-B, ORM-C, ORM-E or any material not required by this subchapter to be shipped in a DOT specification packaging. Paragraph (m) of this section does not apply to these materials.

* * * * *

(p) A packaging marked NRC or STC according to the specification requirements of Part 178 of this subchapter may be reused for the shipment of hazardous waste to designated facilities subject to the following conditions:

(1) Except as authorized by this paragraph, the waste must be packaged in accordance with this Part and offered for transportation in accordance with the requirements of this subchapter.

(2) Transportation is performed by highway only.

(3) A package is not offered for transportation less than 24 hours after it is finally closed for transportation, and each package is inspected for leakage immediately prior to being offered for transportation.

(4) Each package is loaded by the shipper and unloaded by the consignee, unless the motor carrier is a private or contract carrier.

(5) The packaging may be used only once under this paragraph and may not be used again for shipment of hazardous materials except in accordance with paragraph (m) or (n) of this section.

39. In § 173.29 paragraph (a) is revised; paragraphs (b), (c), and (e) are

deleted; paragraph (d) is redesignated paragraph (b); paragraph (f) is redesignated paragraph (c) to read as follows:

§ 173.29 Empty packagings, portable tanks, cargo tanks, and tank cars.

(a) Except as otherwise provided in this section, a packaging having a capacity of 110 gallons or less that previously contained a hazardous material may not be offered for transportation unless offered in the same manner as required when it previously contained a greater quantity of hazardous material.

(1) This paragraph does not apply to a packaging that has been cleaned and purged of all residue or to a packaging filled with a material that is not subject to this subchapter.

(2) The word "waste" does not have to be displayed as part of the marking required by § 172.300 of this subchapter on a packaging having a capacity of 110 gallons or less that contains only the residue of a hazardous material.

(3) Any packaging having a capacity of 110 gallons or less that contains only the residue of a hazardous material covered by Table 2 of § 172.504 of this subchapter—

(i) Does not have to be included in determining the applicability of the placarding requirements of that section, and

(ii) Is not subject to the shipping paper requirements of this subchapter when collected and transported by a private motor carrier for reconditioning or reuse.

(4) Notwithstanding the stowage requirements in Columns 7(a) and (b) of the Table in § 172.101 or of the Optional Table in § 172.102 of this subchapter, for transportation by water, empty drums or empty cylinders not meeting the exception in paragraph (a)(1) of this section may be stowed on deck or under deck. Also, these packagings are not subject to Subparts D through O of Part 176 of this subchapter.

* * * * *

40. Section 173.51 is revised to read as follows:

§ 173.51 Forbidden explosives.

Unless otherwise provided in this subchapter, the transportation of the following explosives is forbidden:

(a) Explosive compounds, mixtures or devices which ignite spontaneously or undergo marked decomposition when subjected to a temperature of 167° F. (75° C.) for 48 consecutive hours.

(b) New explosive compounds, mixtures or devices except as provided for in § 173.86.

(c) Explosive mixtures or devices containing an ammonium salt and a chlorate.

(d) Explosive mixtures or devices containing an acidic metal salt and a chlorate.

(e) Leaking or damaged packages of explosives.

(f) Nitroglycerin, diethylene glycol dinitrate or other liquid explosives not authorized by §173.53(e) or (h). (For shipment by motor vehicle other than by common carrier, see § 177.822(b) of this subchapter.)

(g) Loaded firearms.

(h) Fireworks that combine an explosive and a detonator or blasting cap.

(i) Fireworks containing yellow or white phosphorous.

(j) Toy torpedoes, the maximum outside dimension of which exceeds ⅞-inch, or toy torpedoes containing a mixture of potassium chlorate, black antimony, and sulfur with an average weight of explosive composition in each torpedo exceeding four grains.

41. In § 173.118a paragraphs (a) and (b)(1), (2), (3) and (5) are revised to read as follows:

§ 173.118a Exceptions for combustible liquids.

(a) Unless otherwise stated for a specific material, the regulations in this subchapter do not apply to a material classed as a combustible liquid in a packaging having a rated capacity of 110 gallons or less, unless the combustible liquid is a hazardous substance, or a hazardous waste.

(b) * * *

(1) Shipping papers, waybills, switching orders, and hazardous waste manifests;

(2) Marking of portable tanks and identification number marking of portable tanks, cargo tanks, tank cars and mult-unit tank car tanks;

(3) Placarding of portable tanks, cargo tanks and tank cars.

* * * * *

(5) Reporting incidents as prescribed by §§ 171.15, 171.16, and 171.17 of this subchapter.

42. In § 173.151a, paragraph (a)(3) is revised to read as follows:

§ 173.151a Organic peroxide; definition.

(a) * * *

(3) It is determined that the predominant hazard of the material containing an organic peroxide is other than that of an organic peroxide, or

* * * * *

42A. In § 173.154, the second sentence of paragraph (a)(20) is revised to delete the comma and all the text after the word "dry" and by adding a period after the word "dry".

43. A new § 173.179 is added to read as follows:

§ 173.179 N-methyl-N'-nitro-N-nitrosoguanidine.

N-methyl-N'nitro-N-nitrosoguanidine must be packaged as follows: The quantity in one outside packaging may not exceed 25 grams and must be placed in a polyethylene bottle which is tightly closed and the closure secured in place with pressure sensitive tape. The bottle must be sealed in a polyethylene bag constructed of polyethylene at least 4 mils thick. The bag containing the bottle must be cushioned in a hermetically sealed can with noncombustible cushioning material. There must be at least one inch of cushioning material between the outer surface of the bag and the inner surface of the can. The metal can must be cushioned in a DOT 12B fiberboard box constructed of at least 350 pound test fiberboard. There must be at least one inch of cushioning material between the outer surface of the can and the inner surface of the fiberboard box.

§ 173.182 [Amended]

44. In § 173.182(a) and § 173.182(b) the following materials are added in the text by being entered in their proper alphabetical sequence: "beryllium nitrate, cupric nitrate, ferric nitrate, mercuric nitrate, nickel nitrate, and zirconium nitrate."

45. In § 173.217 the heading and introductory text to paragraph (a) are amended by inserting the entry "Calcium hypochlorite, hydrated" in proper alphabetical order; present paragraph (b) is redesignated paragraph (c) and a new paragraph (b) is added to read as follows:

§ 173.217 Calcium hypochlorite mixture, dry; lithium hypochlorite mixture, dry; mono-(trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry; potassium dichloro-s-triazinetrione, dry; sodium dichloro-s-triazinetrione, dry; trichloro-s-triazinetrione, dry.

* * * * *

(b) As prescribed in § 173.163(a)(7). Authorized only for calcium hypochlorite, hydrated.

* * * * *

46. In § 173.352, the section heading and the introductory text of paragraph (a) are revised to read as follows:

§ 173.352 Sodium and potassium cyanide solutions, and cyanide solution, n.o.s.

(a) Sodium and potassium cyanide solutions, and cyanide solutions, n.o.s.

must be packed in specification packagings as follows:

* * * * *

47. In § 173.364, the introductory text of paragraph (a) is revised to read as follows:

§ 173.364 Limited quantities of poison B solids.

(a) Unless otherwise excluded by paragraph (a)(3) of this section, Limited Quantities of Poison B solids for which exceptions are permitted, as noted by reference to this section in § 172.101 of this subchapter, are excepted from specification packaging requirements of this Part if in tightly closed inside packaging securely cushioned when necessary to prevent breakage according to the following subparagraphs. (In addition, these shipments are not subject to Subpart F of Part 172 of this subchapter except § 174.24 and § 174,680, nor Part 177 of this subchapter except § 177.817 and § 177.841(e).)

* * * * *

48. In § 173.389 paragraph (e) is revised to read as follows:

§ 173.389 Radioactive materials; definitions.

* * * * *

(e) "Radioactive material" means any material or combination of materials which spontaneously emit ionizing radiation. Material in which the estimated specific activity is not greater than 0.002 microcuries per gram of material, and in which the radioactivity is essentially uniformly distributed, is not classed as a Radioactive material under this subchapter.

* * * * *

49. In § 173.500, paragraph (a) and the Note to paragraph (a) are revised; former paragraphs (a)(1) through (a)(4) are redesignated paragraphs (b)(1), (b)(2), (b)(3) and (b)(4) respectively and the introductory text of paragraph (b) and a new paragraph (b)(5) are added to read as follows:

§ 173.500 Definitions.

(a) An Other Regulated Material (ORM) is a material that—

(1) May pose an unreasonable risk to health and safety or property when transported in commerce; and

(2) Does not meet any of the definitions of the other hazard classes specified in this subchapter, or

(3) Has been reclassed an ORM (specifically or permissively) according to this subchapter.

Note.—A material with a flashpoint of 100° F. to 200° F. may not be classed as an ORM if it is a hazardous waste or is offered in a packaging having a rated capacity of more than 110 gallons.

(b) ORM's are divided into classes as follows:

* * * * *

(5) An ORM-E is a material that is not included in any other hazard class, but is subject to the requirements of this subchapter. Materials in this class include—

(i) Hazardous waste.

(ii) Hazardous substances as defined in § 171.8 of this subchapter.

50. In § 173.505 the introductory text to paragraph (a) is revised to read as follows:

§ 173.505 Exceptions for other regulated material (ORM).

(a) The following ORM's, unless otherwise provided by § 172.101 of this subchapter, are not subject to the requirements of this subchapter, except §§ 173.6, 173.21 and 173.24, and Subparts C and D of Part 172 of this subchapter when packaged as follows:

* * * * *

51. In § 173.510 paragraph (a)(1) is revised and paragraph (a)(5) is added to read as follows:

§ 173.510 General packaging requirements.

(a) * * *

(1) Each material must be offered for transportation and transported in compliance with Subparts B, C, and D of Part 172 of this subchapter and Subparts A and B of Part 173. [Note: Packaging for certain PCB's for disposal, and for storage for disposal is prescribed by EPA in 40 CFR 761.10 and 761.42.]

* * * * *

(5) Portable tanks, tank cars, cargo tanks, hopper and dump type transport vehicles must be free from leaks and all discharge openings must be securely closed during transportation.

52. A heading to Subpart O, to precede sections numbered 173.1300 through 173.1399, is added to read as follows:

Subpart O—Other Regulated Material; ORM-E.

53. Section 173.1300 is added to read as follows:

§ 173.1300 Hazardous waste, liquid or solid, n.o.s.; hazardous substance, liquid or solid, n.o.s.

Hazardous waste, liquid or solid, n.o.s., or Hazardous substance, liquid or solid, n.o.s., may not be offered for transportation unless packaged in accordance with § 173.510.

PART 174—CARRIAGE BY RAIL

54. In § 174.24 paragraph (b) is revised to read as follows:

§ 174.24 Shipping papers.

* * * * *

(b) This subpart does not apply to a material classed as an ORM-A, B, C, or D unless it is a—

(1) Hazardous substance, or

(2) Hazardous waste.

55. In § 174.25 paragraph (b)(6) is added and at the end of paragraph (c) a new sentence is added to read as follows:

§ 174.25 Additional information on waybills, switching orders and other billings.

* * * * *

(b) * * *

(6) For any entry for a material that is a hazardous substance, the letters "RQ" shall be entered on the shipping paper either before or after the basic description, and

* * * * *

(c) * * * For an empty tank car that last contained a hazardous substance and still contains a reportable quantity, "RQ" shall be entered on the shipping paper either before or after the basic description.

* * * * *

56. Section 174.45 is revised to read as follows:

§ 174.45 Reporting hazardous materials incidents.

When an incident occurs during transportation in which a hazardous material is involved, a report may be required (see §§ 171.15, 171.16 and 171.17 of this subchapter).

PART 176—CARRIAGE BY VESSEL

57. In § 176.11 paragraph (e) is revised and paragraph (f) is added to read as follows:

§ 176.11 Exceptions.

* * * * *

(e) Hazardous materials classed and shipped as ORM-D are not subject to the requirements of this Part unless they are offered for transporation as hazardous wastes.

(f) The stowage requirements of § 172.101 of this subchapter notwithstanding, a hazardous material which is classed, labeled and described in accordance with § 172.102 may be stowed as provided in that section.

58. In § 176.48 paragraph (b) is revised to read as follows:

§ 176.48 Situation requiring report.

* * * * *

(b) When an incident occurs during transportation in which a hazardous material is involved, a report may be required (see §§ 171.15, 171.16 and 171.17 of this subchapter).

* * * * *

PART 177—CARRIAGE BY PUBLIC HIGHWAY

59. Section 177.807 is revised to read as follows:

§ 177.807 Reporting hazardous materials incidents.

When an incident occurs during transporation in which a hazardous material is involved, a report may be required (see §§ 171.15, 171.16, and 171.17 of this subchapter).

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53, Appendix A to Part 1).

Note.—The Materials Transportation Bureau has determined that this document will not result in a major economic impact under the terms of Executive Order 12044 and DOT implementing procedures (44 FR 11034) nor require an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 et seq.) A regulatory evaluation and environmental assessment are available for review in the docket.

Issued in Washington, D.C. on May 7, 1980.

L. D. Santman,

Director, Materials Transportation Bureau.

Note.—Incorporation by reference provisions approved by the Director of the Federal Register on May 15, 1980.

[FR Doc. 80-15510 Filed 5-21-80; 8:45 am]

BILLING CODE 4910-60-M