



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

NOV 02 2016

Robb Boros
Regulatory Compliance Specialist
Patterson Companies, Inc.
1905 Lakewood Drive
Boone, Iowa 50036

Ref. No. 16-0079

Dear Mr. Boros:

This responds to your May 9, 2016 email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the exception for aqueous solutions of alcohol. Your questions are paraphrased and answered as follows:

Q1. Is an aqueous solution of alcohol with a small concentration of other hazardous materials eligible for the exception in § 173.150(e)(2)?

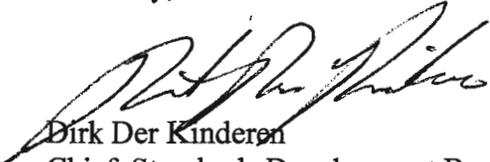
A1. No. To qualify for the exception prescribed in § 173.150(e)(2), an aqueous solution of alcohol must contain only alcohol and no other hazardous material.

Q2. If a solution described as "UN1986, Alcohols, flammable, toxic, n.o.s." contains no more than 24 percent alcohol by volume, is no less than 50 percent water, and contains no other hazardous materials, would it be eligible for the exception in § 173.150(e)?

A2. No. The original intent of this exception was only to provide relief for alcohols that do not meet the definition of a hazard class other than Class 3 flammable liquid. When this exception was initially introduced into the HMR, the main consideration was the effect of alcohol concentration on the flashpoint of an aqueous solution. Therefore, the exception provided in § 173.150(e) is not suitable for the material described in your scenario based on the associated toxic hazard.

I trust this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,



Dirk Der Kinderen
Chief, Standards Development Branch
Standards and Rulemaking Division

Ciccarone
§ 173.150(e)(2)
Exception
16-0079

Dodd, Alice (PHMSA)

From: Foster, Glenn (PHMSA)
Sent: Monday, May 09, 2016 1:30 PM
To: Dodd, Alice (PHMSA); Goodall, Shante CTR (PHMSA)
Subject: Request for clarification regarding AqOH exception.
Attachments: How to UNZIP.html; SecureZIP Attachments.zip

Alice / Shante,

Please have the inquiry below checked in as a request for Letter of Interpretation and assign.

Thanks,
Glenn

From: Boros, Robb [<mailto:robb.boros@pattersoncompanies.com>]
Sent: Monday, May 09, 2016 1:04 PM
To: Foster, Glenn (PHMSA)
Subject: Request for clarification regarding AqOH exception.

I am looking for clarification on interpretations for 173.150(e)(2). Please refer to [PHMSA 13-0130](#) and [PHMSA 15-0151](#)

The HMR states in 173.150(e)(2) that an aqueous solution containing 24 percent or less alcohol by volume and no other hazardous material is not subject to the requirements of this subchapter if it contains no less than 50 percent water.

PHMSA ref. 13-0130 states that if a solution contains at least one component, other than the alcohol that meets the definition of a hazard material, including flammability the solution would not be eligible for 173.150(e)(2).

PHMSA Ref. 15-0151 states *the exception for aqueous solutions of alcohol, as provided in § 173.150(e) of the HMR, is not applicable when another hazardous material is added to the solution* and further adds that if it can be established that the other components used in the solution do not meet the definition of a hazardous material, then the solution would be eligible for the exception in § 173.150(e). The solution in this letter contains a small concentration of Alkyl dimethyl benzyl ammonium chloride (CAS# 68391-01-5) which on its own is a class 8 corrosive material with a subsidiary hazard of class 6.1 (see attached).

Am I correct in my understanding that an aqueous solution of alcohol containing another constituent that in its own right is a hazardous material, regardless of the concentration added to the AqOH solution, would not be eligible for the exception under 173.150(e)?

2,2,2-Trifluoroethanol is classified as Alcohols, flammable, toxic, n.o.s. UN1986. If a solution that contains 24% or less of this alcohol (by volume), more than 50% water and no other components, but (due to the alcohol itself) meets the definition of another hazard class, would it be eligible for 173.150(e)(2)?

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1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Benzalkonium chloride

Product Number : 12060
Brand : Sigma-Aldrich
Index-No. : 612-140-00-5

CAS-No. : 63449-41-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 4), H312
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301 Toxic if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
P322	Specific measures (see supplemental first aid instructions on this label).
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Alkyldimethylbenzylammonium chloride
Alkylbenzyltrimethylammonium chloride

CAS-No. : 63449-41-2
EC-No. : 264-151-6
Index-No. : 612-140-00-5

Hazardous components

Component	Classification	Concentration
Benzalkonium chloride	Acute Tox. 3; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 1; H301, H312, H314, H410	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 **Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed**

No data available

5. FIREFIGHTING MEASURES

5.1 **Extinguishing media**

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 **Special hazards arising from the substance or mixture**

Nature of decomposition products not known.

5.3 **Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 **Further information**

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 **Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

6.2 **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 **Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 **Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place.

hygroscopic Store under inert gas.

7.3 **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 **Control parameters**

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 **Exposure controls**

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|--|--|
| a) Appearance | Form: Semi-solid melting to a liquid
Colour: light yellow |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower | No data available |

flammability or
explosive limits

- | | |
|---|-------------------|
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Water solubility | No data available |
| o) Partition coefficient: n-
octanol/water | No data available |
| p) Auto-ignition
temperature | No data available |
| q) Decomposition
temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Mouse - 150 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Blood: Hemorrhage.

Inhalation: No data available

LD50 Dermal - Rat - 1,420 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Blood: Hemorrhage.

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2923 Class: 8 (6.1) Packing group: III
Proper shipping name: Corrosive solids, toxic, n.o.s. (Benzalkonium chloride)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 2923 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (Benzalkonium chloride)
Marine pollutant: No

IATA

UN number: 2923 Class: 8 (6.1) Packing group: III
Proper shipping name: Corrosive solid, toxic, n.o.s. (Benzalkonium chloride)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Benzalkonium chloride	63449-41-2	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Benzalkonium chloride	63449-41-2	

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.

HMIS Rating

Health hazard: 3

Chronic Health Hazard:
Flammability: 0
Physical Hazard 0

NFPA Rating

Health hazard: 3
Fire Hazard: 0
Reactivity Hazard: 0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

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