



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

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

FEB 27 2008

Capt. Bruce Bugg
Motor Carrier Compliance Division
Georgia Department of Public Safety
P.O. Box 1456
Atlanta, GA 30371

Ref. No. 07-0212

Dear Capt. Bugg:

This responds to your request for clarification of the requirements pertaining to the use of trade names and common names under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). You state that a cargo tank is marked with the trade name "Emixal" followed by "Refrigerated gas" and that the shipping papers contain the shipping description, "Gas, refrigerated liquid, n.o.s., (Argon, Oxygen), 2.2, UN3158" without the trade name in association with the basic description. Specifically, you ask whether the use of the trade name as a common name and used in this manner is acceptable under § 172.328(b)(2).

You submitted for our review copies of the shipping paper, materials safety data sheet and a photograph of the cargo tank marking. The photograph shows a cargo tank marked as follows:

**EMIXAL
REFRIGERATED LIQUID**

Section 172.328(b)(2) provides for a common name to be marked in place of the proper shipping name on a cargo tank. Neither the description "Refrigerated Liquid" nor "Emixal, Refrigerated Liquid" is an acceptable common name for the subject gas mixture and, therefore, does not satisfy the marking requirement in § 172.328(b)(2). Emixal appears to be a trade name. Under § 172.304(a)(4), non-required markings, such as a trade name, would be acceptable if displayed away from the required hazard markings in a manner that does not substantially reduce its effectiveness.

When a common name is used to meet the marking requirements for a cargo tank, that action does not affect the shipping paper requirements. The assigned basic shipping description "Gas,

refrigerated liquid, n.o.s., (Argon, Oxygen), 2.2 UN3158” is correct. The notation of a common name on the shipping papers would be considered additional information and may be included on the shipping paper in accordance with § 172.203.

I hope this information is helpful. Please contact this office if you have further questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Hattie L. Mitchell', with a large, sweeping flourish at the end.

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials Standards

McIntyre Page 1 of 1
§172.328 (b)
Marking on Cargo Tanker
07-0212

10/2/11

Drakeford, Carolyn <PHMSA>

From: INFOCNTR <PHMSA>
Sent: Monday, November 05, 2007 9:16 AM
To: Drakeford, Carolyn <PHMSA>
Subject: FW: Request for clarification of marking requirement
Attachments: P1010282.JPG; emixal_MSDS.pdf; Emixal_Shipping_paper.pdf

Carolyn,
A request for a formal letter of interp.
Thanks,
Rob

From: Bruce Bugg [mailto:obbugg@gsp.net]
Sent: Friday, November 02, 2007 7:11 PM
To: INFOCNTR <PHMSA>
Subject: Request for clarification of marking requirement

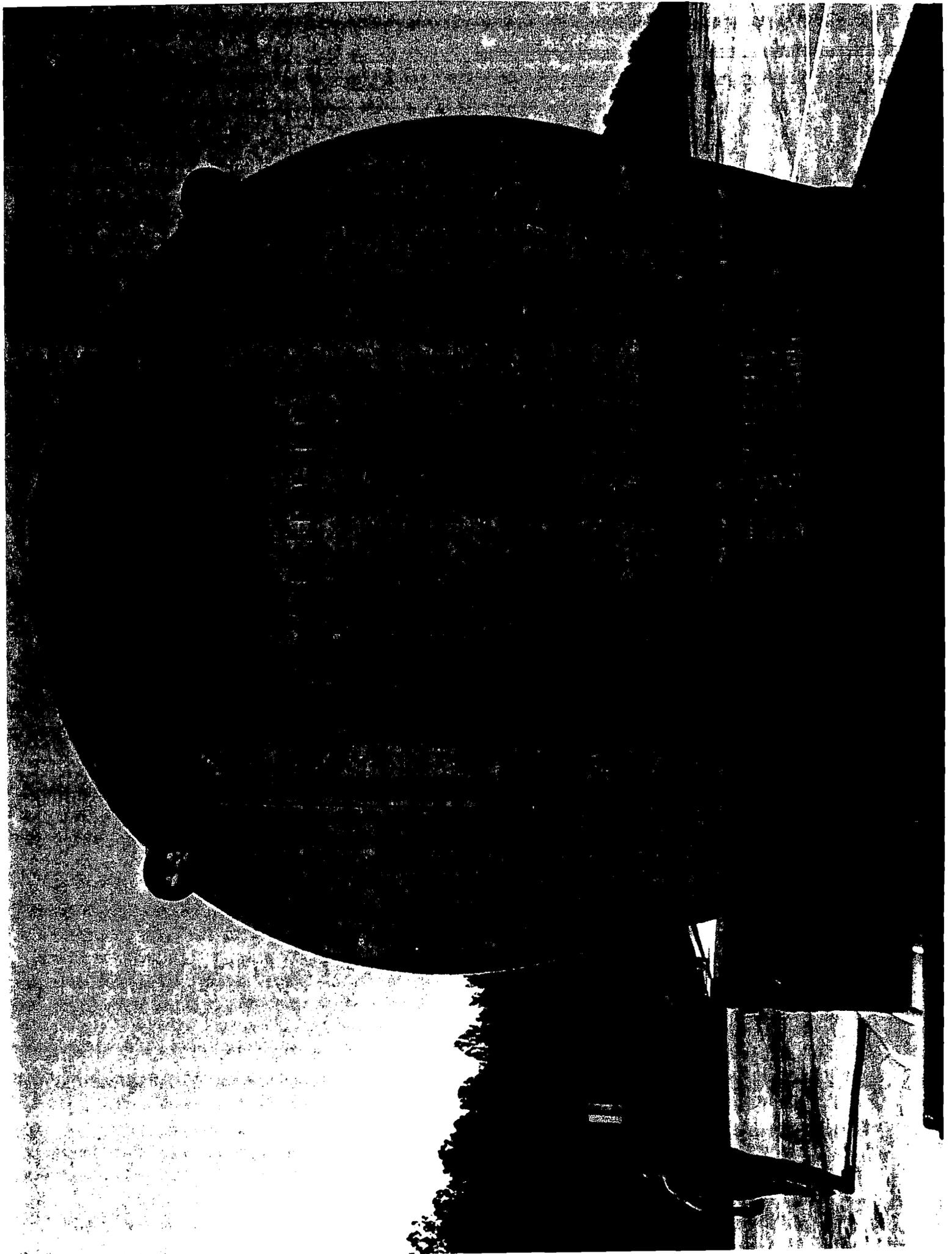
This e-mail is to request a written clarification of the marking requirement in 49 CFR §172.328(b).

A carrier marks a cargo tank containing a Class 2 cryogenic liquid mixture with the trade name, followed by "REFRIGERATED GAS." The trade name appears to be unique to this shipper and carrier. The shipping documents contain the shipping description, "Gas, refrigerated liquid, n.o.s., (Argon, Oxygen), 2.2, UN 3158." They do not contain the trade name in association with the shipping description.

Is the use of a trade name in this manner acceptable as a "common name" under §172.328(b)(2)?

Attached are the MSDS for the product, shipping papers, and a photograph of the tank marking.

^^
Capt. Bruce Bugg
Motor Carrier Compliance Division
Georgia Department of Public Safety
P.O. Box 1456 - Atlanta, GA 30371
959 E. Confederate Avenue, SE - Atlanta, GA 30316
voice: 404.624.7211 or 7230
fax: 404.624.7295
e-mail: obbugg[at]gsp.net (replace "[at]" with "@")





MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT AND COMPANY INFORMATION

**CHEMICAL NAME; CLASS: GAS, REFRIGERATED LIQUID
MIXTURE**

EMIXAL

Containing Liquid Oxygen (1.0- 10%) and Liquid Argon (Balance)

SYNONYMS: Not Applicable

CHEMICAL FAMILY: Not Applicable

FORMULA: Not Applicable

PRODUCT USE:

Document Number: 10044

Inert gas shield for welding and cutting.

MANUFACTURED/SUPPLIED BY:

ADDRESS:

EMERGENCY PHONE:

BUSINESS PHONE:



AIR LIQUIDE

2700 Post Oak Drive
Houston, TX 77056-8229

CHEMTREC: 1-800-424-9300

General MSDS Information 1-713/896-2896
Fax on Demand: 1-800/231-1366

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This is a colorless, odorless, cryogenic liquid mixture. The cryogenic liquid will rapidly boil to the gas at standard temperatures and pressures. A primary health hazard associated with releases of this gas is asphyxiation, by displacement of oxygen. The liquefied gas can also cause freezing of tissue, or cryogenic burns, similar to frostbite to eyes or skin upon contact.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of overexposure for this gas are by inhalation, and contact with the cryogenic liquid.

INHALATION: High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim of overexposure may have a blue color.

Under some circumstances of overexposure, death may occur, due to the displacement of oxygen. The following effects associated with various levels of oxygen are as follows:

<u>CONCENTRATION</u>	<u>SYMPTOM OF EXPOSURE</u>
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

CONTACT WITH SKIN or EYES: Contact of the liquid with the skin can lead to severe cryogenic burns or dermatitis (red, cracked, irritated skin), depending upon concentration and duration of exposure. Contact of the liquid with the eyes can cause pain, redness, severe cryogenic burns, and prolonged exposure could cause blindness. Contact with the undiluted liquid will cause frostbite, ulceration of the skin (which may be delayed in appearance for several hours), blistering, and pain. Contact with rapidly expanding gas poses a frostbite hazard.

OTHER POTENTIAL HEALTH EFFECTS: Contact with cryogenic liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this refrigerated gas mixture may cause the following health effects:

ACUTE: The most significant hazard associated with this gas is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, dizziness, indigestion, and nausea. At high concentrations, unconsciousness or death may occur. Contact with cryogenic liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

CHRONIC: There are currently no known adverse health effects associated with chronic exposure to this refrigerated gas mixture.

TARGET ORGANS: Respiratory system.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH	OSHA			IDLH	OTHER
			TLV ppm	STEL ppm	PEL ppm	STEL ppm		
Oxygen	7782-44-7	1.0 - 10.0%	There are no specific exposure limits for Oxygen. Oxygen levels should be maintained above 19.5%.					
Argon	7440-37-1	Balance	There are no specific exposure limits for Argon. Argon is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

This material is classified as hazardous under OSHA regulations in the United States and the WHMIS in Canada.

NE = Not Established

C = Ceiling Limit

See Section 16 for Definitions of Terms Used.

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.

4 FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus should be worn.

Remove victim(s) to fresh air, as quickly as possible. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Only trained personnel should administer supplemental oxygen.

SKIN EXPOSURE: Remove any clothing that may restrict circulation to any frozen area. Do not rub frozen parts as tissue damage may occur. As soon as practicable, place any affected area in warm water bath which has a temperature that does not exceed 105°F (40°C). NEVER USE HOT WATER. NEVER USE DRY HEAT. If area of frostbite is extensive, and if possible, remove clothing while showering with warm water. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area of the body in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

Frozen tissue is painless and appears waxy, with a possible yellow color. Frozen tissue will become swollen, painful and prone to infection when thawed. If the frozen part of the body has been thawed by the time medical attention has been obtained, cover the area with a dry sterile dressing and a large bulky protective covering.

EYE EXPOSURE: If liquid is splashed into eyes, or if irritation of the eye develops after exposure to liquid or gas, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical assistance immediately, preferably an ophthalmologist.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: Non-flammable, cryogenic gas. Use extinguishing media appropriate for surrounding fire.

RESPONSE TO FIRE INVOLVING CRYOGEN: Cryogenic liquids can be particularly dangerous during fires because of their potential to rapidly freeze water. Careless use of water may cause heavy icing. Furthermore, the relatively warm water greatly increases the evaporation rate of this cryogenic liquid mixture. If large concentrations of this refrigerated gas mixture gas are present, the water vapor in the surrounding air will condense, creating a dense fog that may make it difficult to find fire exits or equipment. This refrigerated gas mixture, when exposed to the atmosphere, will produce a cloud of ice/fog in the air upon its release.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire. This refrigerated gas mixture when accidentally released will vaporize rapidly, forming an oxygen deficient vapor cloud. Evacuate this vapor cloud area. Visibility may be obscured in its vapor cloud. Pressure in a container can build-up due to heat and it may rupture if pressure relief devices should fail to function. Contact with cold liquid or gaseous mixture may cause frostbite.

Explosion Sensitivity to Mechanical Impact: Not Sensitive.

Explosion Sensitivity to Static Discharge: Not Sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, remove cryogenic containers from fire area or cool with water. Do not direct water spray at the container vent. Evacuate area. Other information for pre-planning can be found in the North American Emergency Response Guidebook (Guide# 120).

6. ACCIDENTAL RELEASE MEASURES

RESPONSE TO CRYOGENIC RELEASE: Clear the affected area and allow the liquid to evaporate and the gas to dissipate. After the gas is formed, follow the instructions provided below. Alternatively, to increase the rate of vaporization, spray large amounts of water on to the leak from an upwind position. If the area must be entered by emergency personnel, SCBA, leather or insulated gloves, and safety shoes must be worn. Personnel responding to a release must avoid all contact with the liquid.

Minimum Personal Protective Equipment should be **Level B: leather or thermally insulated gloves and Self-Contained Breathing Apparatus**. Locate and seal the source of the leaking gas. Monitor the surrounding area for oxygen level. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus.

If leaking incidentally from the container or valve, contact your supplier.

7. HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this refrigerated gas mixture could occur without any significant warning symptoms, due to oxygen deficiency.

STORAGE AND HANDLING PRACTICES: Cryogenic containers should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Keep storage area clear of materials which can burn. Store containers away from heavily trafficked areas and emergency exits. Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Protect containers against physical damage.

Containers should be stored upright and be firmly secured to prevent falling or being knocked-over. Containers can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cryogenic containers are equipped with pressure relief devices to control internal pressure. Under normal conditions, these containers will periodically vent small amounts of product. Some metals such as carbon steel may become brittle at low temperatures and will easily fracture. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Use a check valve or other protective device in the discharge line to prevent hazardous backflow. Never tamper with pressure relief valves and containers.

Keep the smallest amount on-site as is necessary. Full and empty containers should be segregated. Use a first-in, first-out inventory systems to prevent full containers from being stored for long periods of time.

SPECIAL PRECAUTIONS FOR HANDLING CRYOGENIC CONTAINERS: Cryogenic liquids can present significant safety hazards. Never allow any unprotected part of the body to touch uninsulated pipes or vessels which contain cryogenic fluids. The extremely cold metal of the container will cause the flesh to stick fast and tear when one attempts to withdraw from it. The following rules are applicable to work situations in which cryogenic containers are being used.

Before Use: Move containers a suitable hand-truck. Do not drag, slide or roll containers. Do not drop containers or permit them to strike each other. Secure containers firmly.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat container by any means to increase the discharge rate of the product from the container. Do not use oils or grease on valve fittings or equipment. Leak-check system with leak detection solution. Immediately contact the supplier if there are any difficulties associated with operating container valve.

After Use: Close main container valve. Mark empty container "EMPTY".

NOTE: Use only DOT or ASME code containers designed for gas storage. Close valve after each use and when empty. Containers must not be recharged except by or with the consent of owner. For welding and brazing operations, refer to ANSI Z-49.1 "Safety in Welding and Cutting" and OSHA safety regulations for welding, cutting, and brazing (29 CFR 1910.252). Refer to Section 16, Other Information, for additional available literature.

OTHER SPECIAL PRECAUTIONS: Use piping and equipment adequately designed to withstand pressures and temperatures to be encountered. Use a check valve or other protective apparatus in any line or piping from the container to prevent reverse flow. To prevent cryogenic liquids or cold gas from being trapped in piping between valves, the piping shall be equipped with pressure relief devices. Only transfer lines designed for cryogenic liquids shall be used. It is recommended that all vents be piped to the exterior of the building.

7. HANDLING AND STORAGE (Continued)

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA: Use the proper CGA connections, **DO NOT USE ADAPTERS:**

<u>THREADED:</u>	CGA 295
<u>PIN-INDEXED YOKE:</u>	Not applicable.
<u>ULTRA HIGH INTEGRITY:</u>	Not applicable.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust ventilation is preferred, because it prevents chemical dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of oxygen.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of this refrigerated gas mixture. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

EYE PROTECTION: Full faceshield and safety glasses are recommended.

HAND PROTECTION: Wear loose-fitting, thermally insulated or leather gloves. Otherwise, wear glove protection appropriate to the specific operation for which this refrigerated gas mixture is used.

BODY PROTECTION: Use body protection appropriate for task. Safety shoes are recommended when handling containers, as well as long sleeve shirts and trousers.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Argon, the main component of this refrigerated gas mixture:

GAS DENSITY @ 70°F 21.1°C) and 1 atm: 0.103 lbs/cu ft (1.650 kg/m³)

BOILING POINT @ 1 atm: -185.9 °C (-302°F)

FREEZING/MELTING POINT (@ 10 psig): -189.2 °C (-308.9 °F)

SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 1.38

pH: Not applicable.

SOLUBILITY IN WATER vol/vol at 32°F (0°C) and 1 atm: 0.056

MOLECULAR WEIGHT: 39.95

EVAPORATION RATE (nBuAc = 1): Not applicable.

SPECIFIC VOLUME (ft³/lb): 12.1

ODOR THRESHOLD: Not applicable; odorless.

EXPANSION RATIO: (for liquid to gas @ 70°F (21.1°C): 1 to 841

VAPOR PRESSURE @ 70°F (21.1°C) (psig): Not applicable.

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for this refrigerated gas mixture:

APPEARANCE AND COLOR: This refrigerated gas mixture is a colorless, cryogenic liquid.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of this refrigerated gas mixture, except the extreme cold, which may form a vapor cloud.

10. STABILITY and REACTIVITY

STABILITY: Normally stable, inert gas.

DECOMPOSITION PRODUCTS: None.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: None.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposing cryogenic containers to extremely high temperatures, which could cause the cryogenic containers to rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following data are for the components of this cryogenic liquid:

ARGON: Standard animal toxicity values are not available. Male rats were exposed for 6 days to 20% oxygen and 80% Argon at 1 atmosphere ambient pressure. No significant changes in blood cell counts or bone marrow were observed. Other animal studies concern the deficiency of (hypoxia) or the narcotic effects of various pressures of Argon, the effects of increased Argon pressures on the central nervous system and decompression sickness. **Eyes:** Argon gas injected into the anterior (front) chamber of the eyes of rabbits caused no injury and was reabsorbed at about the same rate as air.

OXYGEN:

Cytogenetic Analysis System (hamster lung) 80 pph
TCLo (inhalation-woman) 12 pph for 10 minutes. Teratogenic effects.
TCLo (inhalation-human) 100 pph for 14 hours. Pulmonary effects.

SUSPECTED CANCER AGENT: The components of this refrigerated gas mixture is not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC, and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with the cryogenic liquid or rapidly expanding gases can cause frostbite and damage to exposed skin and eyes.

SENSITIZATION OF PRODUCT: The components of this refrigerated gas mixture are not sensitizers after prolonged or repeated exposures.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this refrigerated gas mixture on the human reproductive system.

Mutagenicity: This cryogenic liquid mixture is not expected to cause mutagenic effects in humans.

Embryotoxicity: This cryogenic liquid mixture is not expected to cause embryotoxic effects in humans.

Teratogenicity: This cryogenic liquid mixture is not expected to cause teratogenic effects in humans.

Reproductive Toxicity: This cryogenic liquid mixture is not expected to cause adverse reproductive effects in humans.

*A **mutagen** is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An **embryotoxin** is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance which interferes in any way with the reproductive process.*

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions may be aggravated by overexposure to this refrigerated gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for the components of this gas mixture.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The components of this gas mixture occur naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.

OXYGEN: Water Solubility = 1 volume Oxygen/32 volumes water at 20EC. Log K_{ow} = -0.65

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen deficient environments, or the extreme cold of the cryogenic gas. No adverse effect is anticipated to occur to plant-life, except for frost produced in the presence of rapidly expanding gases, or freezing from direct exposure to the cryogenic liquid.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this refrigerated gas mixture's effects on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cryogenic containers with any residual product to Air Liquide. Do not dispose of locally.

For emergency disposal, secure the cylinder and slowly discharge the gas to the atmosphere in a well-ventilated area or outdoors.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Gas, refrigerated liquid, n.o.s. (Argon, Oxygen)

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 3158

PACKING GROUP: Not applicable.

DOT LABEL(S) REQUIRED: Non-Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 120

MARINE POLLUTANT: This refrigerated gas mixture is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles present serious safety hazards and should be discouraged.

NOTE: Shipment of compressed gas cryogenic containers which have not been filled with the owners consent is a violation of Federal law (49 CFR, Part 173.301 (b)).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this gas mixture are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITIES (RQ): Not applicable.

U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.

- This gas mixture has no component subject to the reporting requirements of CFR 29 1910.1000.
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).
- No component of this gas mixture is subject to the reporting requirements of Section 112(r) of the Clean Air Act.
- Argon and Oxygen are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases.
- The regulations of the Process Safety Management of Highly Hazardous Chemicals (29 CFR 1910.119) are not applicable to this gas mixture.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The components of this product are not on the Proposition 65 lists.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: Argon.

California - Permissible Exposure Limits for Chemical Contaminants: Argon.

Florida - Substance List: Argon, Oxygen.

Illinois - Toxic Substance List: Argon.

Kansas - Section 302/313 List: No.

Massachusetts - Substance List: Argon.

Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: Argon, Oxygen.

Missouri - Employer Information/Toxic Substance List: Argon.

New Jersey - Right to Know Hazardous Substance List: Argon, Oxygen.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.

Pennsylvania - Hazardous Substance List: Argon, Oxygen.

Rhode Island - Hazardous Substance List: Argon, Oxygen.

Texas - Hazardous Substance List: No.

West Virginia - Hazardous Substance List: No.

Wisconsin - Toxic and Hazardous Substances: No

ADDITIONAL CANADIAN REGULATIONS:

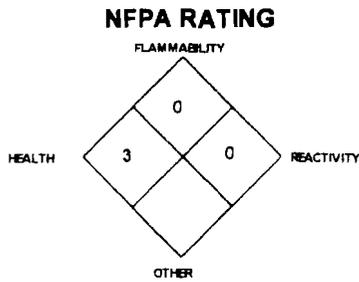
CANADIAN DSL/NDL INVENTORY STATUS: The components of this mixture are listed on the Canadian DSL Inventory.

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this product are not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS SYMBOLS: This gas mixture is categorized as a Controlled Product, Hazard Class A.

16. OTHER INFORMATION



HAZARDOUS MATERIAL INFORMATION SYSTEM			
HEALTH	(BLUE)	3	
FLAMMABILITY	(RED)	0	
REACTIVITY	(YELLOW)	0	
PROTECTIVE EQUIPMENT			X
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8
For routine welding procedures using this gas.			

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about Argon can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 4221 Walney Road 5th floor, Chantilly, VA 20151-2923. Telephone: (703) 788-2700.

- G-11.1 *"Commodity Specification for Argon"*
- P-1 *"Safe Handling of Compressed Gases in Containers"*
- P-9 *"Inert Gases--Argon, Nitrogen, and Helium"*
- P-12 *"Safe Handling of Cryogenic Liquids"*
- P-14 *"Accident Prevention in Oxygen-Rich, Oxygen-Deficient Atmospheres"*
- SB-2 *"Oxygen Deficient Atmospheres"*
- AV-1 *"Safe Handling and Storage of Compressed Gases"*
- AV-5 *"Safe Handling of Liquefied Nitrogen and Argon"*
- "Handbook of Compressed Gases"*

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
619/565-0302

Fax on Demand: 1-800/231-1366



This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this refrigerated gas mixture. To the best of Air Liquide's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this refrigerated gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

DIBOR025 - 4.0.0.1

DI Driver's Manifests

Driver:	Product:	From: 28-OCT-2007	To: 28-OCT-2007
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Location: 81515 DST-FAIRFIELD AL

Shift ID: 1186981
 Route ID: 1873220-00
 1st Driver: GRAY, JAMES
 2nd Driver:

Tractor: 95048
 Trailer: 45416
 Dispatcher: KING, DUANE
 Dispatcher On Call:

Schedule Start Date: 28-OCT-2007
 Shift: 2
 Trip: 3
 Start Time: 06:48

Container	Shipping Name	Hazardous Class of Materials	UN ID	Quantity	H.M.
CARGO TANK	GAS, REFRIGERATED, LIQUID, N.O.S. (ARGON, OXYGEN)	2.2	UN3158	12000	X
CARGO TANK	GAS, REFRIGERATED, LIQUID, N.O.S. (ARGON, OXYGEN)	2.2	UN3158	45460	X
CARGO TANK	GAS, REFRIGERATED, LIQUID, N.O.S. (ARGON, OXYGEN)	2.2	UN3158	12131	X
CARGO TANK	GAS, REFRIGERATED, LIQUID, N.O.S. (ARGON, OXYGEN)	2.2	UN3158	RESIDUE	X

(EMPTY)

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in the proper condition for transportation according to the applicable regulations of the Department of Transportation.

Air Liquide
 2700 Post Oak
 Houston TX 77056

James A. Gray
 Signature

Emergency Contact: 800-424-9300

Depot Comments: Be safety smart right from the start.

Pickup Trailer At:

Drop Trailer At:

Trip Comments:

Stop	Stop Type	Document Number	Stop Point Vessel / Reserve (Y/N)	PO Number Release Number	Estimated Volume	Delivery Hours	Access Hours	Delivery Comments
1	Source		AL FAIRFIELD AL FAIRFIELD CSP VALLEY RD-NEAR GATE 5 FAIRFIELD AL 35064-0112				00:00/23:59	

Activity:

Source Comments:

Seal No. N/A

X TO ALAC WAKE FOREST N.C TO LOAD BALANCE
 30518

SEAL NO. N/A