LIQUID AIR CORPORATION
INDUSTRIAL GASES DIVISION

Material Safety Data Sheet

PRODUCT NAME: 25% Carbon Dioxide/75% Argon	
TELEPHONE (415) 977-6500 EMERGENCY RESPONSE INFORMATION ON PAGE 2	
LIQUID AIR CORPORATION INDUSTRIAL GASES DIVISION One California Plaza, Suite 350 2121 N. California Blvd. Walnut Creek, California 94596	TRADE NAME AND SYNONYMS: 25% Carbon Dioxide/75% Argon
	CHEMICAL NAME AND SYNONYMS: 25% Carbon Dioxide/75% Argon
ISSUE DATE AND REVISIONS: OCTOBER 1, 1985 CORPORATE SAFETY DEPT.	FORMULA: 25% CO_2/75% Ar — MOLECULAR WEIGHT:

CAS NUMBER: N/A

CHEMICAL FAMILY: Gas Mixture

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT

Carbon dioxide has a TWA of 5,000 molar PPM. Its STEL is proposed to be changed from 15,000 molar PPM to 30,000 molar PPM (ACGIH, 1984-85).

SYMPTOMS OF EXPOSURE

Concentrations of 20-30 percent of these mixtures when inhaled with adequate oxygen in the air will cause an increase in the respiratory rate. Higher concentrations will cause headache, nausea and eventual unconsciousness.

TOXICOLOGICAL PROPERTIES

Carbon dioxide is the most powerful vasodilator known. Inhaling large concentrations causes rapid circulatory insufficiency leading to coma and death. Chronic harmful effects are not known from repeated inhalation of low (20-30%) concentrations of these mixtures.

Listed as Carcinogen or Potential Carcinogen	National Toxicology Program	Yes ☐	I.A.R.C. Monographs	Yes ☐	OSHA	Yes ☐
		No ☒		No ☒		No ☒

RECOMMENDED FIRST AID TREATMENT

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO THIS GAS MIXTURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Medical assistance should be sought immediately.

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

None.

PHYSICAL DATA

BOILING POINT CO_2 Sublimation Point -109.3°F (-78.5°C) Argon -302.55°F (-185.86°C)	**LIQUID DENSITY AT BOILING POINT** CO_2 Solid Density=95.64 lb per ft^3 (1562 kg/m^3); Ar=86.95 lb/ft^3 (1392.8 kg/
VAPOR PRESSURE Mixture is a gas @70°F (21.1°C)	**GAS DENSITY AT 70°F 1 atm** CO_2: @70°F=.1144 lb/ft^3 (1.832 kg/m^3); Ar: @70°F=.1034 lb/ft^3 (1.656 kg/m^3
SOLUBILITY IN WATER CO_2 Bunsen Coefficient .8704 @68°F (20°C) Ar Bunsen Coefficient .0340	**FREEZING POINT** CO_2: -69.83°F(-56.57°C) @75.1 psia (518 kPa); Ar: -308.87°F (-189.37°C)
APPEARANCE AND ODOR Colorless, odorless gas; Specific gravity @70°F (air=1.0) is 1.42	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED) N/A	**AUTO IGNITION TEMPERATURE** N/A	**FLAMMABLE LIMITS % BY VOLUME** N/A
EXTINGUISHING MEDIA Nonflammable Gas Mixture		**ELECTRICAL CLASSIFICATION** Nonhazardous
SPECIAL FIRE FIGHTING PROCEDURES N/A		
UNUSUAL FIRE AND EXPLOSION HAZARDS N/A		

REACTIVITY DATA

STABILITY Unstable		**CONDITIONS TO AVOID**
Stable	X	
INCOMPATIBILITY (Materials to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS None		
HAZARDOUS POLYMERIZATION May Occur		**CONDITIONS TO AVOID**
Will Not Occur	X	

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact the closest Liquid Air Corporation location.

WASTE DISPOSAL METHOD

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Liquid Air Corporation for proper disposal. For emergency disposal, contact the closest Liquid Air Corporation location.

EMERGENCY RESPONSE INFORMATION
IN CASE OF EMERGENCY INVOLVING THIS MATERIAL, CALL DAY OR NIGHT (800) 231-1366
OR CALL CHEMTREC AT (800) 424-9300

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) Positive pressure air line with mask or self-contained breathing apparatus should be avalable for emergency use.

VENTILATION	LOCAL EXHAUST	SPECIAL
See Local Exhaust.	To prevent accumulation above the TWA for carbon dioxide	
	MECHANICAL (Gen.)	OTHER

PROTECTIVE GLOVES
As required when welding.

EYE PROTECTION
Safety goggles or glasses.

OTHER PROTECTIVE EQUIPMENT
Safety shoes and appropriate head and eye protection when welding.

SPECIAL PRECAUTIONS*

SPECIAL LABELING INFORMATION
DOT Shipping Name: Compressed gas, n.o.s. DOT Hazard Class: Nonflammable gas
DOT Shipping Label: Nonflammable gas I.D. No.: UN 1956

SPECIAL HANDLING RECOMMENDATIONS
Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

For additional handling recommendations consult L'Air Liquide's Encyclopedia de Gaz or Compressed Gas Association Pamphlet P-1.

SPECIAL STORAGE RECOMMENDATIONS
Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time.

Do not store cylinders in sub-surface or closed areas. Both Argon and Carbon Dioxide are heavier than air and leaking gas could accumulate in low areas and cause suffocation.

For additional storage recommendations consult L'Air Liquide's Encyclopedia de Gaz or Compressed Gas Association Pamphlet P-1.

SPECIAL PACKAGING RECOMMENDATIONS
This gas mixture is noncorrosive and may be used with any common structural material.

OTHER RECOMMENDATIONS OR PRECAUTIONS
Analytical monitoring for carbon dioxide levels in the work atmosphere is recommended if these mixtures are used in confined areas. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).

*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which may not be contained herein. The customer or user of this product should be familiar with these regulations.