



Linde Gas LLC (216) 642-6600
 P.O. Box 94737
 Cleveland, Ohio 44101
 www.us.lindegas.com

MATERIAL SAFETY DATA SHEET

No. 177

PRODUCT NAME DryWash [®] Fluid	CAS # CO ₂ = 124-38-9
TRADE NAME AND SYNONYMS Liquefied Gas, N.O.S. (D.O.T.)	DOT I.D. No.: UN 3163
CHEMICAL NAME AND SYNONYMS A Trade Secret Liquid Mixture. Contains Carbon Dioxide	DOT Hazard Class: Division 2.2
ISSUE DATES AND REVISIONS June 1998	Formula Trade Secret; Contains CO ₂
	Chemical Family: Liquefied Gas Mixture

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT (For CO ₂) 5,000 Molar PPM; STEL = 30,000 Molar PPM (ACGIH 1998). OSHA 1995 PEL (8 hr. TWA) = 5,000 Molar PPM.
SYMPTOMS OF EXPOSURE <u>Inhalation:</u> Low concentrations (3-5) molar %) cause increased respiration and headache. Eight to 15 molar % concentrations cause headache, nausea and vomiting which may lead to unconsciousness if not moved to open air or given oxygen. High concentrations cause rapid circulatory insufficiency leading to coma and death.
TOXICOLOGICAL PROPERTIES Carbon dioxide is the most powerful cerebral 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 (3-5 molar %) concentrations. This mixture is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen. Persons in ill health where such illness would be aggravated by exposure to this mixture should not be allowed to work with or handle this product.
RECOMMENDED FIRST AID TREATMENT PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO THIS MIXTURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. <u>Inhalation:</u> 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 assisted respiration and supplemental oxygen. Assure that vomited material does not obstruct the airway by use of positional drainage. Further treatment should be symptomatic and supportive.

Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use. Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

Forms carbonic acid in the presence of water

PHYSICAL DATA

BOILING POINT Sublimation point = -109.3°F (-78.5°C)	LIQUID DENSITY AT BOILING POINT Solid Density - 97.5 lb/ft3 (1562 kg/m3)
VAPOR PRESSURE @ 70°F (21.1°C) =856 psia (5900 kPa)	GAS DENSITY AT 70°F, 1 atm .124 lb/ft3 (1.99 kg/m3)
SOLUBILITY IN WATER Very soluble	FREEZING POINT -69.8°F (-56.6°C) @ 75.1 psia (518 kPa)
EVAPORATION RATE N/A (Gas)	SPECIFIC GRAVITY (AIR=1) @70°F (21.1°C) = 1.65
APPEARANCE AND ODOR For the mixture; Colorless gas with very slight aliphatic odor.	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) N/A	AUTO IGNITION TEMPERATURE N/A	FLAMMABLE LIMITS % BY VOLUME (See Page 4) LE N/A UEL N/A	
EXTINGUISHING MEDIA Nonflammable, inert gas		ELECTRICAL CLASSIFICATION Nonhazardous	
SPECIAL FIRE FIGHTING PROCEDURES None			
UNUSUAL FIRE AND EXPLOSION HAZARDS If cylinders are involved in a fire, safely relocate or keep cool with water spray.			

REACTIVITY DATA

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

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 user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.
WASTE DISPOSAL METHOD Do not attempt to dispose of waste or unused quantities. Return in the shipping container <u>properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place</u> to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

SPECIAL PRECAUTIONS

OTHER RECOMMENDATIONS OR PRECAUTIONS: (Continued)

Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

Reporting under SARA, Title III, Section 313 not required.

NFPA 704 No. for this mixture = 2 0 0 None