AIR LIQUIDE™

MATERIAL SAFETY DATA SHEET

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

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: DICHLORODIFLUOROMETHANE

SYNONYMS: Fluorocarbon 12; Refrigerant 12; Propellant 12; Halon 12; Freon 12; FC 12; F-12
CHEMICAL FAMILY NAME: Halogenated Aliphatic Hydrocarbon
FORMULA: CCl_2F_2

	Document Number: 20044
PRODUCT USE:	Refrigerant; blowing agent; aerosol propellant solvent; degreasing agent; monomer for resins; leak-detecting agent; preparation of frozen tissue sections.
SUPPLIER/MANUFACTURER'S NAME:	AIR LIQUIDE AMERICA CORPORATION
ADDRESS:	2700 Post Oak Drive Houston, TX 77056-8229
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300
BUSINESS PHONE:	
	General MSDS Information 1-713/896-2896
	Fax on Demand: 1-800/231-1366

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	OTHER
DICHLORODIFLUOROMETHANE	75-71-8	100	1000, A4 (Not Classifiable as a Human Carcinogen)	NE	1000	NE	NE	NIOSH REL: 1000 ppm TWA DFG MAK: 1000 ppm

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 Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Dichlorodifluoromethane is a colorless, non-flammable, liquefied gas with a slightly ethereal odor. Dichlorodifluoromethane can cause central nervous system depression after inhalation exposures. Symptoms of such over-exposure can include drowsiness, fatigue, and weakness. At high concentrations, the gas can act as an asphyxiant, by displacing oxygen. Therefore, exposure to high concentrations of this gas can be fatal. Frostbite can be caused by contact with rapidly expanding gases or the liquefied gas. This gas is not flammable and not reactive in normal emergency response situations. However, if involved in a fire, this product can decompose to produce toxic gases (i.e. hydrogen fluoride, phosgene).

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas is by inhalation.

Exposures to high concentrations of this gas (above 10,000 ppm) may cause central nervous system depression and cause irritation of the nose, throat and upper respiratory system. Effects of such over-exposure can include light-headedness, giddiness, shortness of breath and in extreme cases, irregular heartbeats, cardiac arrest, and death. At concentrations of 40,000 ppm symptoms of exposure include slurred speech, a tingling sensation, humming in the ears, and apprehension. At 100,000 ppm, symptoms of incoordination can appear. All symptoms all more pronounced as the concentration of Dichlorodifluoromethane increases.

Deliberate abuse of Dichlorodifluoromethane by aerosol "sniffing" and use or misuse of brochiodilator aerosols have resulted in death. The cause of death is usually related to irregular heartbeat leading to cardiac arrest. These effects have not been reported in the workplace.

High concentrations of this gas can also 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. Under some circumstances of over-exposure, death may occur. The following effects associated with various levels of oxygen are as follows:

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	1
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		B

EYES RESPIRATORY HANDS BODY

See Section 8

For routine industrial applications

CONCENTRATION	SYMPTOM OF EXPOSURE
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.

OTHER POTENTIAL HEALTH EFFECTS: Contact with 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 can quickly subside.

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

ACUTE: The most significant hazard associated with this product is inhalation of high concentrations of Dichlorodifluoromethane. Such over-exposure can cause central nervous system depression and can cause oxygen deficiency. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, and, at high concentrations, unconsciousness or death may occur. The skin of a victim of over-exposure may have a blue color.

CHRONIC: This gas can cause moderate cardiac sensitization in test animals. Refer to Section 11 (Toxicology Information) for additional data.

TARGET ORGANS: Respiratory system, central nervous system.

4 FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS PRODUCT 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: Contact with the liquid or rapidly expanding gases can cause frostbite. In the event of frostbite, medical attention must be sought. 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

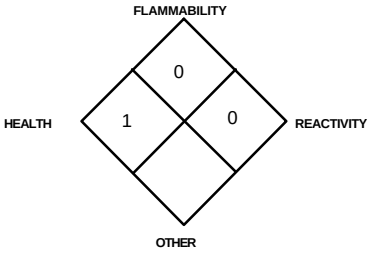
FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

NFPA RATING



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

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce toxic gases (i.e. phosgene, hydrogen fluoride, hydrogen chloride, and carbonyl fluoride). Dichlorodifluoromethane does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

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.

6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a leak, clear the affected area, protect people, and respond with trained personnel.

Minimum Personal Protective Equipment should be: **Level B: Self-Contained Breathing Apparatus.** Locate and seal the source of the leaking gas. Colorimetric tubes are available to detect the presence of Dichlorodifluoromethane. Readings should be below levels listed in Section 2 (Composition and Information on Ingredients) and the area should be monitored for oxygen levels. 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 cylinder or its valve, contact your supplier.

7. HANDLING and USE

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

STORAGE AND HANDLING PRACTICES: Cylinders should be stored upright and be firmly secured to prevent falling or being knocked-over. Cylinders 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. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight.

7. HANDLING and USE(Continued)

Keep storage area clear of materials which can burn. Do not allow area where cylinders are stored to exceed 52°C (125°F). 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 cylinders against physical damage. Use only storage containers and equipment (pipes, valves, fittings to relieve pressure, etc.) designed for the temperatures and pressures for the use and storage of Liquid Dichlorodifluoromethane.

Use a check valve or other protective device in the discharge line to prevent hazardous backflow. Never tamper with pressure relief valves and cylinders.

Keep the smallest amount necessary on-site at any one time. Full and empty cylinders 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 GAS CYLINDERS: Compressed gases can present significant safety hazards. The following rules are applicable to work situations in which cylinders are being used.

Before Use: Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap (where provided) in-place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Do not use oils or grease on gas-handling fittings or equipment. Immediately contact the supplier if there are any difficulties associated with operating cylinder valve. Never insert an object (e.g wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Never strike an arc, on a compressed gas cylinder or make a cylinder part of and electric circuit.

After Use: Close main cylinder valve. Valves should be closed tightly. Replace valve protection cap. Mark empty cylinders “EMPTY”.

NOTE: Use only DOT or ASME code containers designed for gas storage. Close valve after each use and when empty.

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

THREADED**:**	0-3000 psig - CGA 660
	0 - 500 psig - CGA 165 (limited standard)
	0 - 500 psig - CGA 182 (limited standard)
PIN-INDEXED YOKE:	Not Applicable.
ULTRA HIGH INTEGRITY:	716

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 gas 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 product. 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: Splash goggles or safety glasses. Face-shields should be worn if contact with the liquefied gas is anticipated.

HAND PROTECTION: Wear leather gloves or glove protection appropriate to the specific operation for which this product is used.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product. Safety shoes are recommended when handling cylinders.

9. PHYSICAL and CHEMICAL PROPERTIES

GAS DENSITY @ 21.1°C (70°F) and 1 atm: 0.319 lb/ft^3 (5.110 kg/m^3)

BOILING POINT @ 1 atm: -29.79°C (-21.2°F)

FREEZING/MELTING POINT @ 1 atm: -158°C (-252°F)

SPECIFIC GRAVITY (air = 1) @ 21.1°C (70°F): 4.32

pH: Not applicable.

SOLUBILITY IN WATER weight % @ 25°C (77°F): 0.028%

MOLECULAR WEIGHT: 120.93

EVAPORATION RATE (nBuAc = 1): Not applicable.

EXPANSION RATIO: Not applicable.

ODOR THRESHOLD: Not applicable.

SPECIFIC VOLUME (ft^3/lb): 3.1348

VAPOR PRESSURE @ 21.1°C (70°F): 70.2

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

APPEARANCE AND COLOR: Colorless, odorless, non-flammable gas. At high concentrations, this gas may have a sweetish odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no distinct warning properties. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Normally stable.

DECOMPOSITION PRODUCTS: If product is exposed to fire, it may decompose yielding toxic products (i.e. hydrogen fluoride, phosgene, hydrogen chloride, carbonyl fluoride).

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: The following materials are not compatible with this product:: alkaline, alkaline earth metals, and other reactive chemicals, (i.e. sodium, potassium, calcium, magnesium, powdered aluminum, and zinc). Silver and copper-bearing alloys can act as catalysts for decomposition of this product at high temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid contact with incompatible materials and avoid exposing cylinders to extremely high temperatures, which could cause the cylinders to rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following information is available for Dichlorodifluoromethane.

TCLo (inhalation, human) = 200,000 ppm/30 minutes; eye, pulmonary, liver

LC50 (inhalation, rat) = 80 pph/30 minutes

LC50 (inhalation, mouse) = 76 pph/30 minutes

LC50 (inhalation, rabbit) = 80 pph/30 minutes

LC50 (inhalation, guinea pig) = 80 pph/30 minutes

SHORT-TERM INHALATION: Dichlorodifluoromethane has very low acute toxicity and acts a weak narcotic. Deaths occurred in rats, but not in guinea pigs after 2-hour exposure at 60% Dichlorodifluoromethane. In various other experiments, rats, guinea pigs, and cats all survived exposures to concentrations as high as 30%-8-% for several hours. It was found that this product produced respiratory-circulatory effects including respiratory depression, bronchio-constriction and tachycardia (abnormal rapidity of heart action) in concentrations of 5-10%. No pathologic changes were observed in guinea pigs, rats, cats, and dogs following four weeks of 3.5 hour exposures at 10%. Mice exposed at 4% 30 minutes a day for 3-6 weeks showed some weak pathology.

SKIN IRRITATION: No significant irritation was observed in rats and rabbits treated with a 30/70 mixture of Dichlorodifluoromethane and trichloromethane.

EYE IRRITATION: No significant irritation was observed in rabbits treated with a 30/70 mixture of Dichlorodifluoromethane and trichloromethane.

EFFECTS ON CARDIOVASCULAR SYSTEM: The cardiac sensitization potential of this product is considered moderate. Five out of 12 dogs exposed to 5% for 5 minutes showed evidence of cardiac arrhythmia. Cardiac sensitization can be induced with endogenous epinephrine at levels of 10-80%. Concentrations of 5-25% cause rapid heartbeat, and high blood pressure in dogs and monkeys.

LONG-TERM INHALATION: Rats, monkeys, dogs, rabbits, and guinea pigs were exposed to 810 ppm Dichlorodifluoromethane 24 hours/day for 90 days. There were no deaths and the only pathologic changes observed was in the liver of exposed guinea pigs. At exposure levels of 20%, there was an occurrence of generalized tremors, slight blood changes, and signs of mild narcosis.

SUSPECTED CANCER AGENT: Dichlorodifluoromethane 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. This gas is classified as follows: ACGIH-A4 (Not Classifiable as a Human Carcinogen).

11. TOXICOLOGICAL INFORMATION (Continued)

IRRITANCY OF PRODUCT: Dichlorodifluoromethane may be slightly irritating to the nose, throat, and tissues of the upper respiratory system. Contact with rapidly expanding gases can cause frostbite to exposed tissue.

SENSITIZATION OF PRODUCT: Dichlorodifluoromethane is not known to cause sensitization in humans. This gas can cause moderate cardiac sensitization in test animals.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects Dichlorodifluoromethane on the human reproductive system.

Mutagenicity: No mutagenicity effects on humans have been described for Dichlorodifluoromethane. The following information has been obtained during clinical studies: Dichlorodifluoromethane was produced negative results in bacterial tests and cultured mammalian cells.

Embryotoxcity: This product has not been reported to cause embryotoxic effects; see following paragraph for further information.

Teratogenicity: No teratogenicity effects on humans have been described for Dichlorodifluoromethane. The following information has been obtained during clinical studies. Tetrology studies in rats and rabbits were negative.

Reproductive Toxicity: No reproductive toxicity effects on humans have been described for Dichlorodifluoromethane.

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, central nervous system disorders, and cardio-vascular conditions may be aggravated by over-exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure. Note: Epinephrine increases the toxicity of Dichlorodifluoromethane on the heart.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for Dichlorodifluoromethane.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The gas will be dissipated rapidly in well-ventilated areas. Dichlorodifluoromethane is a chlorofluorocarbon (CFC) compound. Chlorofluorocarbon compounds have been implicated in the possible depletion of the stratospheric ozone, via a series of complex chemical reactions which occur in the upper atmosphere. Atmospheric ozone is essential in protecting plants and animals from potentially harmful ultraviolet-light exposures. All work practice must be directed at eliminating environmental contamination.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to adverse effects on the cardiovascular system and to exposure to oxygen deficient environments. The symptoms experienced by over-exposed animals would be similar to those described for exposed humans. No adverse effect is anticipated to occur to plant-life, except for frost produced in the presence of rapidly expanding gases.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product'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 cylinders with any residual product to Air Liquide. Do not dispose of locally.

14. TRANSPORTATION INFORMATION

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

PROPER SHIPPING NAME: Dichlorodifluoromethane
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1028
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Non-Flammable Gas
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 126

14. TRANSPORTATION INFORMATION (Continued)

MARINE POLLUTANT: Dichlorodifluoromethane 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 cylinders 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

SARA REPORTING REQUIREMENTS: Dichlorodifluoromethane is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows:

COMPONENT	SARA 302	SARA 304	SARA 313
Dichlorodifluoromethane	NO	YES	YES

SARA THRESHOLD PLANNING QUANTITY: Not applicable.

TSCA INVENTORY STATUS: Dichlorodifluoromethane is listed on the TSCA Inventory.

CERCLA REPORTABLE QUANTITIES (RQ): 5000 lbs.

CALIFORNIA PROPOSITION 65: Dichlorodifluoromethane is not on the California Proposition 65 lists.

STATE REGULATORY INFORMATION: Dichlorodifluoromethane is covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: Dichlorodifluoromethane.
California - Permissible Exposure Limits for Chemical Contaminants: Dichlorodifluoromethane
Florida - Substance List: Dichlorodifluoromethane
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Dichlorodifluoromethane.
Minnesota - List of Hazardous Substances: Dichlorodifluoromethane.
Missouri - Employer Information/Toxic Substance List: Dichlorodifluoromethane.
New Jersey - Right to Know Hazardous Substance List: Dichlorodifluoromethane.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Dichlorodifluoromethane.
Rhode Island - Hazardous Substance List: Dichlorodifluoromethane.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: No.

OTHER U.S. FEDERAL REGULATIONS:

- Dichlorodifluoromethane is not listed in Appendix A as a highly hazardous chemical, per 29 CFR 1910.119: Process Safety Management of Highly Hazardous Chemicals.
  Dichlorodifluoromethane is subject to the reporting requirements of CFR 29 1910.1000.
- Dichlorodifluoromethane is subject to the reporting requirements under Title VI of the Clean Air Act Amendments of 1990: “Stratospheric Ozone Protection”. Dichlorodifluoromethane is listed as a Class II ozone-depleting chemical. This product may be required to bear the following label:
  Warning: Contains Dichlorodifluoromethane, a substance which harms public health and environment by destroying ozone in the upper atmosphere.
- This gas is not subject to the reporting requirements of Section 112(r) of the Clean Air Act.
- Dichlorodifluoromethane is not listed as a Regulated Substance, per 40 CFR, Part 68, of the Risk Management for Chemical Accidental Release Prevention.

OTHER CANADIAN REGULATIONS: Dichlorodifluoromethane is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations.

16. OTHER INFORMATION

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 can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1	*"Safe Handling of Compressed Gases in Containers"*
P-14	*"Accident Prevention in Oxygen-Rich, Oxygen-Deficient Atmospheres"*
SB-2	*"Oxygen Deficient Atmospheres"*
AV-1	*"Safe Handling and Storage of Compressed Gases"*
	"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

AIR LIQUIDE™

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 product. To the best of Air Liquide America Corporation'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 product 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.