

Safety Data Sheet

UN3163 - Liquefied Gas n.o.s.

(Chlorodifluoromethane,

Chlorotetrafluoroethane, Difluoroethane)

(R401B)

www.advancedspecialtygases.com

Section 1: Product and Company Identification

Advanced Specialty Gases

135 Catron Dr. Reno, NV 89512

775-356-5500

IN CASE OF EMERGENCY CALL CHEMTREC: 1-800-424-9300

Product Code: UN3163 - Liquefied Gas n.o.s. (Chlorodifluoromethane, Chlorotetrafluoroethane, Difluoroethane) (R401B)

Section 2: Hazards Identification



Warning

Hazard Classification:

Eye Effects (Category 2.A)

Gases Under Pressure

Hazard Statements:

Causes serious eye irritation

Contains gas under pressure; may explode if heated

Precautionary Statements

Prevention:

Wash thoroughly after handling.

Wear eye protection/face protection.

Response:

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

Protect from sunlight.

Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
Chlorodifluoromethane (HCFC-22) 75-45-6 Difluoroethane (HFC-152a) 75-37-6 Chlorotetrafluoroethane (HCFC-124) 2837-89-0

Chemical Substance	Chemical Family	Trade Names
	Refrigerants	Including: Chlorodifluoromethane (HCFC-22) 75-45-6 61 Difluoroethane (HFC-152a) 75-37-6 11 Chlorotetrafluoroethane (HCFC-124) 2837-89-0 28

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Flush skin with water.	Flush eyes with large amounts of water for at least 15 minutes	Unlikely	Move to fresh air	Not available

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Use any standard agent suitable for surrounding fire.	Halogens, halogen acids and possibly carbonyl halides.	<ul style="list-style-type: none">Wear self-contained breathing apparatus.Not availableNot availableNot available

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Always wear recommended personal protective equipment	Not available	Stop leak if without risk and provide ventilation.

Methods for Cleanup	Other Information
Not available.	

Section 7: Handling and Storage

Handling	Storage
Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125F (52C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.	Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
Chlorodifluoromethane ACGIH TLV 1000 ppm (8hr) OSHA PEL 1000 ppm (8hr) Difluoroethane *1000 ppm TWA (8hr) Chlorotetrafluoroethane *1000 ppm TWA (8hr)

Engineering Controls

No specific controls are needed.

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Eye Protection	Skin Protection	Respiratory Protection
Wear safety glasses for normal conditions	General work clothing and leather gloves would be sufficient	Wear self-contained breathing apparatus.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Liquid gas	Clear	Colorless	N/A	Liquid	Faint sweet ethereal	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not applicable	Not applicable	Not available	Not applicable	Not applicable	Not applicable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-34.7C (-30.5F)	Unknown	107.6 psia @ 70F (bubble); 94.8 psia @ 70F (dew) 250.6 psia @ 130F (bubble); 230.3 psia @ 130F (dew)	~3	1.19 @ 25C (77F)	.1 wt% @ 25C and 1 atmosphere	Neutral	Not Available	>1 COMPARED TO: CC14 = 1	N/a

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
92.9	CHC1F2, C2H4F2, C2HC1F4	N/a	N/A	100	N/A	

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable under normal conditions	Stable under normal conditions	Freshly abraded aluminum surfaces (may cause strong exothermic reaction). Chemically active metals: potassium, calcium, powdered aluminum, magnesium and zinc.

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Halogens, halogen acids and possibly carbonyl halides.	Will not occur.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
LC50 : 4 hr. (rat) - ?300,000 ppm (based on HCFC-22)	Not Available	Symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration will occur when oxygen levels in air are reduced to 12-14%

Eye Irritation	Skin Irritation	Sensitization
Liquid contact can cause severe irritation and frostbite	Irritation would result from defatting action on tissue	No health hazards classified.

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not available	Not Available	Not Available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not Available Invertebrate toxicity: Not Available Algal toxicity: Not Available Phyto toxicity: Not Available Other toxicity: Not Available	Not Available	Not Available	Unlikely to remain in water

Section 13: Disposal Considerations

Disposal must comply with federal, state, and local disposal or discharge laws.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Liquefied Gas n.o.s. (Chlorodifluoromethane, Chlorotetrafluoroethane, Difluoroethane)	UN3163	2.2	Not required	Not available	N/A	N/A	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Liquefied Gas n.o.s. (Chlorodifluoromethane, Chlorotetrafluoroethane, Difluoroethane)	UN3163	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated	Not available	Not available

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not available

OSHA Process Safety

Not available

State Regulations

CA Proposition 65

Not available

Canadian Regulations

WHMIS Classification

Not available

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed	Not available	Not available

Section 16: Other Information

NFPA Rating

Health - 2, Flammability - 1, Reactivity - 0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard