



MATERIAL SAFETY DATA SHEET

MSDS Number: 00192
Product Name: GLC-503

Effective Date: 3/13/98
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SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	GLC-503		
Manufacturer:	Great Lakes Chemical Corporation		
Address:	P.O. Box 2200		
City:	West Lafayette		
State:	Indiana		
Zip:	47996-2200		
Emergency Telephone Number:	1-800-949-5167		
Information Telephone Number:	1-765-497-6100	Fax:	1-765-497-6123
Chemtrec Phone:	1-800-424-9300		
Effective Date:	3/13/98		
Supercede Date:	12/94		
MSDS Prepared By:	Regulatory Affairs Department/Great Lakes Chemical Corporation		
Synonyms:	Trifluoromethane and chlorotrifluoromethane mixture		
Product Use:	Refrigerant		
Chemical Name:	Mixture		
Chemical Family:	Halogenated methanes		

Additional Information

No information available

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS No.	%	EXPOSURE LIMITS
Chlorotrifluoromethane	75729	~60	Y (Hazardous) Not established (OSHA PEL TWA) Not established (OSHA PEL STEL) Not established (OSHA PEL CEIL) Not established (ACGIH TLV TWA) Not established (ACGIH TLV STEL) Not established (ACGIH TLV CEIL)
Trifluoromethane	75467	~40	Y (Hazardous) Not established (OSHA PEL TWA) Not established (OSHA PEL STEL) Not established (OSHA PEL CEIL) Not established (ACGIH TLV TWA) Not established (ACGIH TLV STEL) Not established (ACGIH TLV CEIL)

*Mixture. Indented chemicals components of mixture.

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No information available

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview:	Colorless gas Practically odorless Direct eye or skin contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues. May cause central nervous system effects. Inhalation of high concentrations can be harmful or fatal due to oxygen deprivation and/or heart irregularities.
Relevant Routes of Exposure:	Inhalation
Signs and Symptoms of Overexposure:	Symptoms similar to oxygen deprivation (headache, nausea, dizziness or loss of consciousness) may result from overexposure by inhalation. Heart irregularities such as irregular pulse or heart palpitations may indicate cardiac sensitivity. Cold, white or discolored skin or in severe cases blistering, can be a sign of frostbite caused by cold liquids or gases.
Medical Conditions Generally Aggravated By Exposure:	Persons with preexisting cardiac, respiratory, or central nervous system disorders may be more susceptible to effects of an overexposure. The use of epinephrine or similar compounds can increase susceptibility to heart irregularities caused by excessive exposure to these types of compounds.
Potential Health Effects:	See Section XI for additional information.
Eyes:	Direct eye contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues.
Skin:	Direct skin contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues.
Ingestion:	Not expected to be a hazard in normal industrial use.
Inhalation:	Inhalation of high concentrations can be harmful or fatal due to oxygen deprivation and/or heart irregularities (arrhythmias). Misuse of the product by deliberately inhaling high concentrations of this gas could cause death without warning.
Carcinogenicity:	
NTP:	No
IARC:	No
OSHA:	No
ACGIH:	No
OTHER:	No

Additional Information

No information available

SECTION IV - FIRST AID MEASURES

Eyes: Flush with large volumes of water for at least 15 minutes. Get medical attention.

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SECTION IV - FIRST AID MEASURES

Skin: Flush with water; if frostbite occurs get medical attention.
Ingestion: If conscious, give person 1 to 2 glasses of water. Get medical attention immediately.
Inhalation: Remove person to fresh air; if not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Antidotes: No information available
Notes to Physicians and/or Protection for First-Aiders: The use of epinephrine or similar compounds can increase susceptibility to heart irregularities caused by excessive exposure to these types of compounds.

Additional Information

No information available

SECTION V - FIRE FIGHTING MEASURES

Flammable Limits in Air (% by Volume): Not applicable
Flash Point: Nonflammable gas
Autoignition Temperature: Not available
Extinguishing Media: All conventional media are suitable.
Fire Fighting Instructions: Keep cylinders cool with a water spray applied from a safe distance. Use a self-contained breathing apparatus if containers rupture or release under fire conditions. Do not allow reentry into areas where this material has been released without first ventilating to remove products of combustion/decomposition.
Unusual Fire and Explosion Hazards: Although containers of our product are provided with pressure and temperature relief devices, containers can rupture if exposed to localized heat. Thermal decomposition will generate toxic and corrosive gases.
Flammability Classification: Nonflammable gas
Known or Anticipated Hazardous Products of Combustion: Decomposition by elevated temperatures (fire conditions, glowing metal surfaces) may generate hazardous decomposition products common to other CFCs, HCFCs or HBFCs. These can include hydrogen fluoride, carbon monoxide, carbon dioxide and others.

Additional Information

No information available

SECTION VI - ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Evacuate the area and ventilate. Do not enter areas where

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SECTION VI - ACCIDENTAL RELEASE MEASURES

high concentrations may exist (especially confined or poorly ventilated areas) without appropriate protective equipment including a self-contained breathing apparatus.

Personal Precautions: See Section VIII.

Environmental Precautions: No information available

Additional Information

No information available

SECTION VII - HANDLING AND STORAGE

Handling: Use the same type of precautions as would be used in handling any cryogenic gas.

Use appropriate personal protection equipment.

Avoid eye, skin and clothing contact.

Do not breathe gas.

Use only in a well ventilated area.

Storage: Store in a cool, dry, well-ventilated area away from incompatible materials.

Storage temperature should not exceed 125 degrees F.

Keep container tightly closed.

Protect containers against damage.

Store cylinders upright, secured to a rack or wall to prevent tipping.

Store with valve protection cap in place.

Use hand truck for moving cylinders.

Other Precautions: No information available

Additional Information

No information available

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: No information available

Ventilation Requirements: Use local ventilation to minimize exposure to gas.

Use mechanical ventilation for general area control.

Personal Protective Equipment:

Eye/Face Protection: Chemical splash goggles when handling liquid
Do not wear contact lenses.

Skin Protection: Use lined neoprene gloves if handling liquid.
Clothing designed to minimize skin contact

Respiratory Protection: Wear a NIOSH/MSHA approved self-contained breathing apparatus in emergency situations.
Consult the OSHA respiratory protection information located at 29CFR 1910.134 and the American National Standard Institute's Practices of Respiratory Protection Z88.2.

Other Protective Clothing or Equipment: No information available

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SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines: See Section II.
Work Hygienic Practices: Wash thoroughly after handling.
Wash contaminated clothing before reuse.
Make sure piping is empty before doing maintenance work.

Additional Information

No information available

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

Appearance: Colorless gas
Boiling Point: -89 degrees C
Bulk Density: Not available
Color: Colorless
Decomposition Temperature: Not available
Evaporation Rate: Not available
Freezing Point: Not available
Heat Value: Not available
Melting Point: -163 to -181 degrees C
Molecular/Chemical Formula: CHF₃; CCIF₃
Molecular Weight: NA
Octanol/Water Partition Coefficient: Not available
Odor: Practically odorless
Odor Threshold: Not available
Particle Size: Not available
Percent Volatile: 100
pH Value: Not available
pH Concentration: Not available
Physical State: Gas
Reactivity in Water: Not water reactive
Saturated Vapor Concentration: Not available
Softening Point: Not available
Solubility in Water: Slightly soluble
Specific Gravity or Density (Water=1): Not available
Vapor Density: 3.0
Vapor Pressure: ~38 atm.
Viscosity: Not available
Volatile Organic Compounds: 100
Water/Oil Distribution Coefficient: Not available
Weight Per Gallon: Not available

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SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

No information available

SECTION X - STABILITY AND REACTIVITY

Stability: Stable under normal conditions of handling and use.
Conditions to Avoid: High temperatures
Open flames

Incompatibility With Other Materials: Silver and copper bearing alloys may act as catalysts for decomposition. Alloys with more than 2% manganese should not be used if water is present. Powdered aluminum, zinc, magnesium.

Hazardous Decomposition Products: Thermal decomposition may produce the following:
Hydrogen fluoride
Hydrogen chloride and/or chlorine
Carbon monoxide and carbon dioxide

Hazardous Polymerization: Will not occur
Conditions to Avoid: None

Additional Information

No information available

SECTION XI - TOXICOLOGICAL INFORMATION

VALUE (LD50 OR LC50)	ANIMAL	ROUTES	COMPONENTS
Not determined	Not determined	Not determined	GLC-503

Toxicological Information: The human health hazards of this product are expected to be similar to other liquified gases including N₂, CO₂, CFCs, HCFCs, and HBFCs. Therefore, direct eye or skin contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues. High concentrations can exclude an adequate supply of oxygen to the lungs causing dizziness, confusion, deep breathing, possible nausea and unconsciousness. Concentrations above 20% may cause irregular pulse or palpitations. Through literature searches, RTECS reports trifluoromethane to be mutagenic in *Drosophila melanogaster* at 98 pph/10M.

Additional Information

No information available

SECTION XII - ECOLOGICAL INFORMATION

Ecological Information: Do not release to the environment.

Additional Information

No information available

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SECTION XIII - DISPOSAL CONSIDERATIONS

Disposal Considerations: Non-contaminated product is reclaimable. Contact Great Lakes Chemical Corporation for information. Otherwise, dispose of waste in an approved chemical incinerator equipped with a scrubber as allowed by current Local, State/Province, Federal/Canadian laws and regulations.

Additional Information

No information available

SECTION XIV - TRANSPORT INFORMATION

U.S. DOT

Proper Shipping Name: Chlorotrifluoromethane and trifluoromethane azeotropic mixture
Hazard Class: 2.2
ID Number: UN2599
Packing Group: N/A
Labels: Nonflammable gas
Special Provisions: N/A
Packaging Exceptions: 306
Non-Bulk Packaging: 304
Bulk Packaging: 314, 315
Air/Rail Limit: 75 kg
Air Cargo Limit: 150 kg
Vessel Stowage: A
Other Stowage: N/A
Reportable Quantity: N/A

AIR - ICAO OR IATA

Proper Shipping Name: Chlorotrifluoromethane and trifluoromethane azeotropic mixture
Hazard Class: 2.2
ID Number: UN2599
Subsidiary Risk: N/A
Packing Group: N/A
Hazard Labels: Nonflammable gas
Packing Instructions: 200
Air Passenger Limit Per Package: 75 kg
Packing Instruction - Cargo: 200
Air Cargo Limit Per Package: 150 kg
Special Provisions Code: N/A

WATER - IMDG

Proper Shipping Name: Chlorotrifluoromethane and trifluoromethane azeotropic mixture
Hazard Class: 2.2
ID Number: UN2599
Packing Group: N/A
Subsidiary Risk: N/A

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SECTION XIV - TRANSPORT INFORMATION

Medical First Aid Guide

Code: 350

Additional Information

EmS Code: 2-09

SECTION XV - REGULATORY INFORMATION

U.S. Federal Regulations:

The components of this product are either on the TSCA Inventory or exempt (i.e. impurities, a polymer complying with the exemption rule at 40 CFR 723.250) from the Inventory.

SARA 313

The following materials are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chlorotrifluoromethane (De minimis concentration = 1%)

Users of this product as an Ozone Depleting Chemical replacement are responsible for obtaining EPA SNAP approvals. Consult 40 CFR Part 82.170 for approved SNAP uses or contact Great Lakes Chemical Corporation.

In compliance with Section 611 of the Clean Air Act:

WARNING: Contains chlorotrifluoromethane, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

State Regulations:

New Jersey Right To Know - Yes

International Regulations:

This material (or each component) is listed on the following inventories:

Canada - DLS

EU - EINECS

Australia - AICS

Japan - ENCS

Korea - ECL

Canadian WHMIS Hazard Class and Division = A.

SARA Hazards:

Acute: Yes

Chronic: No

Reactive: No

Fire: No

Pressure: Yes

Additional Information

The above regulatory information represents only selected regulations and is not meant to be a

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SECTION XV - REGULATORY INFORMATION

complete list.

SECTION XVI - OTHER INFORMATION

NFPA Codes:

Health: NR
Flammability: NR
Reactivity: NR
Other: NR

HMIS Codes:

Health: NR
Flammability: NR
Reactivity: NR
Protection: NR

Label Statements: Not available

Other Information:

Abbreviations:
(L) = Loose bulk density in g/ml
LOEC = Lowest observed effect concentration
MATC = Maximum acceptable toxicant concentration
NA = Not available
N/A = Not applicable
NL = Not limited
NOEC = No observed effect concentration
NOEL = No observable effect level
NR = Not rated
(P) = Packed bulk density in g/ml
PNOC = Particulates Not Otherwise Classified
PNOR = Particulates Not Otherwise Regulated
REL = Recommended exposure limit
TS = Trade secret

Additional Information

Information on this form is furnished solely for the purpose of compliance with OSHA's Hazard Communication Standard, 29CFR 1910.1200 and The Canadian Environmental Protection Act, Canada Gazette Part II, Vol. 122, No. 2 and shall not be used for any other purpose.

Revision Information:

Replaces JSD:642

New Format