

Safety Data Sheet

Material Name: HALOCARBON 23

SDS ID: 00232358

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

HALOCARBON 23

Synonyms

MTG MSDS 42; FLUOROFORM; TRIFLUOROMETHANE; CARBON TRIFLUORIDE; METHYL TRIFLUORIDE; ARCTON 1; FLUORYL; FREON 23; FREON F-23; GENETRON 23; PROPELLANT 23; REFRIGERANT 23; R23; UN 1984; CHF₃

Chemical Family

halogenated, aliphatic

Product Use

Industrial and Specialty Gas Applications.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

SPECIALTY CHEMICAL PRODUCTS

1407 Pennsylvania Ave.

South Houston, TX 77587

General Information: 713-944-0900

Emergency #: 1-800-424-9300 (CHEMTREC)

Outside the US: 1-703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Gases Under Pressure - Liquefied gas

Specific Target Organ Toxicity - Single Exposure - Category 3

Simple Asphyxiant

GHS Label Elements

Symbol(s)



Signal Word

Warning

Hazard Statement(s)

Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

May cause drowsiness or dizziness.

Precautionary Statement(s)

Prevention

Use only outdoors or in a well-ventilated area.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Response

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IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

Storage

Protect from sunlight.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
75-46-7	HALOCARBON 23	100

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes

Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

Frostbite, suffocation, central nervous system effects

Delayed

no information on significant adverse effects.

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

carbon dioxide, regular dry chemical, Large fires: Use regular foam or flood with fine water spray.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Negligible fire hazard. Containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

halogenated compounds, oxides of carbon, Hydrogen fluoride

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

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Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Reduce vapors with water spray. Eliminate all ignition sources if safe to do so. Keep unnecessary people away, isolate hazard area and deny entry. Avoid heat, flames, sparks and other sources of ignition. Ventilate closed spaces before entering. Damaged cylinders should be handled only by specialists.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation.

Conditions for Safe Storage, Including any Incompatibilities

Protect from sunlight.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S.

OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

Incompatible Materials

oxidizing materials.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

HALOCARBON 23	75-46-7
ACGIH:	2.5 mg/m3 TWA as F (related to Fluorides)
NIOSH:	250 mg/m3 IDLH as F (related to Fluorides)
OSHA (US):	2.5 mg/m3 TWA as F (related to Fluorides)
Mexico:	2.5 mg/m3 TWA VLE-PPT as F (related to Fluorides)

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

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2 mg/l Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific); 3 mg/l Medium: urine

Time: end of shift Parameter: Fluoride (background, nonspecific) (related to Fluorides)

Engineering Controls

Provide local exhaust or process enclosure ventilation system. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

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Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations

Wear appropriate chemical resistant gloves. Wear insulated gloves.

Protective Materials

neoprene

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Not available	Physical State	gas
Odor	odorless	Color	colorless
Odor Threshold	Not available	pH	Not available
Melting Point	-160 °C (-256 °F)	Boiling Point	-84.4 °C (-120 °F)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not available
Autoignition Temperature	Not available	Flash Point	Not available
Lower Explosive Limit	Not available	Decomposition temperature	>260 °C (>500 °F)
Upper Explosive Limit	Not available	Vapor Pressure	33592 mmHg @ 21 °C
Vapor Density (air=1)	2.417	Specific Gravity (water=1)	1.52 at -100 °C
Water Solubility	0.1 % (@ 25 °C)	Partition coefficient: n-octanol/water	0.64
Viscosity	0.0144 cp	Kinematic viscosity	Not available
Solubility (Other)	Not available	Bioconcentration Factor (BCF)	0.42

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Density	2.86 kg/m ³	Henry's Law Constant	0.0952
KOC	53 (Estimated)	Physical Form	liquefied gas
Volatility	100 %	Molecular Formula	C-H-F ₃
Molecular Weight	70.01		

Solvent Solubility

Soluble

alcohol, acetone, Benzene, Hydrocarbons, chlorinated solvents, ketones, esters, organic acids

Insoluble

glycols, glycerol, phenols

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Incompatible Materials

oxidizing materials.

Hazardous decomposition products

halogenated compounds, Oxides of carbon, Hydrogen fluoride

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

nausea, vomiting, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, Disorientation, loss of coordination, Unconsciousness coma.

Skin Contact

blisters, frostbite

Eye Contact

frostbite, blurred vision

Ingestion

No information on significant adverse effects.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

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Inhalation LC50 Rat >1898 mg/L 4 h (no deaths occurred)

Product Toxicity Data

Acute Toxicity Estimate

Inhalation - Gas	> 20000 ppm
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Immediate Effects

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frostbite, suffocation, central nervous system effects

Delayed Effects

No data available.

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

HALOCARBON 23	75-46-7
ACGIH:	A4 - Not Classifiable as a Human Carcinogen (related to Fluorides)

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

central nervous system effects.

Specific Target Organ Toxicity - Repeated Exposure

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Fish Toxicity

No data available.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility

No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

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Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: TRIFLUOROMETHANE

Hazard Class: 2.2

UN/NA #: UN1984

Required Label(s): 2.2

TDG Information:

Shipping Name: TRIFLUOROMETHANE

Hazard Class: 2.2

UN#: UN1984

Required Label(s): 2.2

International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Gas Under Pressure; Specific Target Organ Toxicity; Simple Asphyxiant

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
HALOCARBON 23	75-46-7	Yes	No	No	Yes	No

Not listed under California Proposition 65

Canada Regulations

Canadian WHMIS Ingredient Disclosure List (IDL)

The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

WHMIS Classification

A

Component Analysis - Inventory

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US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

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Summary of Changes

Updated: 12/23/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL), KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

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