



MATHESON

ask. . .The Gas Professionals™

Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE

SDS ID: MAT06880

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

DICHLORODIFLUOROMETHANE

Synonyms

MTG MSDS 37; CHLOROFLUOROCARBON 12; DICHLORODIFLUOROMETHANE(R-12); DICHLORODIFLUOROMETHANE (CCl₂F₂); DIFLUORODICHLOROMETHANE; ELECTRO-CF 12; CF 12; FC 12; CFC 12; FREON 12; FLUOROCARBON-12; HALON; F 12; HALON 122; R 12; R 12 (REFRIGERANT); UN 1028; CCl₂F₂

Chemical Family

halogenated, Gas

Product Use

Industrial and Specialty Gas Applications.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

MATHESON TRI-GAS, INC.

150 Allen Road, Suite 302

Basking Ridge, NJ 07920

General Information: 1-800-416-2505

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

Outside the US: 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

Specific target organ toxicity - Repeated exposure - Category 1

GHS Label Elements

Symbol(s)



Signal Word

Danger

**MATHESON**

ask. . The Gas Professionals™

Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880****Hazard Statement(s)**

Contains gas under pressure; may explode if heated.

May cause drowsiness or dizziness.

Causes damage to nervous system through prolonged or repeated exposure.

Precautionary Statement(s)**Prevention**

Do not breathe gas.

Use only outdoors or in a well-ventilated area.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Response

Get medical advice/attention if you feel unwell.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Storage

Protect from sunlight. Store in a well-ventilated place.

Keep container tightly closed.

Store locked up.

Disposal

Dispose in accordance with all applicable regulations.

Other Hazards

May cause frostbite upon sudden release of liquefied gas.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
75-71-8	DICHLORODIFLUOROMETHANE	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.



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880****Eyes**

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects**Acute**

frostbite, central nervous system depression

Delayed

nervous system damage

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media**Suitable Extinguishing Media**

regular dry chemical, carbon dioxide, Large fires: Use water spray, fog or regular foam.

Unsuitable Extinguishing Media

Do not direct water at source of leak or safety devices; icing may occur.

Special Hazards Arising from the Chemical

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

Hazardous Combustion Products

Phosgene, halogenated anilines, hydrochloric acid, CARBONYL FLUORIDE, Chlorine, Hydrogen fluoride, fluorocarbons, hydrogen chloride

Fire Fighting Measures

Use extinguishing agents appropriate for surrounding fire. 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. Apply water from a protected location or from a safe distance. Do not get water directly on material. 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). 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



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880****Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Do not touch or walk through spilled material. Do not direct water at spill or source of leak. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Prevent entry into waterways, sewers, basements, or confined areas. Allow substance to evaporate. Ventilate the area. Consider downwind evacuation if material is leaking. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe gas. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Do not eat, drink, or smoke when using this product.

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. Protect from sunlight. Store in a well-ventilated area. Keep container tightly closed. Keep locked up. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

Incompatible Materials

metals, combustible materials, aluminum, Acids

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

DICHLORODIFLUOROMETHANE	75-71-8
ACGIH:	1000 ppm TWA
NIOSH:	1000 ppm TWA; 4950 mg/m ³ TWA
	15000 ppm IDLH



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880**

OSHA (US):	1000 ppm TWA; 4950 mg/m3 TWA
Mexico:	1000 ppm TWA LMPE-PPT; 4950 mg/m3 TWA LMPE-PPT
	1250 ppm STEL [LMPE-CT]; 6200 mg/m3 STEL [LMPE-CT]

EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures

There are no biological limit values for any of this product's components.

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

There are no biological limit values for any of this product's components.

Engineering Controls

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

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

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 10,000 ppm. Any supplied-air respirator. 15,000 ppm. Any supplied-air respirator operated in a continuous-flow mode. Any self-contained breathing apparatus with a full facepiece. Any supplied-air respirator with a full facepiece. Emergency or planned entry into unknown concentrations or IDLH conditions -. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. 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. Escape - . Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister. Any appropriate escape-type, self-contained breathing apparatus.

Glove Recommendations

For the gas: Protective gloves are not required. For the liquid: Wear insulated gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas liquefied gas	Physical State	gas
Odor	faint odor, ether odor	Color	colorless



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880**

Odor Threshold	Not available	pH	Not available
Melting Point	-158 °C (-252 °F)	Boiling Point	-29.8 °C (-22 °F)
Freezing point	Not available	Evaporation Rate	380 (Butyl acetate = 1)
Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	Not available	Flash Point	(Not flammable)
Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	4252.85 mmHg at 20 °C
Vapor Density (air=1)	4.2	Specific Gravity (water=1)	Not available
Water Solubility	0.33 g/L (@ 20 °C)	Partition coefficient: n-octanol/water	Not available
Viscosity	0.0117 cp	Solubility (Other)	Not available
Bioconcentration Factor (BCF)	0.26	Density	1.33 g/cm ³ at 20 °C
Henry's Law Constant	0.343	KOC	356 (Estimated)
Log KOW	2.16	Physical Form	liquefied gas
Volatility	100 %	Molecular Formula	Cl ₂ -C-F ₂
Molecular Weight	120.91		

Solvent Solubility**Soluble**

alcohol, ether, acetic acid, ketones, esters, Hydrocarbons, oils, chlorinated solvents, 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.



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880****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

metals, combustible materials, aluminum, Acids

Hazardous decomposition products

Phosgene, halogenated anilines, hydrochloric acid, CARBONYL FLUORIDE, Chlorine, Hydrogen fluoride, fluorocarbons, hydrogen chloride

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure**Inhalation**

nausea, vomiting, difficulty breathing, irregular heartbeat, headache, drowsiness, fatigue, dizziness, Disorientation, mood swings, tingling sensation, loss of coordination, suffocation, convulsions, Unconsciousness, coma

Skin Contact

blisters, frostbite

Eye Contact

frostbite, eye damage, blurred vision

Ingestion

ingestion of a gas is unlikely

Acute and Chronic Toxicity**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and no selected endpoints have been identified

Immediate Effects

frostbite, central nervous system depression

Delayed Effects

nervous system damage

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880****Component Carcinogenicity**

DICHLORODIFLUOROMETHANE	75-71-8
ACGIH:	A4 - Not Classifiable as a Human Carcinogen

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

Specific Target Organ Toxicity - Repeated Exposure

nervous system

Aspiration hazard

Not applicable.

Medical Conditions Aggravated by Exposure

heart or cardiovascular disorders

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOLEcotoxicity data are available for this product's components

Persistence and Degradability

No data available.

Bioaccumulative Potential

Bioconcentration potential in aquatic organisms is low based on a BCF value of 25.

Mobility

Expected to have moderate mobility in soil.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations.



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880****Component Waste Numbers**

DICHLORODIFLUOROMETHANE	75-71-8
RCRA:	waste number U075

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: Dichlorodifluoromethane

Hazard Class: 2.2

UN/NA #: UN1028

Required Label(s): 2.2

IMDG Information:

Shipping Name: Dichlorodifluoromethane

Hazard Class: 2.2

UN#: UN1028

Required Label(s): 2.2

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

DICHLORODIFLUOROMETHANE	75-71-8
SARA 313:	1 % de minimis concentration
CERCLA:	5000 lb final RQ; 2270 kg final RQ

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

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: Yes Reactivity: No

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
DICHLORODIFLUOROMETHANE	75-71-8	Yes	Yes	Yes	Yes	Yes

Not listed under California Proposition 65**Canadian WHMIS Ingredient Disclosure List (IDL)**



Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE**SDS ID: MAT06880**

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

DICHLORODIFLUOROMETHANE	75-71-8
	1 %

WHMIS Classification

A.

Component Analysis - Inventory

DICHLORODIFLUOROMETHANE (75-71-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	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

Summary of Changes

Updated: 05/01/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; 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; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; 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; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; 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; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH -



MATHESON

ask...The Gas Professionals™

Safety Data Sheet

Material Name: DICHLORODIFLUOROMETHANE

SDS ID: MAT06880

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; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.