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## Safety Data Sheet

**Material Name: HCFC-1122**

**SDS ID: 00244489**

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Material Name**

HCFC-1122

**Synonyms**

2-CHLORO-1,1-DIFLUOROETHYLENE; 1,1-DIFLUOROCHLOROETHYLENE; C<sub>2</sub>HClF<sub>2</sub>

**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.**

Flammable Gases - Category 1

Gases Under Pressure - Liquefied gas

Simple Asphyxiant

**GHS Label Elements**

**Symbol(s)**



**Signal Word**

Danger

**Hazard Statement(s)**

Extremely flammable gas.

Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

**Precautionary Statement(s)**

**Prevention**

Keep away from heat/sparks/open flame/hot surfaces - No smoking.

Avoid breathing gas.

Use only outdoors or in a well-ventilated area.

**Response**

Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Eliminate all ignition sources if safe to do so.

**Storage**

Store in a well-ventilated place.

Protect from sunlight.



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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
359-10-4	2-Chloro-1,1-difluoroethylene	100

**Section 4 - FIRST AID MEASURES****Inhalation**

Do not attempt rescue in confined spaces without adequate protective gear and proper training. 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**

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

**Delayed**

No information on significant adverse effects

**Note to Physicians**

For inhalation, consider oxygen.

**Section 5 - FIRE FIGHTING MEASURES****Extinguishing Media****Suitable Extinguishing Media**

Use water spray, fog, dry chemical, alcohol foam or carbon dioxide. Let burn unless leak can be stopped immediately. Use water spray to cool fire fire-exposed containers.

**Unsuitable Extinguishing Media**

None known.

**Special Hazards Arising from the Chemical**

Extremely flammable. Vapors are heavier than air and may flashback. Containers may rupture or explode if exposed to heat.

**Hazardous Combustion Products**

Hydrogen fluoride, hydrogen chloride, carbon monoxide, Phosgene, CARBONYL FLUORIDE.

**Fire Fighting Measures**

Stop the leak and flow of gas before extinguishing 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. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and

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deny entry. Let the fire burn. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**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. Ventilate closed spaces before entering.

**Methods and Materials for Containment and Cleaning Up**

Keep unnecessary people away, isolate hazard area and deny entry. Protect personnel attempting to shut-off with water spray. Monitor the surrounding area for combustible gas levels and the level of oxygen. Regulations vary. All waste material should be packaged, labeled, transported, and disposed of in accordance with federal and local regulations. Consult the appropriate authorities about waste disposal. Remove all sources of ignition. Use only non-sparking tools. Attempt to stop the leak before entering area. If leak cannot be stopped, allow the gas to release in-place or remove to a safe area and allow the release. Reduce vapors with water spray.

**Environmental Precautions**

Avoid release to the environment.

### Section 7 - HANDLING AND STORAGE

**Precautions for Safe Handling**

Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Wash hands thoroughly after handling. When using, do not eat, drink or smoke. Subject to handling regulations: U.S. OSHA 29 CFR 1910.119.

**Conditions for Safe Storage, Including any Incompatibilities**

Store in a well-ventilated place.

Protect from sunlight.

Store and handle in accordance with all current regulations and standards. Store in a tightly closed container.

Compressed gases can present significant safety hazards. Store in a cool, dry place. Protect from physical damage. Avoid heat, flames, sparks and other sources of ignition. Cylinders should be stored upright (with valve protection cap in place). Store cylinders away from heavily trafficked areas and emergency exits. For additional and specific safe practices consult the following Compressed Gas Association (CGA) publications: P-1 "Safe Handling of Compressed Gases in Cylinders", AV-1 "Safe Handling and Storage of Compressed Gases", and "Compressed Gas Handbook". Grounding and bonding required. Use non-sparking tools and equipment. See original container for storage recommendations. Keep separated from incompatible substances.

**Incompatible Materials**

oxidizing materials, combustible materials

### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**Component Exposure Limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

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

**Engineering Controls**

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. All energized electrical equipment must be designed in accordance with the electrical classification of the area (e.g., Class I, Division I). Ensure compliance with applicable exposure limits.

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**Material Name: HCFC-1122****SDS ID: 00244489****Individual Protection Measures, such as Personal Protective Equipment****Eye/face protection**

Wear chemical safety goggles. A faceshield is recommended. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin Protection**

Fire protective clothing with antistatic control should be worn.

**Respiratory Protection**

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. At any detectable concentration -. 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 canister providing protection against the compound of concern. Any appropriate escape-type, self-contained breathing apparatus. For Unknown Concentrations or Immediately Dangerous to Life or Health -. 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.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	gas	<b>Physical State</b>	liquid
<b>Odor</b>	ethereal	<b>Color</b>	colorless
<b>Odor Threshold</b>	0.14 ppm (Recognition Arsine )	<b>pH</b>	Not available
<b>Melting Point</b>	-138 °C (-216 °F )	<b>Boiling Point</b>	-18.6 °C (-1 °F )
<b>Boiling Point Range</b>	Not available	<b>Freezing point</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Flammability (solid, gas)</b>	Flammable gas
<b>Autoignition Temperature</b>	Not available	<b>Flash Point</b>	(Flammable )
<b>Lower Explosive Limit</b>	Not available	<b>Decomposition temperature</b>	Not available
<b>Upper Explosive Limit</b>	Not available	<b>Vapor Pressure</b>	3 bar @ -20 °C
<b>Vapor Density (air=1)</b>	3.4	<b>Specific Gravity (water=1)</b>	Not available
<b>Water Solubility</b>	(Insoluble, Almost )	<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Viscosity</b>	Not available	<b>Kinematic viscosity</b>	Not available



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<b>Solubility (Other)</b>	Not available	<b>Density</b>	1.25
<b>Physical Form</b>	liquid	<b>Molecular Formula</b>	C2HCICF2
<b>Molecular Weight</b>	98.5		

### Section 10 - STABILITY AND REACTIVITY

**Reactivity**

No reactivity hazard is expected.

**Chemical Stability**

Stable at normal temperatures and pressure. May form explosive mixture with air.

**Possibility of Hazardous Reactions**

Will not polymerize.

**Conditions to Avoid**

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**Incompatible Materials**

oxidizing materials, combustible materials

**Hazardous decomposition products**

Hydrogen fluoride, hydrogen chloride, carbon monoxide, Phosgene, CARBONYL FLUORIDE.

### Section 11 - TOXICOLOGICAL INFORMATION

**Information on Likely Routes of Exposure****Inhalation**

nausea, vomiting, difficulty breathing, irregular heartbeat, headache, fatigue, dizziness, disorientation, mood swings, tingling sensation, convulsions, unconsciousness

**Skin Contact**

frostbite

**Eye Contact**

frostbite

**Ingestion**

ingestion of harmful amounts 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.

**Product Toxicity Data****Acute Toxicity Estimate**

No data available.

**Immediate Effects**

frostbite, suffocation

**Delayed Effects**

No information on significant adverse effects.

**Irritation/Corrosivity Data**

No animal testing data available for skin or eyes.

**Respiratory Sensitization**

No data available.

**Dermal Sensitization**

No data available.

**Component Carcinogenicity**



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None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

**Germ Cell Mutagenicity**

No data available.

**Tumorigenic Data**

No data available

**Reproductive Toxicity**

No data available.

**Specific Target Organ Toxicity - Single Exposure**

No target organs identified.

**Specific Target Organ Toxicity - Repeated Exposure**

No target organs identified.

**Aspiration hazard**

No data available.

**Medical Conditions Aggravated by Exposure**

No data available.

### Section 12 - ECOLOGICAL INFORMATION

**Component Analysis - Aquatic Toxicity**

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

**Persistence and Degradability**

No data available for this product.

**Bioaccumulative Potential**

No data available for this product.

**Mobility**

No data available for this product.

### 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.

### Section 14 - TRANSPORT INFORMATION

**US DOT Information:**

**Shipping Name:** LIQUEFIED GAS, N.O.S. , ( Contains: 2-Chloro-1,1-difluoroethylene )

**Hazard Class:** 2.2

**UN/NA #:** UN3163

**Required Label(s):** 2.2

**IMDG Information:**

**Shipping Name:** LIQUEFIED GAS, N.O.S. , ( Contains: 2-Chloro-1,1-difluoroethylene )

**Hazard Class:** 2.2

**UN#:** UN3163

**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**



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None of this products 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**

Flammable; Gas Under Pressure; Simple Asphyxiant

**U.S. State Regulations**

None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA.

**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.

**Component Analysis - Inventory****2-Chloro-1,1-difluoroethylene (359-10-4)**

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 - NCI (Draft)
No	No	EIN	No	No	No	Yes	No	No	No	No	No	No	No	No

**Section 16 - OTHER INFORMATION****NFPA Ratings**

Health: 2 Fire: 4 Reactivity: 0

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

**Summary of Changes**

Updated: 12/30/2015

**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; 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; NDSL - Non-Domestic Substance List (Canada); 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



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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; 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 NCI (Draft) - Vietnam National Chemicals Inventory (NCI) (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada) .

### **Other Information**

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