

**Emergency Telephone Numbers:**

(817) 636-2089 RHOME PLANT  
(800) 424-9300 CHEMTREC

**Product Name:** 2,2-Dichloro-1,1,1-trifluoroethane, R123

**Company identification:** Diversified Pure Chem  
11050 S. Hwy 287  
Rhome, TX 76078

**SECTION I PRODUCT IDENTIFICATION / COMPANY INFORMATION**

**Product name** 2,2-Dichloro-1,1,1-trifluoroethane, R123  
**Chemical formula** CCl<sub>2</sub>HCF<sub>3</sub>

**SECTION II COMPOSITION / DATA ON COMPONENTS**

**GHS Classification:** Hazardous to the Ozone Layer, 1, H420  
Specific Target Organ Toxicity (Single Exposure), 3, H335 / H336

**GHS Label Elements  
Symbol(s):**



**Signal Words:** Warning

**GHS Hazard Statements:** **Physical Hazards**

**Health Hazards**

H335: May cause respiratory irritation  
H336: May cause drowsiness or dizziness  
H420 : Harms public health and the environment by destroying ozone in the upper atmosphere.

**Environmental Hazards**

H420 : Harms public health and the environment by destroying ozone in the upper atmosphere.

**Other Hazards**

*Vapors are heavier than air and can cause suffocation by reducing available oxygen. May cause cardiac arrhythmia.*

**GHS Precautionary Statements**

**Prevention:** P261: Avoid breathing vapors.  
P271: Use only outdoors or in a well-ventilated area.  
P273: Avoid release to the environment.

**Response:** P304 + P340 : If Inhaled: Remove person to fresh air and keep comfortable for breathing.  
P312: Call a POISON CENTER or doctor/ physician if you feel unwell.

**Storage:** P403 + P233: Store in well-ventilated place. Keep container tightly closed.  
P405: Store locked up.

**Disposal:** P501: Dispose of contents/container to an approved waste disposal plant.  
P502 : Refer to manufacturer/supplier for information on recovery/recycling.

---

**SECTION III COMPOSITION / INFORMATION ON INGREDIENTS**

---

Material	CAS Number	EINECS	%
2,2-Dichloro-1,1,1-trifluoroethane, R123*	306-83-2	206-190-3	100

*\*Toxic Chemical Release Reporting is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.*

---

**SECTION IV FIRST AID MEASURES**

---

**Emergency First Aid Procedures****Inhalation**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician. Do not give drugs from adrenaline-ephedrine group.

**Skin Contact**

After contact with skin, wash immediately with plenty of water. Take off all contaminated clothing immediately. Wash contaminated clothing before re-use. If symptoms persist, call a physician.

**Eye Contact**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**Ingestion**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician immediately.

**Notes To Physicians**

Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions. Overdoses may cause paresthesias, generalized weakness, listlessness, vertigo, confusion, hypotension, cardiac arrhythmias and heartblock.

**Potential Health Effects**

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse or deliberate inhalation can be fatal. Vapors are heavier than air and pose a threat of suffocation if trapped in enclosed or low places. Inhalation may cause dizziness, headache, confusion, incoordination, and loss of consciousness.

Immediate effects of overexposure by inhalation may include central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness. Gross overexposure may cause irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Other effects include fatality from gross over-exposure.

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the central nervous system, cardiovascular system.

**Carcinogenicity Information**

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

---

**SECTION V FIRE FIGHTING MEASURES**

---

**Flammable Properties:**

This product is not flammable at ambient temperatures and atmospheric pressure. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

**Suitable Extinguishing Media:**

As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning. Cool closed containers exposed to fire with water spray.

**Fire Fighting Procedures:**

This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources. Container may rupture on heating.

For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant. Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done safely. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

**Unusual Fire and Explosion Hazards:**

Decomposition may occur.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:

- Carbon monoxide
- Carbon dioxide (CO<sub>2</sub>)
- Carbonyl halides
- Hydrogen fluoride
- Hydrogen chloride gas

---

**SECTION VI ACCIDENTAL RELEASE MEASURES**

---

**Steps To Be Taken If Material Is Released or Spilled**

Ventilate area, especially low or enclosed places where heavy vapors might collect. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. If confined space - use self contained breathing apparatus. Remove open flames. Consult local fire authorities. Use self-contained breathing apparatus (SCBA) for large spills or releases. **\*\* COMPLY WITH ALL STATE AND LOCAL REGULATIONS \*\***

**Personal Precautions:** Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Ventilate the area.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Avoid accumulation of vapours in low areas. Unprotected personnel should not return until air has been tested and determined safe. Ensure that the oxygen content is  $\geq 19.5\%$ .

**Environmental Precautions:** Stop spill/release if it can be done safely. Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers).

**Methods for Containment and Clean-Up:** Notify relevant authorities in accordance with all applicable regulations.

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**SECTION VII HANDLING AND STORAGE**

**Precautions for safe handling:** Comply with state and local regulations. Use good personal hygiene practices and wear appropriate personal protective equipment.

Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Do not use in areas without adequate ventilation. Perform filling operations only at stations with exhaust ventilation facilities. Keep away from heat. Open drum carefully as contents may be under pressure.

**Conditions for safe storage:** Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well ventilated areas. Store only in approved containers. Keep product and empty container away from heat and sources of ignition. Keep away from incompatible materials.

**SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION**
**Exposure Limits**

Component	ACIGH 2014 TLV (TWA)	ACIGH 2014 TLV (STEL)	OSHA PEL (TWA)	OTHER PEL
2,2-Dichloro-1,1,1-trifluoroethane				AEL Dupont 50 ppm 8 & 12 hr. TWA

**Engineering Controls** Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

**Personal Protection**

**Eye/Face Protection:** The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

**Skin Protection:** Impervious, insulated gloves recommended.

**Respiratory Protection:** In case of insufficient ventilation wear suitable respiratory equipment. Self-contained breathing apparatus (SCBA) is required if a large release occurs. A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH). A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

*Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.*

**SECTION IX PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance &amp; Odor:</b>	CLEAR, COLORLESS LIQUID WITH SLIGHT ETHEREAL ODOR.	
<b>Odor Threshold:</b>	No data	
<b>pH:</b>	Not Applicable	
<b>Melting / Freezing Point:</b>	-107 °C	<b>Initial Boiling Point / Range:</b> 27.8 °C
<b>Flash Point (Method):</b>	Not Applicable	<b>Evaporation Rate:</b> > 1 (ETHYL ETHER = 1.0)
<b>Lower Explosion Limit:</b>	Not Applicable	<b>Upper Explosion Limit:</b> Not Applicable
<b>Vapor Pressure @ 77 °F:</b>	13.3 psia	<b>Vapor Density (air = 1.00):</b> 5.3
<b>Liquid Density @ 77 °F:</b>	1.4638 g/cm <sup>3</sup>	<b>Solubility in Water @ 77 °F:</b> 0.21%
<b>Percent Volatile by Volume:</b>	100%	<b>Auto-ignition temperature:</b> No data
<b>Decomposition Data:</b>	No data	<b>Viscosity:</b> No data

**SECTION X STABILITY AND REACTIVITY**
**Chemical Stability**

Material is stable. However, avoid open flames and high temperatures.

**Incompatibility With Other Materials**

Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc. Contact with chlorine or other strong oxidizing agents should be avoided, Calcium, Potassium, Barium, Lithium.

**Decomposition**

Decomposition products are hazardous. R-11 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming Carbon monoxide, Carbon dioxide (CO<sub>2</sub>), Carbonyl halides, Hydrogen fluoride, Hydrogen chloride gas.

**Polymerization**

Polymerization will not occur.

**SECTION XI TOXICOLOGICAL INFORMATION**
**Inhalation:**

Acute inhalation toxicity	:	LC50: 32000 ppm Exposure time: 4 h Species: rat
	:	LC50: 28000 ppm Exposure time: 4 h Species: hamster
Inhalation	:	Target Organs: Central nervous system
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	:	20000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	:	10000 ppm , Dog Cardiac sensitization
Dermal LD50	:	> 2,000 mg/kg , Rabbit
Dermal LD50	:	> 2,000 mg/kg , Rat
Oral LD50	:	9,000 mg/kg , Rat Respiratory effects Abnormal posture
Skin irritation	:	No skin irritation, Rabbit Not expected to cause skin irritation based on expert review of the properties of the substance.
Eye irritation	:	No eye irritation, Rabbit Not expected to cause eye irritation based on expert review of the properties of the substance.
Skin sensitization	:	Does not cause skin sensitisation., Guinea pig

**Safety Data Sheet**

Did not cause sensitisation on laboratory animals. Not expected to cause sensitization based on expert review of the properties of the substance.

Does not cause respiratory sensitisation., multiple species

Repeated dose toxicity	:	Inhalation Rat - vapour No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.
Carcinogenicity	:	Not classifiable as a human carcinogen. The observed tumors do not appear to be relevant for men.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed no reproductive toxicity. No effects on or via lactation
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	Cardiac sensitisation threshold limit : 124000 mg/m3

---

**SECTION XII ECOLOGICAL INFORMATION**


---

**General**

Covered by the 'Montreal Protocol'. May have damaging effect on ozone layer. When discharged in large quantities may contribute to the greenhouse effect.

Ozone depletion factor    0.02 (R11=1)  
 Global warming factor    77 (CO2=1)

**Aquatic Toxicity**

2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) 55.5 mg/l
96 h ErC50	:	Pseudokirchneriella subcapitata (green algae) 96.6 mg/l
96 h EbC50	:	Pseudokirchneriella subcapitata (green algae) 67.8 mg/l
48 h EC50	:	Daphnia magna (Water flea) 17.3 mg/l

**Environmental Fate**

2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)

Biodegradability	:	24 % Not readily biodegradable.
Bioaccumulation	:	Bioconcentration factor (BCF) : 33 Bioaccumulation is unlikely.

**SECTION XIII DISPOSAL INFORMATION**
**Waste Disposal**

Must not be disposed of into the atmosphere! Comply with Federal, State, and local regulations. Reclaim by distillation or remove to a permitted waste disposal facility. This product is subject to U.S. Environmental Protection Agency Clean Air Act Regulations Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

*\*\* Comply With All State and Local Regulations \*\**

**SECTION XIV TRANSPORT INFORMATION**
**Transport Information**

SHIPPING INFORMATION - DOT

Not classified as dangerous in the meaning of transport regulations.

**SECTION XV REGULATIONS**
**Regulatory Information**
**U.S. FEDERAL REGULATIONS**

TSCA Inventory Status	:	Reported/Included.
SARA 302 Components	:	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	:	The following components are subject to reporting levels established by SARA Title III, Section 313
	:	2,2-Dichloro-1,1,1-trifluoroethane

**TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312**

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	No

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): 2,2-Dichloro-1,1,1-trifluoroethane

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**SECTION XVI OTHER INFORMATION**
**NPCA - HMIS RATINGS**

<b>HEALTH</b>	<b>2</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>REACTIVITY</b>	<b>0</b>
PERSONAL PROTECTION	-

*(Personal Protection Information To Be Supplied By The User)*

---

## Safety Data Sheet

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained. The information given is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.