

Emergency Telephone Numbers:

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

Product Name: 1,1,2 Trichlorotrifluoroethane, R113

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

SECTION I PRODUCT IDENTIFICATION / COMPANY INFORMATION

Product name 1,1,2-Trichlorotrifluoroethane, R113
Chemical formula CCl₂FCClF₂

SECTION II COMPOSITION / DATA ON COMPONENTS

GHS Classification: Hazardous to the Ozone Layer, 1, H420
Hazardous to the Aquatic Environment – Long Term (Chronic), 2, H411

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



Signal Words: Warning

GHS Hazard Statements: **Physical Hazards**

Health Hazards

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.

H411 : Toxic to aquatic life with long lasting effects.

Other Hazards

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

GHS Precautionary Statements

Prevention: P273: Avoid release to the environment.
P502 : Refer to manufacturer/supplier for information on recovery/recycling.
Response: P391: Collect spillage.
Disposal: P501: Dispose of contents/container to an approved waste disposal plant.

SECTION III COMPOSITION / INFORMATION ON INGREDIENTS

Material	CAS Number	EINECS	%
1,1,2-Trichlorotrifluoroethane, R113*	76-13-1	200-936-1	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 (CO₂)
- 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.

Safety Data Sheet

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
1,1,2 Trichlorotrifluoromethane		1250 ppm	1000 ppm	

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

Appearance & Odor:	CLEAR, COLORLESS LIQUID WITH SLIGHT ETHEREAL ODOR.		
Odor Threshold:	No data		
pH:	Not Applicable		
Melting / Freezing Point:	-35 °C	Initial Boiling Point / Range:	47.6 °C
Flash Point (Method) :	Not Applicable	Evaporation Rate:	> 1 (ETHYL ETHER = 1.0)
Lower Explosion Limit:	Not Applicable	Upper Explosion Limit:	Not Applicable
Vapor Pressure @ 77 °F:	6.5 psia	Vapor Density (air = 1.00):	6.5
Liquid Density @ 77 °F:	1.563 g/cm ³	Solubility in Water @ 77 °F:	0.017%
Percent Volatile by Volume :	100%	Auto-ignition temperature:	680 °C
Decomposition Data:	No data	Viscosity:	No data

SECTION X STABILITY AND REACTIVITY

Chemical Stability

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

Safety Data Sheet
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 (CO₂), Carbonyl halides, Hydrogen fluoride, Hydrogen chloride gas.

Polymerization

Polymerization will not occur.

SECTION XI TOXICOLOGICAL INFORMATION

Inhalation:

Acute oral toxicity	:	LD50: 43,000 mg/kg Species: rat
Acute inhalation toxicity	:	LC50: 52500 ppm Exposure time: 4 h Species: rat
Acute dermal toxicity	:	LD50: > 11,000 mg/kg Species: rabbit
Sensitisation	:	Cardiac sensitization Species: dogs Note: Exposure levels of 5,000 ppm and greater resulted in increased sensitivity of the heart to adrenalin.
Repeated dose toxicity	:	Species: rat NOAEL (No observed adverse effect level): 12500 ppm
Genotoxicity in vitro	:	Result: negative
Genotoxicity in vivo	:	Result: negative
Further information	:	Note: Did not show carcinogenic effects in animal experiments. Animal testing did not show any effects on foetal development. In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects May cause cardiac arrhythmia.

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 1 (R11=1)
Global warming factor 6130 (CO₂=1)

Ecotoxicity effects

Toxicity to fish	:	LC50: 1,250 mg/l Exposure time: 96 h Species: Fathead minnow
		LC50: 7 – 14 mg/l

Safety Data Sheet

Exposure Time: 96 h
Species: Danio rerio (zebra fish)

Elimination information (persistence and degradability)

Biodegradability : Note: Minimal

Further information on ecology

Additional ecological Information : Accumulation in aquatic organisms is low. This product contains greenhouse gases which may contribute to global warming. Do NOT vent to the atmosphere. To comply with provisions of the U.S. Clean Air Act, any residual must be recovered.

This product is subject to U.S. Environmental Protection Agency Clean Air Act Regulations at 40 CFR Part 82. Section 611 requires the following label text on all shipments of this product:

Warning: Contains Trichlorotrifluoroethane (CFC-113), a substance which harms public health and environment by destroying ozone in the upper atmosphere. Refer to sections 610 and 612 for list of acceptable and unacceptable uses for this product.

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**US DOT HAZARD CLASS:**

For individual packages that contain LESS THAN the Reportable Quantity (5000 lbs.): Not regulated.

For individual packages that contain MORE THAN the Reportable Quantity (5000 lbs.):
RQ, UN3082, Environmentally Hazardous Substances, Liquid, n.o.s.
(1,1,2-Trichlorotrifluoroethane), 9, PG III

US DOT ID NUMBER:

For individual packages that contain LESS THAN the Reportable Quantity (5000 lbs.): Not Applicable.

For individual packages that contain MORE THAN the Reportable Quantity (5000 lbs.):
RQ, UN3082, Environmentally Hazardous Substances, Liquid, n.o.s.
(1,1,2-Trichlorotrifluoroethane), 9, PG III

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
	:	1,1,2 Trichlorotrifluoroethane 76-13-1

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute	Yes
Chronic	No
Fire	No
Reactivity	No
Pressure	No

CERCLA Reportable Quantity - Yes (5000 lbs)

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.
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SECTION XVI OTHER INFORMATION
NPCA - HMIS RATINGS

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	-

(Personal Protection Information To Be Supplied By The User)

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.