

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.

MATERIAL SAFETY DATA SHEET (MSDS)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Refrigerant R12**CHEMICAL NAME:** Dichlorodifluoromethane**CHEMICAL FAMILY:** Halogenated Aliphatic Hydrocarbon**FORMULA:** CCl₂F₂**SYNONYMS:** Fluorocarbon 12; R12 Fluorocarbon; Refrigerant 12; Halon 12, FC12; F-12; CFC12**NAME AND ADDRESS:**

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.
3316 National Avenue
San Diego, CA 92113

TELEPHONE:

Emergency Phone: (800) 633-8253 (24 hr.)
Routine information call: (619) 234-6750
Weekdays 7:30 AM – 5:00 PM

[USE]: Refrigerant, medium & high temp. refrigeration and air conditioning

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME /CAS NUMBER	PERCENTAGE	OSHA PEL	ACGIH TLV
Methane, Dichlorodifluoro- /75-71-8	100%	1000 ppm, 4950 mg/m ³ , 8 Hr. TWA	1000 ppm, 4950 mg/m ³ , 8 Hr. TWA, A4

[LD₅₀]: Not Req'd.**[LC₅₀]:** Not Req'd.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION: Avoid breathing vapors and liquid contact with skin or eyes.
Use with sufficient ventilation to keep employee exposure below minimum limits.
Liquid contact can cause frostbite.
Self-contained breathing apparatus may be required for rescue workers

POTENTIAL HEALTH EFFECTS INFORMATION:**ROUTES OF EXPOSURE:**

INHALATION: High concentration of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse or deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air.

Inhalation of the vapors may cause temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; temporary alteration of the heart's electrical activity with irregular pulse, palpitations or inadequate circulation, or the effects of exclusion of oxygen with grossly excessive exposures.

EYE CONTACT: Overexposure by eye contact with the vapors may include eye irritation with discomfort, tearing, or blurring of vision..

SKIN CONTACT: Contact with liquid may cause frostbite.

[SKIN ABSORPTION]: Not probable

[INGESTION]: Ingestion is not considered a potential route of exposure.

CHRONIC EFFECTS: None established

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

OTHER EFFECTS OF OVEREXPOSURE: None expected

CARCINOGENICITY: 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.

4. FIRST AID MEASURES

INHALATION: If large concentrations are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

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

SKIN CONTACT: In case of contact, flush skin with water. Treat for frostbite if necessary by gently warming affected area.

INGESTION: Ingestion is not considered a potential route of exposure.

NOTES TO PHYSICIAN: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should only be used with special caution in situations of emergency life support.

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5. FIRE FIGHTING MEASURES

FLASH POINT: Will not burn

AUTOIGNITION: >750°C (>1382°F)

AUTODECOMPOSITION : >760°C (>1400°F)

FLAMMABLE LIMITS IN AIR BY VOLUME:

LOWER: Not applicable

UPPER: Not applicable

EXTINGUISHING MEDIA: As appropriate for combustibles in area.

SPECIAL FIRE FIGHTING INSTRUCTIONS: 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.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Cylinders are equipped with pressure and temperature relief devices but still may rupture under fire conditions. Decomposition may occur.

HAZARDOUS COMBUSTION PRODUCTS: Can react violently if in contact with alkali or powered alkaline earth metals such as sodium, potassium, calcium, barium, powered aluminum, magnesium and zinc.

GENERAL HAZARDS: Decomposition products are hazardous. Refrigerant R12 can be decomposed by high temperatures (open flames, glowing metal surfaces, ect.) forming hydrochloric and hydrofluoric acids – possibly carbonyl halides.

[SENSITIVITY TO STATIC DISCHARGE]: None

[SENSITIVITY TO MECHANICAL IMPACT]: None

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate personal protective equipment during clean-up.

Ventilate spill area, especially low or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) for large spills. Comply with Federal, State, and local regulations on reporting releases.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a cool, well-ventilated area of low fire risk. Keep cylinders dry. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over. Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not heat above 52°C (125°F). Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.

PRECAUTIONS TO BE TAKEN IN HANDLING: Avoid breathing vapors and contact of liquid with skin or eyes. Use a suitable hand truck for cylinder movement. Never attempt to lift a cylinder by its valve protection cap. Never apply flame or localized heat directly to any part of the cylinder. High temperature may cause damage to cylinder and/or premature failure of pressure relief device which will result in venting of cylinder contents. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when handling liquid. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

RESPIRATORY PROTECTION (SPECIFY TYPE):

General Use: Under normal manufacturing conditions, no respiratory protection is required when using this product.

Emergency Use: Self contained breathing apparatus (SCBA) is required if a large release occurs.

PROTECTIVE GLOVES: Impervious gloves should be used when handling liquid. Work gloves are recommended when handling cylinders.

EYE PROTECTION: Chemical splash goggles should be used when handling liquid. Safety glasses are recommended when handling cylinders.

OTHER PROTECTIVE EQUIPMENT: Safety shoes are recommended when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

MOLECULAR WEIGHT: 120.93

LIQUID DENSITY: 1.315 g/cc at 25°C (77°F)

BOILING POINT (1 ATM): -29.8°C (-21.6°F)

VAPOR PRESSURE (AT 25°C): 94.5 psia

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VAPOR DENSITY (Air = 1): 4.26 at 25°C (77°F)

% VOLATILES: 100 wt%

SOLUBILITY IN WATER: 0.028% wt. at 1 atm & 25°C

[pH]: Neutral

APPEARANCE, ODOR AND STATE: Clear, colorless gas with a slight ethereal odor (shipped as liquified gas).

[COEFFICIENT OF WATER/OIL DISTRIBUTION]: Not applicable.

[ODOR THRESHOLD]: Not applicable.

10. STABILITY AND REACTIVITY

STABILITY: Material is stable.

CONDITIONS TO AVOID: Open flames and high temperatures.

INCOMPATIBILITY (Materials to Avoid): Incompatible with alkali or alkaline earth metals – powered Al, Zn, Be, etc.

REACTIVITY:

- A) **HAZARDOUS DECOMPOSITION PRODUCTS:** Decomposition products are hazardous. R12 can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides. These are toxic and corrosive.
- B) **HAZARDOUS POLYMERIZATION:** Will not occur.

11. TOXICOLOGICAL INFORMATION

[IRRITANCY OF MATERIAL]: None

[SENSITIZATION TO MATERIAL]: None

[REPRODUCTIVE EFFECTS]: None

[TERATOGENICITY]: None

[MUTAGENICITY]: None

[SYNERGISTIC MATERIALS]: None

12. ECOLOGICAL INFORMATION

R12 refrigerant is a Class I ozone depleting chemical (40 CFR Part 82). R12 refrigerant is not listed as a marine pollutant by DOT (49 CFR Part 171). Discharged product is not a hazardous waste under RCRA, 40 CFR 261.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Comply with Federal, State and local regulations. Reclaim by distillation or remove to a permitted waste facility.

14. TRANSPORT INFORMATION

DOT/IMO SHIPPING NAME: Dichlorodifluoromethane

HAZARD CLASS: Nonflammable Gas 2.2

IDENTIFICATION NUMBER: UN 1028

[PIN]: 1028

PRODUCT RQ: 5000 lbs. 2270 kg.

SHIPPING LABEL(s): Nonflammable Gas

PLACARD (When required): Nonflammable Gas

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards and should be discouraged.

15. REGULATORY INFORMATION

The following information concerns selected regulatory requirements potentially applicable to this product. Not all such requirements are identified. Users of this product are responsible of their own regulatory compliance on a federal, state [provincial], and local level.

U.S. FEDERAL REGULATIONS:**EPA - ENVIRONMENTAL PROTECTION AGENCY**

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR Parts 117 and 302):

Hazardous Substance: Yes

SARA: Superfund Amendment and Reauthorization Act

SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR Part 355).

Extremely Hazardous Substances: No

Threshold Planning Quantity (TPQ): Not applicable

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SECTIONS 311/312: Require submission of material safety data sheets (MSDSs) and chemical inventory reporting with identification of EPA defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

IMMEDIATE: Yes

PRESSURE: Yes

DELAYED: No

REACTIVITY: No

FIRE: No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

METHANE, DICHLORODIFLUORO- disclosure as a toxic chemical is required. Reportable Quantity: 5000 lbs

40 CFR PART 68: Risk Management Programs for Chemical Accidental Release Prevention. Requires the development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

TSCA: Toxic Substance Control Act: METHANE, DICHLORODIFLUORO- is listed on the TSCA inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR Part 1910.119: Process Safety Management of Highly Hazardous Chemicals. Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals, listed on Appendix A of the standard.

METHANE, DICHLORODIFLUORO- is not listed as a highly hazardous chemical.

[CANADIAN REGULATIONS:]

[Controlled Product Hazard Class B2,D2. This MSDS has been prepared in compliance with Controlled Product Regulations.]

16. OTHER INFORMATION

SPECIAL PRECAUTIONS:

Use piping and equipment adequately designed to withstand pressures to be encountered. Use a check valve or other protective apparatus in any line or piping from cylinder to prevent reverse flow.

Shipment of compressed gas containers which have not been filled with the owner's consent is a violation of Federal law (49 CFR Part 173.301(b)).

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

OTHER INFORMATION:

This product may be required to bear the following label: **Warning:** Contains Dichlorodifluoromethane, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

NFPA RATINGS:

HEALTH: = 1
FLAMMABILITY: = 0
REACTIVITY: = 1
SPECIAL: = None

HMIS RATINGS:

HEALTH: = 1
FLAMMABILITY: = 0
REACTIVITY: = 1

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

THREADED:

CGA 660

PIN-INDEXED YOKE:

Not applicable

ULTRA HIGH INTEGRITY:

Not applicable

Use the proper CGA connections, DO NOT USE ADAPTERS

Further information can be found in pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

[PREPARED BY]: Stody Industrial and Welding Supply, Inc.