

1. Identification

Product name R22
Synonyms -
CAS # See section 3
Product code -
Product use Used as refrigerants, aerosol insecticide.
Manufacturer/Supplier
Supplier (Manufacturer): iGas USA, Inc.
Address: 8105 Anderson Road, Tampa, FL 33634
Contact person (E-mail): projects@igasusa.com
Telephone: (813) 443-0757
Fax: (813) 886-7900
Emergency telephone Number: Chemtrec: 1-800-424-9300

2. Hazard(s) identification

GHS classification

Physical hazards Gases under pressure Liquefied gas
Health hazards Not classified
Environmental hazards Not classified

GHS label elements

Hazard Pictograms



Signal word Warning
Hazard statement Contains gas under pressure; may explode if heated.

Precautionary statement

Prevention Not applicable.
Response Not applicable.
Storage Protect from sunlight. Store in a well-ventilated place.
Disposal Not applicable.

3. Composition / information on ingredients

Components	CAS#	Percent
Chlorodifluoromethane	75-45-6	≥99.9%

4. First-aid Measures

First aid procedures

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

Call a physician.

Skin contact

In cases of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician. Treat for frostbite, if necessary, by gently warming affected area. Wash contaminated clothing before reuse.

Inhalation

If high 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.

Ingestion

Ingestion is not considered a potential route of exposure.

Notes to physician

Treat symptoms.

5. Fire-fighting measures

Flammable properties

Not available.

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media. Use water spray, alcohol-resistant foam, dry chemical, carbon dioxide (CO₂).

Unsuitable extinguishing media

Not available.

Firefighting equipment/instructions

Shut off gas supply if this can be done safely. If possible, take container out of dangerous zone. Cool cylinders with water spray. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

Hazardous combustion products

Hydrogen chloride, hydrogen fluoride, carbonyl halides, chlorine compounds, fluorocarbons, carbon oxides. Exposure to decomposition products may be a hazard to health.

6. Accidental release measures

Personal precautions

Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up

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

7. Handling and storage

Handling

Avoid breathing high concentrations of vapors and avoid liquid contact with skin or eyes. Use in well ventilated area away from possible ignition sources. Use with sufficient ventilation to keep employee exposure below recommended limits.

Storage

Keep containers in cool clean and dry area. Do not heat above 52°C (125°F).

8. Exposure controls / personal protection

Control parameters:

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA:

Source	Ingredient	TWA	STEL	Peak
US ACGIH Threshold Limit Values (TLV)	Chlorodifluoromethane	1000 ppm	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	Chlorodifluoromethane	3500 mg/m ³ / 1000 ppm	4375 mg/m ³ / 1250 ppm	Not Available

EMERGENCY LIMITS:

Ingredient	TEEL-1	TEEL-2	TEEL-3
Chlorodifluoromethane	1,250 ppm	2100 ppm	2400 ppm

Ingredient	Original IDLH	Revised IDLH
Chlorodifluoromethane	Not Available	Not Available

Exposure controls:

Appropriate engineering controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Individual protection measures, such as personal protective equipment:

Eye / face protection Sufficient eye protection should be worn. When handling compressed gas, at least glasses with side protection should be worn. When handling liquid gas, chemical safety goggles must be used as well as a protective shield.

Skin protection Body protection: Use protective boots while handling gas cylinders.
Hand protection: Wear leather gloves to prevent frostbite injuries from rapidly expanding gas when handling pressurized gas bottles.

Respiratory protection In an emergency (e.g.: unintentional release of the substance, exceeding the occupational exposure limit value) respiratory protection must be worn. Consider the maximum period for wear. Wear self-contained breathing apparatus. Do not use filter respirator.

General hygiene considerations Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.

9. Physical and chemical properties

Appearance

Physical state	Gas
Form	Compressed liquefied gas
Color	Clear, colorless
Odor	Slight ethereal
Odor threshold	Not available
pH	Not available
Vapor pressure	423.2 kPa
Melting point/Freezing point	-146°C(-230.8°F)
initial boiling point and boiling range	-40.8°C(-41.4°F)

Flash point	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Non-flammable
Explosion limits	Not available
Vapor density	3.03 at 25°C (77°F) (Air =1)
Relative density	Not available
Solubility (water)	Soluble (3 g/L(25 °C))
Partition coefficient	>= 1.11 <= 1.16
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Specific gravity	Not available
Density	Not available
Flammability limits in air, upper, %by volume	Not available
Flammability limits in air, lower, % by volume	Not available
VOC	Not available
Percent volatile	Not available
Other data	
Viscosity	Not available

10. Stability and reactivity

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Incompatible materials. Avoid open flames and high temperatures. Keep temperature not exceeding 52 °C.
Incompatible materials	Alkali metals, Alkaline earth metals, Powdered metals, Powdered metal salts.
Hazardous decomposition products	Hydrogen chloride, hydrogen fluoride, carbonyl halides, chlorine compounds, fluorocarbons, carbon oxides.
Possibility of hazardous reactions	Attacks magnesium and its alloys.

11. Toxicological information

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: Not available

Information on toxicological effects:

Acute toxicity:

LD50(Oral, Rat):	Not available
LD50(Dermal, Rabbit):	Not available
LC50(Inhalation, Mouse):	> 150000 ppm 6H
Skin corrosion/Irritation:	Not classified.
Serious eye damage/irritation:	Not classified
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
STOT- single exposure:	Not classified
STOT-repeated exposure:	Not classified

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Aspiration hazard:

Not classified

12. Ecological information

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	777 mg/l	96h	Fish	OECD 203	N/A	N/A
EC50	433 mg/l	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	72h	Algae	OECD 201	N/A	N/A

Persistence and degradability:

Chlorodifluoromethane was found not biodegradable at the test conditions.

The low octanol-water partition coefficient indicated that chlorodifluoromethane is not likely to bioaccumulate. (EU Risk assessment).

Bioaccumulative potential:

Mobility in soil:

The product is soluble in water.

Results of PBT&vPvB assessment:

The substance is not PBT / vPvB.

Other adverse effects:

No known significant effects or critical hazards.

13. Disposal considerations

Disposal instructions

Dispose of contents/container in accordance with local/regional/national/international regulations.

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Basic shipping requirements:

UN number UN1018
Proper shipping name CHLORODIFLUOROMETHANE
Hazard class 2.2
Packing group -
Environmental hazards No

IATA

UN number UN1018
UN proper shipping name CHLORODIFLUOROMETHANE
Transport hazard class(es) 2.2
Packing group -
Environmental hazards No

IMDG

UN number UN1018
UN proper shipping name CHLORODIFLUOROMETHANE
Transport hazard class(es) 2.2
Packing group -
Environmental hazards No

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Chlorodifluoromethane (75-45-6) is found on	US - Hawaii Air Contaminant Limits" List.
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the following regulatory lists	<p>US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values" List.</p> <p>"US - Alaska Limits for Air Contaminants" List.</p> <p>US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants" List.</p> <p>"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory" List.</p>
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16. Other information, including date of preparation or last revision

HMIS® ratings

Health: 2
 Flammability: 1
 Physical hazard:3

NFPA ratings

Health: 2
 Flammability: 1
 Instability: 3

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

Issue date

04-29-2015