

**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):** acoughlin@bmp-usa.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 (CO<sub>2</sub>).

**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 <sup>3</sup> / 1000 ppm	4375 mg/m <sup>3</sup> / 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**

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

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

## 10. Stability and reactivity

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

## 11. Toxicological information

### Toxicokinetics, metabolism and distribution:

**Non-human toxicological data:** Not available

### Information on toxicological effects:

#### Acute toxicity:

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

Material name: R22

Version #:1.0 Revision date:11/20/2018. Issue date:04-29-2015.

SDS US

4 / 6

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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SDS US

5 / 6

<b>the following regulatory lists</b>	<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