


|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 1/10               |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

|                             |                                      |
|-----------------------------|--------------------------------------|
| <b>Trade name</b>           | Chlorodifluoromethane, Freon 22, R22 |
| <b>Chemical description</b> | Chlorodifluoromethane                |
| <b>CAS N°</b>               | 75-45-6                              |
| <b>CE N°</b>                | 200-871-9                            |
| <b>Index N°</b>             | --                                   |
| <b>Registration n°</b>      | 01-2119517587-31                     |
| <b>Chemical formula</b>     | CHClF <sub>2</sub>                   |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

|                                 |  |
|---------------------------------|--|
| <b>Relevant identified uses</b> | Industrial and professional<br>Use as refrigerant<br>Laboratory use<br>Contact supplier for more information on uses |
| <b>Uses advised against</b>     | Consumer use not recommended   |

### 1.3. Details of the supplier of the safety data sheet

|                               |   |
|-------------------------------|---|
| <b>Company identification</b> | MULTIGAS<br>Route de l'Industrie 102<br>CH-1564 Domdidier |
| <b>Phone number</b>           | +41 (0) 26 676 94 94                                      |
| <b>E-mail address</b>         | <a href="mailto:info@multigas.ch">info@multigas.ch</a>    |

### 1.4. Emergency telephone numbers

145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51  
+41 (0) 26 676 94 94 (Multigas)


## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

|                         |                                      |      |
|-------------------------|--------------------------------------|------|
| <b>Physical hazards</b> | Gases under pressure : Liquefied gas | H280 |
|-------------------------|--------------------------------------|------|

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 2/10               |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

## 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



GHS04

Signal word

Warning

Hazard statements

H280

Contains gas under pressure; may explode if heated

Precautionary statements

P410+P403

Protect from sunlight. Store in a well-ventilated place

## 2.3. Other hazards

Asphyxiant in high concentrations

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

| Name                           | Product identifier  | Concentration    | Classification          |
|--------------------------------|---|------------------|-------------------------|
| Chlorodifluoromethane<br>(R22) | (CAS-No.) 75-45-6<br>(EC-No.) 200-871-9<br>(EC Index-No.) ---<br>(Registration-No.)<br>01-2119517587-31 | ≥ 99.8 - ≤ 100 % | Press. Gas (Liq.), H280 |

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

Contains no other components or impurities which will influence the classification of the product

### 3.2. Mixtures

Not established

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

General advice

See a doctor. Show this safety data sheet to the attending physician

In case of inhalation

In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor

In case of skin contact

No adverse effects expected

**CHlorodifluoromethane (R22)**

**MTG.....**

**In case of eyes contact**

No adverse effects expected

**In case of ingestion**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

**4.2. Most important symptoms and effects, both acute and delayed**

At high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation  
 Refer to section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

No data available

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Water spray or water mist. Dry powder. Carbon dioxide. Foam

**Unsuitable extinguishing media**

Do not use water jet to extinguish

**5.2. Special hazards arising from the substance or mixture**

**Specific hazards**

In case of fire or excessive heat, hazardous combustion products may be produced  
 Exposure to fire may cause containers to rupture/explode

**Hazardous combustion products**

In case of fire or excessive heat, hazardous combustion products may be produced such as : carbonyl fluoride, carbon monoxide, hydrogen fluoride

**5.3. Additional information**

Cool endangered receptacles with water spray jet from a protected position

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**


Avoid breathing vapours, spray mists or gases  
 Provide adequate ventilation  
 Evacuate personnel to a safe place  
 Personal protective equipment, see section 8

**6.2. Environmental precautions**

Try to stop the leak

**6.3. Methods and material for containment and cleaning up**

Ventilate the area

|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 4/10               |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

**6.4. Reference to other sections**

See also sections 8 and 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

For precautions, see section 2.2

**7.2. Conditions for safe storage, including any incompatibilities**

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place

Content under pressure

**7.3. Specific end use(s)**

None

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

Components with occupational exposure limits

| Component             | CAS N°  | Exposure value type | Control parameter      | Source   |  |
|-----------------------|---------|---------------------|------------------------|--|--|
| Chlorodifluoromethane | 75-45-6 | TWA                 | 500 ml/m <sup>3</sup>  | SUVA: Exposure limit values at workplaces (2020) |  |
|                       |         |                     | 1800 mg/m <sup>3</sup> |  |  |
|                       |         | OEL                 | -                      |  |  |
|                       |         |                     | -                      |  |  |

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

Provide adequate general and local exhaust ventilation

Gas detectors should be used when flammable / toxic gases / vapours are likely to be released

**8.2.2. Individual protection measures, e.g. personal protective equipment**

**Eye/face protection**

Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166

**Skin / hand protection**

Wear protective gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical hazards

**CHlorodifluoromethane (R22)**

**MTG.....**

The selected protective gloves have to satisfy the specifications of EU Directive 89/686 / EEC and the standard EN 374 derived from it

**For short-term use**

Material: Fluoroelastomer  
 Penetration time:> 480 min  
 Glove thickness: 0.7 mm

**For long-term use**

Material: Fluoroelastomer  
 Penetration time:> 480 min  
 Glove thickness: 0.7 mm

Have appropriate, chemical-resistant protective clothing ready for use in emergencies

**Respiratory protection**

Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

**8.2.3. Environmental exposure controls**

-

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

- **Physical state at 20°C / 101.3kPa** Gas
- **Colour** Colourless

**Odour** No data available

**Odour threshold** No data available

**pH** No data available

**Melting point / Freezing point** -160°C

**Boiling point** -40.8°C

**Flash point** No data available

**Evaporation rate** No data available

**Flammability (solid, gas)** No data available

**Explosive limits** No data available

**Vapour pressure [20°C]** 9.13 bar

**Vapour pressure [50°C]** No data available

**Vapour density** No data available

**Relative density, liquid (water=1)** No data available

**Relative density, gas (air=1)** 3

**Water solubility** 2.6 g/l

**Partition coefficient** 1.13

**CHlorodifluoromethane (R22)**

**MTG.....**

n-octanol/water (Log Kow)

|                           |                   |
|---------------------------|-------------------|
| Auto-ignition temperature | 632 – 635°C       |
| Decomposition temperature | 632°C             |
| Viscosity                 | No data available |
| Explosive properties      | No data available |
| Oxidising properties      | No data available |

**9.2. Other information**

|                           |   |
|---------------------------|---|
| Molar mass                | 70 g/mol  |
| Critical temperature [°C] | 86.47°C   |
| Relative vapour density   | Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level |

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No reactivity hazard other than the effects described in sub-sections below

**10.2. Chemical stability**

Stable under recommended storage conditions

**10.3. Possibility of hazardous reactions**

May react with strong oxidizing agents

**10.4. Conditions to avoid**


Must not be mixed with compressed air for leak testing or other purposes  
 Heat, flames and sparks

**10.5. Incompatible materials**

Strong oxidants  
 For additional information on compatibility refer to ISO 11114

**10.6. Hazardous decomposition products**

Under normal conditions of storage and use, hazardous decomposition products should not be produced

|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 7/10               |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

**SECTION 11: Toxicological information**

**11.1. Chemical safety assessment**

|   |   |
|---|---|
| <b>Acute toxicity</b>                         | Toxicological effects not expected from this product if occupational exposure limit values are not exceeded |
| <b>Skin corrosion/irritation</b>              | No data available   |
| <b>Serious eye damage/irritation</b>          | No data available   |
| <b>Respiratory or skin sensitisation</b>      | No data available   |
| <b>Germ cell mutagenicity</b>                 | No data available   |
| <b>Carcinogenicity</b>                        | No data available   |
| <b>Reproductive toxicity</b>                  | No data available   |
| <b>STOT-single exposure – Target organ(s)</b> | No data available   |
| <b>STOT-repeated exposure</b>                 | No data available   |
| <b>Ingestion hazard</b>                       | No data available   |

**SECTION 12: Ecological information**

**12.1. Toxicity**

|                   |                                     |
|-------------------|-------------------------------------|
| <b>Assessment</b> | Classification criteria are not met |
|-------------------|-------------------------------------|

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**12.4. Mobility in soil**

No data available


**12.5. Results of PBT and vPvB assessment**

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

**12.6. Other adverse effects**

Contains fluorinated greenhouse gases  
When discharged in large quantities may contribute to the greenhouse effect

**SECTION 13: Disposal considerations**

|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 8/10               |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

### 13.1. Waste treatment methods

|                               |   |
|-------------------------------|---|
| <b>Product</b>                | Must not be released into the atmosphere<br>Burn in a chemical incinerator equipped with an afterburner and scrubber<br>Return to the supplier the product not consumed in its original container |
| <b>Contaminated container</b> | Eliminate as unused product<br>Contact the supplier if instructions are needed  |
| <b>OMoD Code</b>              | 14 06.01<br>Solvent, refrigerant and aerosol propellant or organic foam wastes:<br>Chlorofluorocarbons, HCFCs, HFCs   |

## SECTION 14: Transport information

### 14.1. UN number

| Transport par road/rail<br>ADR / RID | Transport by sea<br>IMDG | Transport by air<br>IATA |
|--------------------------------------|--------------------------|--------------------------|
| 1018                                 | 1018                     | 1018                     |

### 14.2. UN proper shipping name

| Transport par road/rail<br>ADR / RID           | Transport by sea<br>IMDG                       | Transport by air<br>IATA                       |
|--|--|--|
| Chlorodifluoromethane<br>(Refrigerant gas R22) | Chlorodifluoromethane<br>(Refrigerant gas R22) | Chlorodifluoromethane<br>(Refrigerant gas R22) |

### 14.3. Transport hazard class(es)

Labelling



ADR/RID  
IMDG  
IATA

2.2 : Non-flammable, non-toxic gases

### 14.4. Packing group


ADR/RID  
IMDG  
IATA

Not established

### 14.5. Environmental hazards

|                    |      |
|--------------------|------|
| ADR/RID            | None |
| IMDG               | None |
| ICAO-TI / IATA-DGR | None |



|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 9/10               |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

#### **14.6. Special precautions for user**

No data available

#### **14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable

### **SECTION 15: Regulatory information**

#### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

#### **15.2. Chemical safety assessment**

A CSA has been carried out

### **SECTION 16: Other information**

#### **Indication of changes**

Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

#### **Abbreviations and acronyms**

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS : Chemical Abstract Service number (USA)

CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CSA : Chemical Safety Assessment

EIGA : European Industrial Gases Association

EINECS : European Inventory of Existing Commercial Chemical Substances

EN : European Standard

ATE : Acute Toxicity Estimate

IATA : International Air Transport Association

IMDG Code : International Maritime Dangerous Goods Code

LC50 : Lethal Concentration to 50 % of a test population

OMoD : Swiss Ordinance on the movement of waste

PBT : Persistent, Bioaccumulative and Toxic

PPE: Personal Protection Equipment


REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

RID : Regulations concerning the international carriage of dangerous goods by rail

RMM : Risk Management Measures

STOT-SE : Specific Target Organ Toxicity - Single Exposure

UN : United Nations

|   |                         |                           |
|---|-------------------------|---------------------------|
|  | <b>SAFETY DATASHEET</b> | Page : 10/10              |
|   |                         | Revised edition n° : 10.0 |
|   |                         | Revision date : 05/2021   |
| <b>CHlorodifluoromethane (R22)</b>  |                         | <b>MTG.....</b>           |

vPvB : Very Persistent and Very Bioaccumulative  
WGK: Water Hazards Class

**Full text of H, EUH and P statements used in sections 2 and 3**

**Hazard statements**

H280 Contains gas under pressure; may explode if heated

**Precautionary statements**

P410+P403 Protect from sunlight. Store in a well-ventilated place

**Disclaimer of liability**

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide