

Safety Data Sheet

according to 1907/2006/EC, Article 31


Printing date 17.11.2010

Revision: 17.11.2010

1 Identification of the substance/mixture and of the company/undertaking

- **Product details**
- **Trade name:** chlorodifluoromethane
- **Registration number** 05-2116202961-53-0000 (Pre-Registration Number)
- **Application of the substance / the preparation** Refrigerant, Foam blowing agent, Aerosol
- **Manufacturer/Supplier:**
SRF Ltd.(Chemicals Business)
V&PO : JHIWANA, TEH. TIJARA ALWAR ,
RAJASTHAN , INDIA
Pin Code-301019
- **Further information obtainable from:**
Contact Person : Himanshu Shukla
Mobile : +919829349994
E-mai : shukla.himanshu@srf.com
- **Information in case of emergency:**
Contact details of European importer
Emergency telephone number:
Telephone number of EU importer:
Opening hours:
Other Comments (e.g. language(s) of the phone service): English

2 Hazards identification

- **Classification of the substance or mixture**
 - **Classification according to Regulation (EC) No 1272/2008**
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GHS04 gas cylinder
- Press. Gas H280 Contains gas under pressure; may explode if heated.*
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- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable.
 - **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms**



GHS04

- **Signal word** Warning
 - **Hazard-determining components of labelling:** Void
 - **Hazard statements**
H280 Contains gas under pressure; may explode if heated.
 - **Precautionary statements**
P410+P403 Protect from sunlight. Store in a well-ventilated place.
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- **Labelling according to EU guidelines:**
The substance is not subject to classification according to EU lists and other sources of literature known to us.
Observe the general safety regulations when handling chemicals.

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- **Safety phrases:**
3/7 Keep container tightly closed in a cool place.

3 Composition/information on ingredients

- **Chemical characterization:**
- **CAS No. Description**
75-45-6 chlorodifluoromethane
- **Identification number(s)**
- **EINECS Number:** 200-871-9
- **Additional information:**
MOLECULAR FORMULA: CHClF₂
MOLECULAR WEIGHT: 86.45
PERCENTAGE: 100.0

4 First aid measures

- **After inhalation:**
Immediately remove to fresh air. If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available. Get medical attention. Do not give epinephrine (adrenaline).
- **After skin contact:**
Promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. Get medical attention if symptoms persist.
- **After eye contact:**
Immediately flush eyes with large amounts of water for at least 15 minutes (in case of frostbite water should be lukewarm, not hot) lifting eyelids occasionally to facilitate irrigation. Get medical attention if symptoms persist.
- **After swallowing:**
Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting unless instructed to do so by a physician.
- **Information for doctor:** Treat symptomatically and supportively.
- **The following symptoms may occur:**
Overexposure may cause dizziness and loss of concentration.
Eyes : Redness and pain.

5 Firefighting measures

- **Suitable extinguishing agents:**
Use fire extinguishing methods suitable to surrounding conditions.
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**
Floron -22 is not flammable at ambient temperatures and atmospheric pressure. However, this material will become combustible when mixed with air under pressure and exposed to strong ignition sources. Contact with certain reactive metals may result in formation of explosive or exothermic reactions under specific conditions
- **Protective equipment:**
Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against possible toxic decomposition products. Proper eye and skin protection should be provided.

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6 Accidental release measures

- **Person-related safety precautions:**

Evacuate unprotected personnel. Protected personnel should remove ignition sources and shut off leak, if without risk, and provide ventilation. Unprotected personnel should not return until air has been tested and determined safe, including low lying areas.

- **Measures for environmental protection:**

In case of gas release or seepage into the ground inform responsible authorities.

- **Measures for cleaning/collecting:** Dispose contaminated material as waste according to item 13.

- **Additional information:**

Refer to section 8 and 13 for additional information on personal protection equipment and disposal methods.

7 Handling and storage

- **Handling:**

- **Information for safe handling:**

Avoid breathing vapors and liquid contact with eyes, skin or clothing. Do not puncture or drop cylinders, expose them to open flame or excessive heat. Use authorized cylinders only. Follow standard safety precautions for handling and use of compressed gas cylinders. Floron 22 should not be mixed with air above atmospheric pressure for leak testing or any other purpose.

- **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Protect cylinder and its fittings from physical damage. Storage in subsurface locations should be avoided.

- **Information about storage in one common storage facility:** Store in a cool, well-ventilated area of low fire risk.

- **Further information about storage conditions:**

Keep container tightly sealed.

Protect from direct sunlight.

- **Specific applications** Refrigerant, Foam blowing agent, Aerosol.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Ingredients with limit values that require monitoring at the workplace:**

75-45-6 chlorodifluoromethane

IOELV (EU)	3600 mg/m ³ , 1000 ppm
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- **Additional information:** The lists valid during the making were used as basis.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

- **Protection of hands:** General gloves (leather) should provide adequate protection.

- **Material of gloves**

If prolonged contact with the liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **Eye protection:**
For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear chemical safety goggles.
- **Body protection:** Protective work clothing

9 Physical and chemical properties

· General Information

· Appearance:

- **Form:** Gaseous
- **Colour:** Colourless
- **Odour:** Ethereal and faint sweetish odor.

· Change in condition

- **Melting point/Melting range:** -160°C
- **Boiling point/Boiling range:** -40.8°C

- **Flash point:** Not applicable.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Vapour pressure:** 136.1 psia (@ 70 deg F)

- **Density at 25°C:** 1.194 g/cm³

· Solubility in / Miscibility with water at 30°C:

1.2 g/l

· Additional information:

VAPOR DENSITY (air=1): 3.0
 WATER SOLUBILITY: 0.3 wt% @ 25°C and 1 atmosphere
 PH: Neutral
 VOLATILITY: 100%

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

Do not mix with oxygen or air above atmospheric pressure. Any source of high temperature, such as lighted cigarettes, flames, hot spots or welding may yield toxic and/or corrosive decomposition products.

· Materials to be avoided:

Freshly abraded aluminum surfaces (may cause strong exothermic reaction). Chemically active metals: potassium, calcium, powdered aluminum, magnesium and zinc.

- **Dangerous reactions** No dangerous reactions known.

- **Dangerous decomposition products:** Halogens, halogen acids and possibly carbonyl halides.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values relevant for classification:

Inhalative LC50 (25 hr)	350000 ppm (rat)
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· Primary irritant effect:

- **on the skin:** May cause skin irritation.

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- **on the eye:** Liquid contact can cause severe irritation and frostbite.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:**
EFFECTS OF SHORT-TERM EXPOSURE:
Rapid evaporation of the liquid may cause frostbite. The substance may cause effects on the cardiovascular system and central nervous system, resulting in cardiac disorders and central nervous system depression. Exposure could cause lowering of consciousness.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.
The substance is not subject to classification according to the latest version of the EU lists.

12 Ecological information

- **Additional ecological information:**
- **General notes:** Avoid transfer into the environment.
- **Results of PBT and vPvB assessment** TO BE PROVIDED IN THE REGISTRATION DOSSIER

13 Disposal considerations

- **Product:**
- **Recommendation** Smaller quantities can be disposed of with household waste.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 2 2A Gases.
- **Danger code (Kemler):** 20
- **UN-Number:** 1018
- **Packaging group:** -
- **Hazard label:** 2.2
- **Description of goods:** 1018 CHLORODIFLUOROMETHANE (REFRIGERANT GAS R22)
- **Tunnel restriction code** C/E

- **Maritime transport IMDG:**



- **IMDG Class:** 2.2
- **UN Number:** 1018
- **Label:** 2.2
- **Packaging group:** -

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- **EMS Number:** F-C,S-V
- **Marine pollutant:** No
- **Proper shipping name:** CHLORODIFLUOROMETHANE (REFRIGERANT GAS R22)

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 2
- **UN/ID Number:** 1018
- **Label:** 2.2
- **Packaging group:** -
- **Proper shipping name:** CHLORODIFLUOROMETHANE (REFRIGERANT GAS R22)

- **UN "Model Regulation":** UN1018, CHLORODIFLUOROMETHANE (REFRIGERANT GAS R22), 2.2

15 Regulatory information

- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms** Please refer section 2
- **Hazard statements** Please refer section 2
- **Labelling according to EU guidelines:**
- **Risk phrases:** Please refer section 2
- **Safety phrases:** Please refer section 2
- **Chemical safety assessment** A Chemical Safety Assessment has not been carried out.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations** Not applicable
- **Substances of very high concern (SVHC) according to REACH, Article 57**
The substance is not listed as SVHC.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Product safety department.
- **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association"
(IATA) ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization"
(ICAO) GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
- **Sources**
• **REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/**

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EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006•**IUCLID Data :***<http://ecb.jrc.ec.europa.eu/IUCLID-DataSheets/75456.pdf>*•**TOXNET Data :***<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~hQeCEE:1:FULL>*•**INCHEM :***<http://www.inchem.org/documents/icsc/icsc/eics0049.htm>*• *** Data compared to the previous version altered.***Section 2 – Hazard identification.**Section 4: First-aid measures. Section**5: Fire-fighting measures Section 6:**Accidental Release measures Section 7:**Handling and storage.**Section 8: Exposure Controls/Personal protection.**Section 9: Physical and Chemical properties.**Section 10: Stability and Reactivity.**Section 11: Toxicological Information.**Section 12: Ecological Information.**Section 13: Disposal consideration.*

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