



# MATERIAL SAFETY DATA SHEET

SCHEDULE - 9

(Rule - 17)

## R-22 (CHLORODIFLUOROMETHANE)

### 1. CHEMICAL IDENTITY :

CHEMICAL NAME : CHLORODIFLUOROMETHANE  
CHEMICAL CLASSIFICATION : FLUOROCARBONS

SYNONYMS : FLUOROCARBON 22,  
REFRIGERANT 22,  
PROPELLANT 22,  
R 22  
TRADE NAME : FLORON 22

FORMULA : CHClF<sub>2</sub> CAS NO. : 75-45-6 U.N. NO. : 1018

REGULATED IDENTIFICATION SHIPPING NAME : FLORON 22 HAZCHEM NO. : 2 RE  
CODES / LABEL : NON FLAMMABLE NON TOXIC  
HAZARDOUS WASTE : N.A. ( NON-HAZARDOUS )  
HAZARD CLASS : 2.2



HAZARDOUS INGREDIENTS	C.A.S.NO.	HAZARDOUS INGREDIENTS	C.A.S. NO.
1. None		3.	
2.		4.	

### 2. PHYSICAL & CHEMICAL DATA :

BOILING RANGE / POINT, °C : -40.8  
PHYSICAL STATE : GAS

APPEARANCE : COLOURLESS LIQUEFIED GAS  
MELTING / FREEZING POINT, °C. : -160

VAPOUR PRESSURE @ 21.1°C, MM Hg. : 7120  
ODOUR : FAINT ETHEREAL ODOUR AT HIGH  
CONCENTRATIONS

VAPOUR DENSITY : 3.11  
( AIR = 1 )  
SOLUBILITY IN WATER: 0.3 % @ 25 °C

SPECIFIC GRAVITY : 3.87  
( WATER = 1 ) @ 0°C  
pH : NEUTRAL

OTHERS :



### 3. FIRE & EXPLOSION HAZARD DATA :

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FLAMMABILITY, No	LEL N.A.	%FLASH POINT, °C None	AUTOIGNITION TEMPERATURE, °C 632
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TDG FLAMMABILITY N. A.	LEL N. A.	%FLASH POINT, °C N.A.
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EXPLOSION SENSITIVITY TO IMPACT No	EXPLOSION SENSITIVITY TO STATIC ELECTRICITY No	HAZARDOUS COMBUSTION PRODUCTS Decomposes at high temperature and release toxic gases.
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HAZARDOUS POLYMERIZATION : Will not occur

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COMBUSTIBLE LIQUID No	EXPLOSIVE MATERIAL No	CORROSIVE MATERIAL No
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FLAMMABLE MATERIAL No	OXIDISER No
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PYROPHORIC MATERIAL No	ORGANIC PEROXIDE No	OTHERS No
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### 4. REACTIVITY DATA :

#### CHEMICAL STABILITY :

May decompose on contact with heat and/or storage and use above room temperature. Releases toxic, corrosive, flammable or explosive gases.

#### INCOMPATIBILITY WITH OTHER MATERIAL

- Strong oxidants including oxygen, greatly increase the risk of fire or explosion in case conditions should favour such.
- To alkali metals such as sodium : cause exothermic reaction.
- Alkali earth metals such as Magnesium : Cause exothermic reaction
- Freshly-exposed Aluminum surfaces ; e. g. , in Mechanical devices, in grinding, abrasion : Cause exothermic reaction.

#### REACTIVITY

##### CONDITIONS TO AVOID

Heat. Containers may rupture or explode if exposed to heat. Lighted cigarettes, hot spots, welding,. Decomposes at high temperature yielding toxic gases.

#### HAZARDOUS REACTION PRODUCTS :

Thermal decomposition products: halogenated compounds, oxides of carbon, hydrochloric acid, chlorine, phosgene.

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## 5. HEALTH HAZARD DATA :

ROUTES OF ENTRY : Inhalation, Ingestion, Skin, Eyes

### EFFECTS OF EXPOSURE / SYMPTOMS

INHALATION :

Causes irritation, nausea, vomiting, irregular heartbeat, headache, symptoms of drunkenness.

INGESTION :

Ingestion of a gas is unlikely

SKIN :

Blisters, frostbite

EYES :

Frostbite, blurred vision

EMERGENCY TREATMENT : (see first aid measures.)

TLV (ACGIH) : 1000 ppm 5600 mg/m3 STEL ----ppm ---- mg/m3

PERMISSIBLE EXPOSURE LIMIT -- ppm ---mg/m3 ODOUR THRESHOLD ----ppm----mg/m3  
LD50 : 1743 mg/kg LC 50 : ---

NFPA HAZARD :	HEALTH	FLAMMABILITY	STABILITY	SPECIAL
SIGNALS	2	0	1	-

## 6. PREVENTIVE MEASURES :

### PERSONNEL PROTECTIVE EQUIPMENT :

RESPIRATORY PROTECTION :

Air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

EYES PROTECTION :

Wear splash resistant safety goggles with a faceshield.

SKIN PROTECTION :

For the gas: Protective clothing is not required.

For the liquid: Wear appropriate protective, cold insulating clothing.

GLOVES: Wear insulated gloves.

PROTECTIVE MATERIAL TYPES: neoprene, polyvinyl alcohol (PVA), Viton(R)



HANDLING & STORAGE PRECAUTIONS :

NORMAL HANDLING :

Do not breathe gas, avoid contact with eye, skin and clothing. Do not puncture or drop cylinders or expose them to open flame or excessive heat. Use authorized containers only. Follow standard safety precautions for handling and use of cylinders of compressed gas.

STORAGE :

Storage area should be clean, well ventilated away from heat, flame or combustibles. Protect cylinders and its fittings from physical damage storage in sub-surface locations should be avoided.

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**7. EMERGENCY AND FIRST-AID MEASURE :**

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FIRE	FIRE EXTINGUISHING MEDIA	:	Carbon Dioxide, Regular dry chemical Large Fires : Use regular foam or flood with fine water spray.
	SPECIAL PROCEDURES	:	Wear self-contained breathing apparatus. Keep cylinders cool with water spray.
	UNUSUAL HAZARDS	:	While not combustible itself, contact with certain metals and oxidizing material may produce exothermic reactions or potentially explosive combinations.

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**EXPOSURE :**

FIRST AID MEASURES / ANTIDOTES / DOSAGES :

INHALATION :

Remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel.

INGESTION :

If a large amount is swallowed, get medical attention.

EYES :

Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes.

SKIN :

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C).DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blanket

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**SPILLS :**

**STEPS TO BE TAKEN :**

(ALWAYS WEAR PERSONNEL PROTECTIVE EQUIPMENT) use self contained air supply and protection against frostbite while attempt to close valves or repair source of leak.

If a large quantity is released, evacuate personnel and allow to dissipate.

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WASTE DISPOSAL METHOD : ---

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**7. ADDITIONAL INFORMATION / REFERENCES :**

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**HAZARDS INFORMATION :**

This material reduces heart efficiency at concentration of 25000 ppm or more. In addition cardiac sensitization to epinephrine has been observed at concentration of 50000 ppm.

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**9. MANUFACTURER / SUPPLIERS DATA :**

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NAME OF FIRM	:	SRF LIMITED
CONTACT PERSON IN EMERGENCY	:	
MAILING ADDRESS	:	V&PO : JHIWANA, TEH. TIJARA, ALWAR , RAJASTHAN , INDIA
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OTHER	:	

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**10. DISCLAIMER**

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