

Revised date 01.08.2024

## MATERIAL SAFETY DATA SHEET HCFC 123

### CHEMICAL PRODUCT

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Corporate MSDS Number : TAB-002002  
Composition : HCFC 123 (100%)  
Formula :  $\text{CHCl}_2\text{CF}_3$   
Chemical Name : 2,2-Dichloro-1,1,1-Trifluoroethane  
CAS# : 306-83-2  
UN# : 1078  
HS Code : 290372  
Hazard : 2.2

### COMPANY IDENTIFICATION

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TABRIGAS Egypt  
Port Said Free Zone area - Egypt  
Sunday - Thursday (9:00 - 17:00)  
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### PRODUCT USE

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Refrigerant

### TRADE NAMES & SYNONYMS

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2, 2-Dichloro-1, 1, 1-trifluoroethane  
HCFC-123  
R-123

### HAZARDS IDENTIFICATION

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#### Emergency Overview

Misuse or intentional inhalation abuse may lead to death without warning.  
Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

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## Potential Health Effects

### Skin

2,2-Dichloro-1,1,1- trifluoroethane, Liquid may cause: Irritation with discomfort or pain, redness or rash, itching or swelling., Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness, and possible blistering.

### Eyes

2,2-Dichloro-1,1,1- trifluoroethane, Liquid may cause: Irritation with discomfort, pain, redness, or visual impairment.

### Inhalation

Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.

Other symptoms potentially related to misuse or inhalation abuse are:

Anesthetic effects, Light-headedness, dizziness, confusion, in coordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness.

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

### Repeated exposure

2,2-Dichloro-1,1,1- trifluoroethane, Adverse effects from repeated inhalation may include: Liver effects

### Target Organs

2,2-Dichloro-1,1,1- trifluoroethane, Liver Central nervous system

### Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

## FIRST-AID MEASURES

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### Eye Contact

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

### Inhalation

Remove from exposure, and lie down. Move to fresh air. Keep the patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

### Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Call a physician.

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#### General advice

Never give anything by mouth to an unconscious person. The victim to lie down in the recovery position, cover, and keep him warm. Give oxygen or artificial respiration if needed. When symptoms persist or in all cases of doubt seek medical advice.

#### Notes to physician

Do not give adrenaline or similar drugs.

### **FIRE FIGHTING MEASURES**

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#### Flammable Properties

Flash Point : does not flash  
Lower explosion limit : Method: None per ASTM E681  
Upper explosion limit : Method: None per ASTM E681

#### Fire and Explosion Hazard :

Fire or intense heat may cause violent rupture of packages. Hazardous combustion products: Hydrogen chloride Hydrogen Fluoride Carbonyl halides chlorides Fluorocarbons Exposure to decomposition products may be a health hazard.

#### Suitable extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Firefighting Instructions :

In the event of a fire, wear a self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. Cool containers/tanks with water spray.

### **ACCIDENTAL RELEASE MEASURES**

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NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

#### Safeguards (Personnel)

Evacuate personnel to safe areas. Ventilate areas, especially low or enclosed places where heavy vapors might collect.

#### Spill Cleanup

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in a container for disposal according to local/national regulations

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#### Accidental Release Measures

Prevent further leakage or spillage. Prevent spreading over a wide area (e.g. by containment or oil barriers). Should not be released into the environment.

## HANDLING AND STORAGE

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#### Handling (Personnel)

Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mist.

Provide sufficient air exchange and/or exhaust in work rooms.

Handle following good industrial hygiene and safety practices. When using do not eat, drink, or smoke.

Do not breathe vapors or spray mist. Avoid contact with skin, eyes, and clothing. Wash hands before breaks and at the end of the workday.

#### Handling (Physical Aspects)

Vapors may form explosive mixtures with air. Take measures to prevent the build-up of electrostatic charge. Keep away from heat and sources of ignition. When using do not smoke. Vapors are heavier than air and may spread along floors. Avoid any dust buildup with fluorocarbons and metal mixtures.

#### Storage

Keep containers tightly closed and in an upright position. Store in a clean, dry place. Keep away from direct sunlight. Do not heat the cylinder above 52°C to avoid over-pressurizing the cylinder. Do not expose drums to direct heat or temperature above 46°C (115°F) to avoid pressurizing and possibly distorting the drums.

No materials to be especially mentioned.

#### Storage temperature

< 52 °C (< 126 °F)

## EXPOSURE CONTROLS/PERSONAL PROTECTION

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#### Engineering Controls

Ensure adequate ventilation, especially in confined areas. Personal Protective Equipment

#### Personal protective equipment

#### Respiratory protection

For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.

#### Hand protection

Material: Hydrofluoric acid-resistant and solvent-resistant gloves (gloves

Made of VITON®).

Glove thickness: 0.7 mm

Wearing time: 2 h

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Additional protection: Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

**Eye protection**

Safety glasses additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

**Skin and body protection**

Protective suit

**Exposure Guidelines****Exposure Limit Values**

2, 2-Dichloro-1,1,1-trifluoroethane  
AEL \* (DUPONT) 50 ppm 8 & 12 hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

**PHYSICAL AND CHEMICAL PROPERTIES**

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Form	: liquid
Color	: colorless
Odor	: slight, ether-like
pH	: neutral
Boiling point	: 27.8 °C (82.0 °F)
% Volatile	: 100 %
Vapor Pressure	: 913.6 hPa @ 25 °C (77 °F)
Density	: 1.46 g/cm <sup>3</sup> @ 25 °C (77 °F) (as liquid)
Water solubility	: 3.9 g/l @ 25 °C (77 °F)
Vapor density	: 5.5 at 30°C (84°F) and 1013 hPa (Air=1.0)
Evaporation rate	: < 1(CCL4=1.0)

**STABILITY AND REACTIVITY**

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**Conditions to Avoid**

Material is stable.

**Hazardous decomposition products**

Carbonyl halides, Hydrogen chloride, Hydrogen fluoride

**Hazardous reactions**

Vapors may form an explosive mixture with air.

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**TOXICOLOGICAL INFORMATION**

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2,2-Dichloro-1,1,1-trifluoroethane

Dermal LD50 : > 2,000 mg/kg, rabbit  
 Dermal LD50 : > 2,000 mg/kg, rat  
 Oral LD50 : 9,000 mg/kg, rat

Inhalation 4 h LC50 : 32000 ppm, rat Central nervous system effects Liver effects

Inhalation Low Observed

Adverse Effect

Concentration (LOAEC): 19500 ppm, dog

Cardiac sensitization

Skin irritation

: No skin irritation, rabbit  
 Not expected to cause skin irritation based on an expert review of the Properties of the substance.

Eye irritation

: No eye irritation, rabbit  
 Not expected to cause eye irritation based on an expert review of the Properties of the substance.

Skin sensitization

: Did not cause sensitization on laboratory animals., guinea pig Not expected to cause sensitization based on an expert review of the Properties of the substance.

Repeated dose toxicity: Inhalation Rat

Target Organs

: Liver Abnormal decrease in serum glucose, altered blood chemistry, Abnormal decrease in white blood cells, Organ weight changes, Reduced body weight gain, Liver effects, Retinal damage

Carcinogenicity

: Animal experiments showed a statistically significant number of tumors. The observed tumors do not appear to be relevant for men.

Mutagenicity

: Did not cause genetic damage in animals. Genetic damage in cultured mammalian cells was observed in some Laboratory tests but not in others. Did not cause genetic damage in cultured bacterial cells.

Reproductive toxicity

: Animal testing showed no reproductive toxicity.

Teratogenicity

: Animal testing showed no developmental toxicity.

Further information

: Cardiac sensitization threshold limit: 120900 mg/m3

**ECOLOGICAL INFORMATION**

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Aquatic Toxicity

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96 h LC50	: Oncorhynchus mykiss (rainbow trout) 55.5 mg/l
96 h ErC50	: Pseudokirchneriella subcapitata (green algae) 96.6 mg/l
96 h EbC50	: Pseudokirchneriella subcapitata (green algae) 67.8 mg/l
48 h EC50	: Daphnia magna (Water flea) 17.3 mg/l

Environmental Fate

2,2-Dichloro-1,1,1-trifluoroethane

Biodegradability	: 24 % Not readily biodegradable.
Bioaccumulation	: Bioconcentration factor (BCF): 33 Bioaccumulation is unlikely.

**DISPOSAL CONSIDERATIONS**

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Waste Disposal:

Can be used after re-conditioning. By local and national regulations. If recycling is not practicable, dispose of it in compliance with local regulations. The product should not be allowed to enter drains, water courses, or the soil.

Environmental Hazards:

If recycling is not practicable, dispose of in compliance with local regulations.

**TRANSPORTATION INFORMATION**

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Not classified as dangerous in the meaning of transport regulations.

**REGULATORY INFORMATION**

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DSL Status:

On the inventory, or in compliance with the inventory

WHMIS Classification:

A - Compressed Gas

Remarks

This product has been classified according to the CPR's hazard criteria, and the MSDS contains all the information required by the CPR.

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