



Material Safety Data Sheet

R -123

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number : TAB-00120

Product Use

Refrigerant

Trade names and Synonyms

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

Company Identification

TABRIGAS EGYPT – PACKAGER / DISTRIBUTOR

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
2, 2-Dichloro-1,1,1-trifluoroethane	306-83-2	100 %

HAZARDS IDENTIFICATION

Emergency Overview

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

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 defeating 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.



Vapours 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

First Aid

Eye Contact

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

Inhalation

Remove from exposure, lie down. Move to fresh air. Keep 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.

General advice

Never give anything by mouth to an unconscious person. 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

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 hazard to health.

Suitable extinguishing media :

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

Firefighting Instructions :

In the event of fire, wear 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

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 area, 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 container for disposal according to local / national regulations

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

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 in accordance with good industrial hygiene and safety practice. 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 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 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

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. Vapours 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

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

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 at 25 °C (77 °F)
Density	: 1.46 g/cm ³ at 25 °C (77 °F) (as liquid)
Water solubility	: 3.9 g/l at 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

Conditions to Avoid

Material is stable.

Hazardous decomposition products

Carbonyl halides, Hydrogen chloride, Hydrogen fluoride

Hazardous reactions

Vapors may form explosive mixture with air.

TOXICOLOGICAL INFORMATION

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 expert review of the Properties of the substance.

Eye irritation : No eye irritation, rabbit
Not expected to cause eye irritation based on 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 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

Aquatic Toxicity

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

- 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

Waste Disposal:

Can be used after re-conditioning. In accordance with local and national regulations. If recycling is not practicable, dispose of 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

Not classified as dangerous in the meaning of transport regulations.



REGULATORY INFORMATION

DSL Status:

On the inventory, or in compliance with the inventory

WHMIS Classification:

A - Compressed Gas

Remarks

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

End of MSDS