

**Freon™ 123 refrigerant**

Version 3.0

Revision Date 03/15/2016

Ref. 130000024258

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Freon™ 123 refrigerant
Tradename/Synonym	:	HCFC-123 2,2-Dichloro-1,1,1-trifluoroethane R-123
Product Grade/Type	:	ASHRAE Refrigerant number designation: R-123
Product Use	:	Refrigerant, For professional users only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category	
Specific target organ toxicity - single exposure	Category 3

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Label content

Pictogram :



Signal word : Warning

Hazardous warnings : May cause drowsiness or dizziness.

Hazardous prevention measures : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Use only outdoors or in a well-ventilated area.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/ physician if you feel unwell.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

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.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
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2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	306-83-2	100 %
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SECTION 4. FIRST AID MEASURES

- General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Call a physician.
- Skin contact : In case of contact, immediately flush skin with plenty of water. Get medical attention if irritation develops and persists.
- Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
- Ingestion : Material poses an aspiration hazard. If swallowed, DO NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician. If vomiting occurs, have victim lean forward to reduce the risk of aspiration.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.



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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No applicable data available.
- Specific hazards : The product is not flammable.
- Special protective equipment for firefighters : No applicable data available.
- Further information : Cool containers/tanks with water spray.

SECTION 6. 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) : Ventilate spill area. Comply with Federal, State and Local regulations on reporting releases
- Environmental precautions : Prevent material from entering sewers, waterways, or low areas. Should not be released into the environment. In accordance with local and national regulations.
- Spill Cleanup : Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect. 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 (see section 13).
- Accidental Release Measures : No applicable data available.



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SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid breathing high concentrations of vapour. Use only with adequate ventilation especially for enclosed and low area where vapors can accumulate. Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact of liquid with eyes and prolonged skin exposure. Decomposition will occur when product comes in contact with open flame or electrical heating elements.
 Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday.
- Handling (Physical Aspects) : No applicable data available.
- Dust explosion class : No applicable data available.
- 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.
 The product has an indefinite shelf life when stored properly.
- Storage period : > 10 yr
- Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Use only with adequate ventilation. Keep container tightly closed.
- Personal protective equipment

 - Respiratory protection : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
 - Eye protection : Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

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- Skin and body protection : Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots.
- Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Exposure Guidelines
Exposure Limit Values

This product does not contain any exposure limits that require disclosure according to OSHA Hazard Communication Standard 2012.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance
- Physical state : liquid
 - Form : liquid
 - Color : colourless
- Odor : slight, ether-like
- Odor threshold : No applicable data available.
- pH : neutral
- Melting point/range : No applicable data available.
- Boiling point/boiling range : Boiling point
27.8 °C (82.0 °F)
- Flash point : does not flash
- Evaporation rate : < 1
(CCL4=1.0)

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Flammability (solid, gas)	: Liquid: Does not sustain combustion.
Upper explosion limit	: Method: None per ASTM E681
Lower explosion limit	: Method: None per ASTM E681
Vapor pressure	: 913.6 hPa at 25 °C (77 °F)
Vapor density	: 5.5 at 30°C (84°F) and 1013 hPa (Air=1.0)
Density	: 1.46 g/cm ³ at 25 °C (77 °F) (as liquid)
Specific gravity (Relative density)	: 1.47 at 25 °C (77 °F)
Water solubility	: 3.9 g/l at 25 °C (77 °F)
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 100 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Decomposes on heating.
Chemical stability	: Stable at normal temperatures and storage conditions.



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Possibility of hazardous reactions	:	Polymerization will not occur.
Conditions to avoid	:	No applicable data available.
Incompatible materials	:	Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	:	Carbonyl halides, Hydrogen chloride, Hydrogen fluoride

SECTION 11. TOXICOLOGICAL INFORMATION

2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)

Inhalation	:	Target Organs: Central nervous system Central nervous system effects
Inhalation Low Observed Adverse Effect Concentration (LOAEC)	:	20000 ppm , Dog Cardiac sensitization
Inhalation No Observed Adverse Effect Concentration	:	10000 ppm , Dog Cardiac sensitization
Dermal LD50	:	> 2,000 mg/kg , Rabbit
Dermal LD50	:	> 2,000 mg/kg , Rat
Oral LD50	:	9,000 mg/kg , Rat Respiratory effects Abnormal posture
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	:	Does not cause skin sensitisation., Guinea pig Did not cause sensitisation on laboratory animals. Not expected to cause sensitization based on expert review of the properties of the substance.

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	Does not cause respiratory sensitisation., multiple species
Repeated dose toxicity	: Inhalation Rat - vapour No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.
Carcinogenicity	: Not classifiable as a human carcinogen. The observed tumors do not appear to be relevant for men.
Mutagenicity	: Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	: No toxicity to reproduction Animal testing showed no reproductive toxicity. No effects on or via lactation
Teratogenicity	: Animal testing showed no developmental toxicity.
Further information	: Cardiac sensitisation threshold limit : 124000 mg/m3

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

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.

SECTION 12. ECOLOGICAL INFORMATION

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 (HCFC-123)

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

SECTION 13. DISPOSAL CONSIDERATIONS

- Waste disposal methods - Product : Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.
- Contaminated packaging : Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.



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SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: 2,2-Dichloro-1,1,1-trifluoroethane
NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): 2,2-Dichloro-1,1,1-trifluoroethane
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Freon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

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