

Material Safety Data Sheet



Halocarbon R-123 (1,1-Dichloro-2,2,2,-Trifluoroethane)

Section 1. Chemical product and company identification

Product name	: Halocarbon R-123 (1,1-Dichloro-2,2,2,-Trifluoroethane)
Supplier	: AIRGAS INC., on behalf of its subsidiaries 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5283 1-610-687-5253
Product use	: Synthetic/Analytical chemistry.
Synonym	: Ethane, 2,2-dichloro-1,1,1-trifluoro-; Ethane, 2,2-dichloro-1,1,1-trifluoro; 1,1,1-Trifluoro-2,2-dichloroethane; HCFC-123; dichloro-1,1,1-trifluoroethane; CFC-123
MSDS #	: 001084
Date of Preparation/ Revision	: 3/12/2014.
In case of emergency	: 1-866-734-3438

Section 2. Hazards identification

Physical state	: Liquid. [Liquid.]
Emergency overview	: WARNING! MAY CAUSE EYE IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. Do not puncture or incinerate container. Avoid contact with eyes. Wash thoroughly after handling. Contact with rapidly expanding gases can cause frostbite.
Routes of entry	: Inhalation Dermal Eyes
Potential acute health effects	
Eyes	: Moderately irritating to eyes.
Skin	: Slightly irritating to the skin.
Inhalation	: Acts as a simple asphyxiant.
Ingestion	: Ingestion is not a normal route of exposure for gases
Medical conditions aggravated by over-exposure	: Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.

See toxicological information (Section 11)

Section 3. Composition, Information on Ingredients

<u>Name</u>	<u>CAS number</u>	<u>% Volume</u>	<u>Exposure limits</u>
Halocarbon R-123 (1,1-Dichloro-2,2,2,-Trifluoroethane)	306-83-2	100	AIHA WEEL (United States, 10/2011). TWA: 50 ppm 8 hours.

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.

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- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire-fighting measures

- Flammability of the product** : Non-flammable.
- Products of combustion** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
- Fire-fighting media and instructions** : Use an extinguishing agent suitable for the surrounding fire.
- Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.
- Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Wash thoroughly after handling. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Avoid contact with eyes. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Storage** : Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

- Engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

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- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Personal protection in case of a large spill** : Full chemical-resistant suit and self-contained breathing apparatus should be worn only by trained and authorized persons.

Product name

2,2-dichloro-1,1,1-trifluoroethane

AIHA WEEL (United States, 10/2011).
TWA: 50 ppm 8 hours.

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight	: 152.93 g/mole
Molecular formula	: C ₂ H-Cl ₂ -F ₃
Boiling/condensation point	: 28.7°C (83.7°F)
Melting/freezing point	: -107°C (-160.6°F)
Critical temperature	: Not available.
Vapor pressure	: @ 77°F (25°C) = 13 psia (89.6 kPa)
Vapor density	: 6.4 (Air = 1)
Specific Volume (ft³/lb)	: 2.5316
Gas Density (lb/ft³)	: 0.395

Section 10. Stability and reactivity

- Stability and reactivity** : The product is stable.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

Product/ingredient name	Result	Species	Dose	Exposure
2,2-dichloro-1,1,1-trifluoroethane	LDLo Oral	Rat	9 g/kg	-
	LDLo Oral	Rat	9000 mg/kg	-
	LC50 Inhalation	Rat	225700 mg/m ³	4 hours
	Vapor			
	LC50 Inhalation	Mouse	74000 ppm	1 hours
	Gas.			
	LC50 Inhalation	Rat	32000 ppm	4 hours
	Gas.			
	LC50 Inhalation	Rat	32000 ppm	4 hours
Gas.	LC50 Inhalation	Rat	28400 ppm	4 hours
	Gas.			

Other toxic effects on humans : Hazardous by the following route of exposure: of eye contact (irritant).




Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Halocarbon R-123 (1,1-Dichloro-2,2,2-Trifluoroethane)**Mutagenic effects** : No known significant effects or critical hazards.**Reproduction toxicity** : No known significant effects or critical hazards.**Section 12. Ecological information****Aquatic ecotoxicity**

Not available.

Environmental fate : Not available.**Environmental hazards** : No known significant effects or critical hazards.**Toxicity to the environment** : Not available.**Section 13. Disposal considerations****Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.****Section 14. Transport information**

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	Not applicable (gas).		Remarks Shipping Containers Tank Cars. Tank Trucks. Pails. Drums.
TDG Classification	Not regulated.	-	-	Not applicable (gas).		Remarks Shipping Containers Tank Cars. Tank Trucks. Pails. Drums.
Mexico Classification	Not regulated.	-	-	Not applicable (gas).		Remarks Shipping Containers Tank Cars. Tank Trucks. Pails. Drums.

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”**Section 15. Regulatory information****United States****U.S. Federal regulations** : TSCA 8(a) CDR Exempt/Partial exemption: Partial exemption
United States inventory (TSCA 8b): This material is listed or exempted.**SARA 302/304:** No products were found.**SARA 311/312 Hazards identification:** Immediate (acute) health hazard, Delayed (chronic) health hazard**SARA 313****Form R - Reporting requirements****Product name**
: Halocarbon R-123 (1,1-Dichloro-2,2,2,-Trifluoroethane)**CAS number**
306-83-2**Concentration**
100

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Supplier notification : Halocarbon R-123 (1,1-Dichloro-2,2,2,-Trifluoroethane) 306-83-2 100

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations :

- Connecticut Carcinogen Reporting:** This material is not listed.
- Connecticut Hazardous Material Survey:** This material is not listed.
- Florida substances:** This material is not listed.
- Illinois Chemical Safety Act:** This material is not listed.
- Illinois Toxic Substances Disclosure to Employee Act:** This material is not listed.
- Louisiana Reporting:** This material is not listed.
- Louisiana Spill:** This material is not listed.
- Massachusetts Spill:** This material is not listed.
- Massachusetts Substances:** This material is not listed.
- Michigan Critical Material:** This material is not listed.
- Minnesota Hazardous Substances:** This material is not listed.
- New Jersey Hazardous Substances:** This material is listed.
- New Jersey Spill:** This material is not listed.
- New Jersey Toxic Catastrophe Prevention Act:** This material is not listed.
- New York Acutely Hazardous Substances:** This material is not listed.
- New York Toxic Chemical Release Reporting:** This material is not listed.
- Pennsylvania RTK Hazardous Substances:** This material is not listed.
- Rhode Island Hazardous Substances:** This material is not listed.

Canada

WHMIS (Canada) :

- Not controlled under WHMIS (Canada).
- CEPA Toxic substances:** This material is listed.
- Canadian ARET:** This material is not listed.
- Canadian NPRI:** This material is listed.
- Alberta Designated Substances:** This material is not listed.
- Ontario Designated Substances:** This material is not listed.
- Quebec Designated Substances:** This material is not listed.

Section 16. Other information

United States

Label requirements : MAY CAUSE EYE IRRITATION.
MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

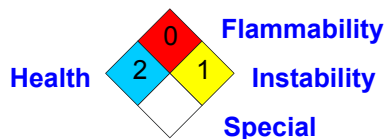
Canada

Label requirements : Not controlled under WHMIS (Canada).

Hazardous Material Information System (U.S.A.) :

Health	*	1
Flammability		0
Physical hazards		1

National Fire Protection Association (U.S.A.) :



Notice to reader

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To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.