

Safety Data Sheet

R143a

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: R-143a
OTHER NAME: 1,1,1-Trifluoroethane
USE: Refrigerant Gas
STORAGE: ICOOL USA INCORPORATED
 1638 Thompson Rd SE
 Hartselle, AL 35640

FOR MORE INFORMATION CALL: (Monday-Friday, 8:00am-5:00pm) 1-256-754-5507
IN CASE OF EMERGENCY CALL: CHEMTREC: 1-800-424-9300

2. HAZARDS IDENTIFICATION



CLASSIFICATION: Gases under pressure, Liquefied Gas, Flammable Gas
SIGNAL WORD: DANGER
HAZARD STATEMENT: Extremely flammable gas, contains gas under pressure, may explode if heated
SYMBOL: Gas Cylinder, Flame
PRECAUTIONARY STATEMENT: Prevention: Keep away from heat, sparks, open flame, and hot surfaces. No Smoking
 Response: Leaking gas fire: Do not extinguish unless leak can be stopped immediately. Eliminate all ignition sources if safe to do so.
 Storage: Protect from sunlight, store in a well-ventilated place.

EMERGENCY OVERVIEW: Flammable gas. Liquid under high pressure. Colorless, volatile liquid with ethereal and faint sweetish odor. Non-flammable material. Overexposure may cause dizziness and loss of concentration. At higher levels, cardiac irregularities may result from exposure. Vapors displace air and can cause asphyxiation in confined spaces. At higher temperatures, (>250°C), decomposition products may include Hydrofluoric Acid (HF) and carbonyl halides.

POTENTIAL HEALTH HAZARDS

SKIN: Irritation would result from a defatting action on tissue. Liquid contact could cause frostbite.
EYES: Liquid contact can cause severe irritation and frostbite. Mist may irritate.

INHALATION: R-143a is low in acute toxicity in animals. When oxygen levels in air are reduced to 12-14% by displacement, symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration will occur. At high levels, cardiac irregularities may occur.

INGESTION: Ingestion is unlikely because of the low boiling point of the material. Should it occur, discomfort in the gastrointestinal tract from rapid evaporation of the material and consequent evolution of gas would result. Some effects of inhalation and skin exposure would be expected.

DELAYED EFFECTS: None known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
1,1,1-Trifluoroethane	420-46-2	100

COMMON NAME and SYNONYMS

R-143a; HFC143a

There are no impurities or stabilizers that contribute to the classification of the material identified in Section 2

4. FIRST AID MEASURES

SKIN: Promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. Get medical attention if symptoms persist.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes (in case of frostbite water should be lukewarm, not hot) lifting eyelids occasionally to facilitate irrigation. Get medical attention if symptoms persist.

INHALATION: Immediately remove to fresh air. If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available. Get medical attention. Do not give epinephrine (adrenaline).

INGESTION: Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting unless instructed to do so by a physician.

ADVICE TO PHYSICIAN: Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: NA - Gas

AUTOIGNITION TEMPERATURE: NE

UPPER EXPLOSIVE LIMIT: 16.1%

LOWER EXPLOSIVE LIMIT: 7.1%

HAZARDOUS REACTIONS:

Reacts with finely divided metals such as aluminum, zinc, magnesium, and alloys containing more than 2% magnesium. Can react violently if in contact with alkali metals and alkaline earth metals such as sodium, potassium, or barium.

During a fire the product can form toxic and corrosive gases such as hydrogen fluoride.

EXTINGUISHING MEDIA:

Water Spray, Water Fog, Dry Chemical, Carbon Dioxide, "Alcohol" foam

FIRE AND EXPLOSION HAZARDS:

Flammable liquefied gas. Container may burst under intense heat. Ruptured cylinders may rocket or fragment. Heavy vapor may suffocate.

FIRE FIGHTING PROCEDURES:

Water spray should be used to cool containers.

FIRE FIGHTING PROTECTIVE EQUIPMENT:

Use self-contained breathing apparatus with a full-face piece and special protective clothing.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

This product is a flammable, liquefied gas, which exits the container at temperatures capable of causing freeze burns (frostbite). Contents under pressure. Ruptured cylinder may rocket or fragment.

Precautions should take into account the severity of the leak or spill.

Move unprotected personnel upwind of leaking container. Remove ignition sources and ventilate the spill area. Use recommended personal protection and shut off the leak, if without risk. If possible, elevate leak position to highest point of container (should leak gas, not liquid). Water should never be put on leak nor should cylinder be immersed. If possible, dike and contain spillage. Prevent liquid from entering sewers, sumps, or pit areas since vapor is heavier than air and can create a suffocation atmosphere. Capture material for recycle or destruction if suitable equipment is available.

Notify applicable government authority if release is reportable or could adversely affect the

environment.

CERCLA Reportable Quantity = 5,000 lbs.

7. HANDLING AND STORAGE

HANDLING:

Wear appropriate personal protective equipment. A safety shower and eyewash station should be nearby and ready for use.

This product is a flammable, liquefied gas, which exits the container at temperatures capable of causing freeze burns (frostbite). Ensure personnel are trained in handling and storing cylinders. Secure containers at all times. Keep containers closed when not in use.

Ensure there is adequate ventilation or use proper respiratory protection in poorly ventilated or confined areas. Avoid causing and inhaling high concentration or vapor. Atmospheric levels should be controlled to below the occupational exposure limit and kept as low as practicable.

Prevent liquid or vapor from entering sumps or sewers since vapor is heavier than air and may form suffocating atmospheres.

Do not put mixtures of HFC-143a with air or oxygen under pressure; do not use such mixtures for leak or pressure testing. Do not heat containers.

Liquid transfers between containers may generate static electricity. Ensure adequate grounding.

Avoid trapping liquid between closed valves or overfilling containers as high pressures can develop with an increase in temperature.

Avoid HFC-143a contact with flames or very hot surfaces.

STORAGE RECOMMENDATIONS:

Keep containers tightly closed, in a cool, well-ventilated place. Keep containers dry. Keep from incompatibles, open flames, hot surfaces, welding operations, and other heat sources.

STORAGE TEMPERATURE:

Store at temperature not exceeding 125 deg. F. (52deg. C).

INCOMPATIBILITIES:

Freshly abraded aluminum surfaces at specific temperatures and pressures may cause a strong exothermic reaction. Chemically reactive metals: potassium, calcium, powdered aluminum, magnesium, and zinc.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use ventilation to maintain safe levels. Where appropriate engineering controls are not in place or are inadequate, wear suitable respiratory equipment.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Take all precautions to prevent skin contact. Use gloves and protective clothing made of material that has been found by user to be impervious under conditions of use to prevent the skin from becoming frozen for contact with liquid. User should verify impermeability under normal conditions of use prior to general use. Additional protection such as an apron, arm covers, or full body suit may be need depending on conditions of use.

EYE PROTECTION:

Use chemical safety goggles or safety glasses and a face shield when there is potential for eye contact.

RESPIRATORY PROTECTION:

Not normally needed if controls are adequate. If needed, use NIOSH/MSHA approved respirator for organic vapors. For high concentrations and oxygen-deficient atmospheres, use positive pressure air-supplied respirator.

OTHER PROTECTION:

Shower and eye wash station.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
1,1,1-Trifluoroethane	None	None	*1000 ppm TWA (8hr)

* = Workplace Environmental Exposure Level (AIHA)

Minimize exposure in accordance with good hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, colorless liquid and vapor

PHYSICAL STATE: Gas at ambient temperatures

ODOR: Slight ethereal

SOLUBILITY IN WATER (weight %): Slight

BOILING POINT: -48°C (-54°F)

VAPOR PRESSURE: 165 psia @ 21 deg. C (70°F)

FLASH POINT: None

EVAPORATION RATE: No data available

FLAMMABILITY: Flammable

Lower Explosive Limit: 7.1%

Upper Explosive Limit: 16.1%

PARTITION COEFFICIENT

n-OCTANOL/WATER: Log Pow: 1.73

AUTO IGNITION TEMPERATURE: 750°C / 1382°F

DECOMPOSITION TEMPERATURE: No data available

VISCOSITY: Not applicable

VAPOR DENSITY (air = 1.0): 2.9

% VOLATILES BY VOLUME: 100 WT%

DENSITY 0.93 g/cc at 25°C (77°F) - Liquid

pH: Unknown

MELTING POINT: -111°C / -168°F

SPECIFIC GRAVITY: 0.93

MOLECULAR FORMULA: CF₃CH₃

MOLECULAR WEIGHT: 84.06

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Stable under normal conditions.

INCOMPATIBILITIES:

Reacts with finely divided metals such as aluminum, zinc, magnesium. Can react violently if in contact with alkali metals and alkaline earth metals such as sodium, potassium, or barium.

HAZARDOUS DECOMPOSITION PRODUCTS:

Hydrogen fluoride by thermal decomposition and hydrolysis.

CONDITIONS TO AVOID:

Keep away from heat, sparks, and flame. Avoid high temperatures.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION

POSSIBLE HUMAN HEALTH EFFECTS:

Rat inhalation LC50 (4 hr.): 2050 gm/m³; 128,000 ppm

Mouse inhalation LC50 (2 hr.): 1750 gm/m³

In screening studies with experimental animals, exposure above 25,000 ppm followed by a large epinephrine challenge has induced serious cardiac irregularities. Preliminary screening tests

indicated that 1-Chloro-1,1-difluoroethane may be weakly mutagenic. In vivo cytogenicity and dominant lethal assays for mutagenicity were negative. In a two year rat inhalation study, 1-Chloro-1,1-difluoroethane produced no chronic or carcinogenic effects at levels as high as 2% in air.

POTENTIAL HEALTH EFFECTS

Effects of Overexposure:

Eye Contact

Eye contact with the rapidly evaporating liquid may cause frostbite.

Skin Contact

Skin contact with the rapidly evaporation liquid may cause frostbite. Frostbite effects are a change in color of the skin to gray or white, followed by blistering.

Inhalation

Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Inhalation of high vapor concentration may cause dizziness, disorientation, incoordination, narcosis, nausea or vomiting, leading to unconsciousness, cardiac irregularities, or death.

Ingestion

Not an expected route of exposure.

12. ECOLOGICAL INFORMATION

Degradability (BOD): R-143a is a gas at room temperature; therefore, it is unlikely to remain in water.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Reclaim by distillation, incinerate, or remove to a permitted waste facility. Comply with Federal, State, and local regulations. This material may be a RCRA hazardous waste upon disposal due to the ignitability characteristic.

CONTAINER DISPOSAL:

May contain explosive vapors. Do not distribute, make available, furnish, or reuse container when emptied of the original product. Do not weld or use cutting torch on or near container. Empty container retains product residue. Return containers to supplier.

REFRIGERATION APPLICATION:

Subject to "no venting" regulations of Section 608 of the Clean Air Act during the service or disposal of equipment.

14. TRANSPORT INFORMATION

US DOT ID NUMBER: UN2035
US DOT PROPER SHIPPING NAME: 1,1,1-Trifluoroethane
US DOT HAZARD CLASS: 2.1
US DOT PACKING GROUP: Not Applicable

15. REGULATORY INFORMATION

TSCA (TOXIC SUBSTANCES CONTROL ACT) REGULATIONS, 40 CFR 710: All ingredients are on the TSCA Chemical Substances Inventory.

CERCLA and SARA REGULATIONS:

U. S. FEDERAL REGULATIONS:

TSCA Inventory Status: Reported/Included.

Title III Hazard classification sections 311,312 Lists:

Acute: Yes

SARA Extremely Hazardous Substance -No

Chronic: No

CERCLA Hazardous Substance -(*)

Fire: Yes

SARA Toxic Chemicals -No

Reactivity: No

Pressure: Yes * See Disposal Information

HFC-143a is a flammable gas as defined by OSHA in 29CFR 1910.1200 (c). Use of this product may require compliance with 29CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.

CALIFORNIA PROPOSITION 65:

The ingredients in this product do not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

CURRENT ISSUE DATE: September, 2018

PREVIOUS ISSUE DATE: -

OTHER INFORMATION:

HMIS Classification: Health - 1, Flammability - 4, Reactivity - 1

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