

Material Safety Data Sheet

R134a

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 134a
OTHER / GENERIC NAMES: HFC-134a, R-134a
CHEMICAL FORMULA: CF₃CH₂F
PRODUCT USE: Refrigerant

MANUFACTURE:

DISTRIBUTOR: www.chinaR134A.com

2 COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME: 1,1,1,2 – Tetrafluoroethane (HFC-134a)
CAS NUMBER: 811-97-2
TYPICAL WT. %: 100%

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

R134A is clear, colorless liquefied gas with faint ethereal odor. Non-flammable material. Overexposure may cause dizziness, loss of concentration, Central Nervous System depression and cardiac arrhythmia. Asphyxiation possible in confined space if air is displaced by vapors.

SKIN CONTACT

Liquid or escaping vapor contact may cause frostbite. But this product will probably not be absorbed through human skin.

EYES CONTACT

Liquid splashes or vapor spray contact may cause severe irritation and frostbite-like lesions.

INHALATION

Exposure to an oxygen-deficient atmosphere by displacement of this material, symptoms of asphyxiation, loss of coordination, increased pulse rate and deeper respiration will occur. Higher levels can cause cardiac arrhythmia.

INGESTION

Extremely unlikely to ingest. If ingested, effects of inhalation and skin exposure would be expected.

ADDITIONAL EFFECTS

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of Central Nervous System and Cardiovascular System.

4 FIRST AID MEASURES**SKIN**

Flush exposed skin with lukewarm water (not hot). Or cover with a clean, soft cloth or similar covering if water is not available. Get medical attention if frostbite or irritation symptoms occur.

EYES

Immediately flush with plenty of water for at least 15 minutes. Get medical attention if irritation symptoms occur.

INHALATION

Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is labored, give oxygen. Get medical attention. Do not give adrenaline, epinephrine or similar drugs.

INGESTION

Ingestion is not considered a potential route of exposure.

NOTES TO PHYSICIANS

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.

5 FIRE FIGHTING MEASURES**FLAMMABLE PROPERTIES**

FLASH POINT: No flash point

FLASH POINT METHOD: NA

UPPER FLAME LIMIT (volume % in air): NA

LOWER FLAME LIMIT (volume % in air): NA

AUTOIGNITION TEMPERATURE: >743°C

EXTINGUISHING MEDIA

Use media appropriate for surrounding materials.

FIRE FIGHTING INSTRUCTIONS

Use water spray to cool containers.

FIRE AND EXPLOSION HAZARDS

HFC 134a is not flammable in air under ambient conditions of temperature and pressure. Under conditions of high temperature and pressure, certain HFC 134a/air mixtures were shown to be flammable. Mixtures of HFC 134a and air or oxygen should not be used for pressure or leak testing. Certain mixtures of HFC134a and

chlorine may be flammable under some conditions. Thermal decomposition will evolve toxic and irritant vapors.

6 ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE

Use recommended personal protection and evacuate unprotected personnel immediately. Remove ignition sources and shut off leak if without risk. Ventilate the spill area.

7 HANDLING AND STORAGE

HANDLING

Avoid breathing vapors and liquid contact with eyes, skin or clothing. Do not puncture or drop cylinders, expose them to open flame or excessive heat. Use approved cylinders only. Follow standard safety precautions for handling and use of compressed gas cylinders. Do not mix HFC134a with air or oxygen above atmospheric pressure for leak testing or any other purpose.

STORAGE

Keep in a cool, well ventilated place. Keep away from direct sunlight, heat above 120F and any sources of ignition.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Provide local ventilation at filling zones and areas where leakage is probable. Mechanical exhaust ventilation may be adequate for other operating and storage areas. Provide eyewash station in work area.

EYE / FACE PROTECTION

Where there is reasonable probability of liquid contact, wear chemical safety goggles and have eye flushing equipment available.

SKIN PROTECTION

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Rinse contaminated skin promptly. Clean protective equipment and wash contaminated clothing before reuse.

RESPIRATORY PROTECTION

None generally required if controls are adequate. For accidental release or non-ventilated situations, or release into confined space, use NIOSH approved respirator for organic vapors. For high concentrations and oxygen-deficient atmospheres, use positive pressure air-supplied respirator.

EXPOSURE GUIDELINES

INGREDIENT NAME 1,1,1,2-Tetrafluoroethane (HFC-134a)

ACGIH TLV None Established

OSHA PEL None Established

WEEL (AIHA) 1000 ppm 8hr TWA

Minimize exposure in accordance with good hygiene practice. Establish an occupational exposure limit of 1000 ppm (parts per million) (8hr TWA) for this material.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance / Odor Clear, colorless liquified gas with faint ethereal odor.

PH Not Applicable

Boiling point -26.4°C / -15.5F

Vapor pressure 96 psia at 25°C

Vapor density 3.5 (Air=1.0)

Specific gravity 1.21 at 25°C

Solubility in water 0.15

% Volatiles 100

Evaporation Rate >1

10 STABILITY AND REACTIVITY

STABILITY

Chemically stable under specified conditions or storage, shipment and/or use.

INCOMPATIBILITY

Avoid contact with strong alkalis or alkaline earth metals, finely powered metals such as aluminum, magnesium, alloys containing more than 2% magnesium and zinc & strong oxidizers, since they may react or accelerate decomposition.

HAZARDOUS DECOMPOSITION PRODUCTS

Hydrogen fluoride, hydrogen chloride, carbon monoxide, carbon dioxide and chlorine by thermal decomposition and hydrolysis.

HAZARDOUS POLYMERIZATION

Will not occur.

11 TOXICOLOGICAL INFORMATION

1,1,1,2 – Tetrafluoroethane (HFC-134a)

ANIMAL DATA

No skin allergy was observed in guinea pigs following repeated exposure. Acute

inhalation exposure produced anesthetic effects in mice, dogs, cats and monkeys. Repeated inhalation exposure produced no adverse effects in rats. Inhalation of this material, followed by intravenous injection of epinephrine to simulate stress reactions, resulted in cardiac sensitization in dogs. Following long-term inhalation studies in rats, an increased incidence of benign tumors (at high concentrations) in the testes were the only tumors observed. No birth defects were noted in the offspring of rats exposed to this material by inhalation during pregnancy, even at dosages which produced significant adverse effects in the mother. This material produced no genetic changes in standard tests using bacterial or animal cells and whole animals. Single exposure (acute) studies indicate:

EYE IRRITATION

Slightly Irritating to Rabbits

SKIN IRRITATION

Slightly Irritating to Rabbits
(24-hr exposure)

INHALATION

Practically Non-toxic to Rats
(4-hr LC50 >500,000 ppm; 30-min LC50 ~750,000 ppm)

12 ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL INFORMATION**

Based on its low n-octanol/water partition coefficient (log Pow of 1.06), bioaccumulation of this material is considered unlikely.

CHEMICAL FATE INFORMATION

Based on its low n-octanol/water partition coefficient (log Pow 1.06), bioaccumulation of this material is considered unlikely. When evaluated in a 28 day activated sludge test, 3% degradation of this material was observed.

13 DISPOSAL CONSIDERATIONS**WASTE DISPOSAL**

Contaminated HFC-134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with federal, state and local regulations.

14 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: 1,1,1,2-TETRAFLUOROETHANE (R134A)

HAZARD CLASS: 2.2

UN NUMBER: UN 3159

PACKING GROUP: NA

DOT/IMO LABEL: NON-FLAMMABLE GAS

15 REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA) REGULATIONS (40 CFR 710)

All Ingredients are on the TSCA Chemical Substances Inventory.

CERCLA AND SARA REGULATIONS (40 CFR 355, 370, 372)

This product does not contain any chemicals subject to reporting requirements of SARA Section 313.

16 OTHER INFORMATION

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