



SAFETY DATA SHEET

R-134a

Version 2.0
Revision Date 01/31/2022
Document 10005002

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : R-134a
OTHER NAME : 1,1,1,2-Tetrafluoroethane
PRODUCT USE : Refrigerant gas, for professional use only
Restrictions : Do not use product for anything outside of the above specified uses

SUPPLIER : RGAS, LLC
2777 Allen Pkwy, Suite 1185
Houston, Texas 77019


FOR MORE INFORMATION CALL:
(Monday – Friday, 8:00am– 5:00pm)
281-953-5550

IN CASE OF EMERGENCY CALL:
CHEMTREC: 1-800-424-9300

SECTION 2 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

CLASSIFICATION : Gases under pressure, Liquefied Gas
SIGNAL WORD : Warning
HAZARD STATEMENT : Contains gas under pressure, may explode if heated

SYMBOL/PICTOGRAM : Gas cylinder 

HAZARD PREVENTION : Protect from sunlight. Store in a well-ventilated area

OTHER HAZARDS
Misuse or intentional inhalation may lead to death without warning. Vapors are heavier than air and can cause asphyxiation in confined spaces by reducing oxygen available for breathing. liquid refrigerant exposure to eyes or skin may cause frostbite due to rapid evaporation of the liquid. Wear protective gloves / eye protection / face protection

SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	CAS NUMBER	CONCENTRATION
1,1,1,2-Tetrafluoroethane(HFC-134a)	811-97-2	100%

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SECTION 4 - FIRST AID MEASURES

GENERAL ADVICE	: In the case of an accident or if you feel unwell, seek medical advice immediately. If symptoms persist or in all cases of doubt seek medical advice.
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).
SKIN CONTACT	: Rapid evaporation of the liquid may cause frostbite. In case of contact with liquid, promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm water. Get medical attention if symptoms persist.
EYE CONTACT	: Immediately flush eyes with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
INGESTION	: Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Refer to the inhalation section.
NOTES 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.

SECTION 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	: This product is non-flammable Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
UNSUITABLE EXTINGUISHING MEDIA	: No applicable data available
SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE	: This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources. Cylinders are equipped with pressure and temperature relief devices but may still rupture under fire conditions. Cool closed containers exposed to fire with water spray Do not allow run-off from firefighting to enter drains or water courses. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Fire may cause evolution of: Halogenated compounds Hydrogen fluoride

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Carbon oxides
Carbonyl halides

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- PERSONAL PRECAUTIONS** : Evacuate personnel to safe areas.
Keep people away from and upwind of the spill or leak
Wear personal protective equipment. Keep unprotected people away.
Ventilate the area. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Avoid accumulation of vapors in low areas.
Unprotected personnel should not return until air has been tested and determined safe.
- ENVIRONMENTAL PRECAUTIONS** : Prevent further leakage or spillage if safe to do so.
- SPILL CLEANUP** : Evaporates. Ventilate the area.

SECTION 7 - HANDLING AND STORAGE

- HANDLING** : Handle with care
Always wear recommended personal protection equipment.
Avoid inhalation of vapor or mist.
Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C.
Do not puncture or drop cylinders.
Do not expose the cylinders to open flame or excessive heat.
Do not remove valve cap until immediately ready for use.
Always replace cap after use.
Follow all standard safety precautions for handling and use of compressed gas cylinders.
- STORAGE** : Pressurized cylinder: Keep cylinders tightly closed in a cool, well-ventilated area of low fire risk and out of direct sunlight.
Do not expose to temperatures exceeding 50°C
Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured and ready for use.
Protect cylinder and its fittings from physical damage.
Storage in subsurface location should be avoided
Do not store with the following product types:
Self-reactive substances and mixtures
Organic peroxides
Oxidizing agents
Pyrophoric liquids/solids
Self-heating substances and mixtures
Acutely toxic substances and mixtures
The product has an indefinite shelf life when stored properly.
- INCOMPATIBILITIES** : Freshly abraded aluminum surfaces at specific temperatures and pressures may cause



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strong exothermic reaction.
Chemically reactive metals: potassium, calcium, powdered aluminum, magnesium, and zinc.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROLS : Use sufficient ventilation to keep employee’s exposure below recommended limits.
Local exhaust should be used when large amounts are released.
Provide local ventilation in areas where leakage is probable.

PROTECTIVE MEASURES : Do not breathe vapors
Do not get in eyes, skin or on clothing.
Ensure safety showers and eyewash stations are close to the workstation location.
Self-contained breathing apparatus (SCBA) is required if a large release occurs.

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION : For normal conditions, wear safety glasses with side-shields.
Where there is reasonable probability of liquid contact, wear chemical safety goggles or face shield, giving complete protection to eyes.

SKIN AND BODY PROTECTION : Avoid skin contact with leaking liquid refrigerant. Skin contact with refrigerant may cause frostbite.
General work clothing and leather gloves should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, wear impervious cold insulating gloves and face shield.

RESPIRATORY PROTECTION : Under normal manufacturing conditions, no respiratory protection is required when using this product.

EXPOSURE GUIDELINES

Components	CAS Number	ACGIH TLV	OSHA PEL	Other Limit
1,1,1,2-Tetrafluoroethane	811-97-2	None	None	** 1,000 ppm TWA (8hr)

** (AIHA) Workplace Environmental Exposure Level

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquefied Gas

COLOR : Colorless

ODOR : Weak, ether-like

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ODOR THRESHOLD : No applicable data available

pH : Neutral

MELTING POINT : -101°C

BOILING POINT : -26.2°C (-15.1°F)

VAPOR PRESSURE : 85.8 psia @ 70°F

VAPOR DENSITY : 3.5 Note: (Air=1.0)

DENSITY : 1.21g/CM³

FLASH POINT : Not applicable

SOLUBILITY IN WATER : 0.15 wt%

EVAPORATION RATE : >1 (CCL4=1.0)

FLAMMABILITY : Not applicable

LOWER EXPLOSION LIMIT : None

UPPER EXPLOSION LIMIT : None

AUTO IGNITION TEMPERATURE : No applicable data available

DECOMPOSITION TEMPERATURE : >250°C

PARTITION COEFFICIENT : Low Pow: 1.06
n-octanol/water

VISCOSITY : Not applicable

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY : Stable under normal ambient temperature and pressure.

CHEMICAL STABILITY : Stable under normal conditions

POSSIBILITY OF HAZARDOUS REACTIONS : Hazardous polymerization does not occur.

CONDITIONS TO AVOID : Do not expose to temperatures exceeding 50°C.

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Product decomposes under high temperatures
Can form a combustible mixture with air at pressures above atmospheric pressure.
Do Not mix with oxygen or air above atmospheric pressures.

INCOMPATIBLE : Powdered metals
MATERIALS TO AVOID Aluminum
Magnesium
Zinc
Potassium
Calcium

HAZARDOUS : This product can be decomposed by high temperatures (open flames, glowing metal
DECOMPOSITION surfaces, etc.) forming hydrofluoric acid (HF) and possibly carbonyl fluoride.
PRODUCTS

SECTION 11 - TOXICOLOGICAL INFORMATION

INHULATION EFFECTS : LC50: 4 hr. (rat), ≥ 500,000 ppm
(ACUTE) Cardiac Sensitization threshold (dog) 80,000 ppm. NOEL-50,000 ppm

DELAYED EFFECTS : Not mutagenic in four tests
Teratogenic NOEL (rat and rabbit) - 40,000 ppm
(SUB-CHRONIC AND : Sub-chronic inhalation (Rat) NOEL - 50,000 ppm
CHRONIC) Chronic NOEL – 10,000 ppm

OTHER DATA : Not active in four genetic studies

SECTION 12 - ECOLOGICAL INFORMATION

OCTANOL WATER : Low Pow: 1.06
PARTITION COEFFICIENT

Degradability (BOD) : R134a is a gas at room temperature; therefore, it is unlikely to remain in water.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHODS : Observe all Federal, State and Local Environmental regulations.

NOTE : This product is subject to U.S. Environmental protection Agency Clean Air Act
Regulations Section 608 in 40 CFR part 82 regarding refrigerant recycling.

SECTION 14 - TRANSPORT INFORMATION

DOT UN Number : 3159
Proper Shipping Name : 1,1,1,2-Tetrafluoroethane or Refrigerant Gas R 134a
Class : 2.2

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	Packing Group	: not applicable
	Hazard Label	: 2.2
IATA	UN Number	: 3159
	Description of the goods	: 1,1,1,2-Tetrafluoroethane or Refrigerant Gas R 134a
	Class	: 2.2
	Hazard Label	: 2.2
	Packing Instructions (Cargo Aircraft)	: 200
	Packing Instructions (Passenger Aircraft)	: 200
IMDG	UN Number	: 3159
	Description of the goods	: 1,1,1,2-Tetrafluoroethane or Refrigerant Gas R 134a
	Class	: 2.2
	Hazard Labels	: 2.2
	EmS Number	: F-C, S-V
	Marine pollutant	: no

SECTION 15 - REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemicals	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313
PA Right to Know Regulated Chemicals	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Difluoromethane
NJ Right to Know Regulated Chemicals	: 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): Difluoromethane
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

	HMIS III	NFPA
HEALTH HAZARD	: 1	2
FLAMMABILITY	: 1	1
PHYSICAL HAZARD	: 0	
INSTABILITY	:	0



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ANSI/ASHRAE 34 : A1
SAFETY GROUP

REGULATORY STANDARDS: OSHA regulations for compressed gases: 29 CFR 1910.101
DOT Classification, 49 CFR 172.101

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