

SAFETY DATA SHEET

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 Revised Date : Feb 11, 2022
 Prepared Date : July 31, 2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Refrigerant Gas (R-507)
 Synonyms: HFC-507, Akashifron-507
 Manufacturer: East Asia Enviro Sdn. Bhd.
 Address: PMT 1159, Lorong Perusahaan Bukit Minyak 22
 Penang Science Park, 14100 Simpang Ampat,
 Penang Malaysia
 Emergency Phone: 60-4-5057883 (Office Hour)

2. HAZARDS IDENTIFICATION

Classification of the: Gases under pressure, liquefied gas
 substance / mixture

Label Elements:



Hazard statements: H280: Contains gas under pressure; may explode if heated.
 Storage Precautionary: P410 + P403
 statements Protect from direct sunlight. Store in a well-ventilated location.
 Other hazards: Vapours are heavier than air and may cause suffocation due to depletion of oxygen necessary for breathing.
 Cylinders may rupture under fire conditions. Decomposition may occur.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: Pentafluoroethane 1,1,1-Trifluoroethane
 Chemical Formula: C₂HF₅ C₂H₃F₃

| <u>Chemical Name</u> | <u>Chemical Formula</u> | <u>CAS No.</u> | <u>EC No.</u> | <u>Typical Wt %</u> |
|-----------------------|--|----------------|---------------|---------------------|
| Pentafluoroethane | C ₂ HF ₅ | 354-33-6 | 206-557-8 | 50 |
| 1,1,1-Trifluoroethane | C ₂ H ₃ F ₃ | 420-46-2 | 206-996-5 | 50 |

4. FIRST AID MEASURES

4.1 Eyes:

In the event of contact with eye/eyes, eye irritation or blurring of vision may occur.



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Measures: Flush affected eye/eyes with running water for at least 15 minutes. If a contact lens is in place, remove it immediately or whenever able to. Use physiological saline if readily available. Keep affected eyelid/s open to allow evaporation of product. Consult an ophthalmologist in case of persistent ailment, seek medical attention if necessary.

4.2 Skin:

In the event of contact with skin, liquid may cause frostbite. Prolonged overexposure may cause de-fatting or dryness to affected skin area.

Measures: If in case of contact, allow evaporation of product before flushing affected area with lukewarm water. Do not use hot water. Contact a physician in case of persistent ailment, seek medical attention if necessary.

4.3 Inhalation:

Inhalation of high concentration of vapour is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse or deliberate inhalation may cause death without warning. Prolonged direct exposures may lead to temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Gross exposure may be fatal.

Individuals with pre-existing diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

Inhalation may include temporary nervous systems disorders such as depression. Other anesthetic effects such as dizziness, headache, confusion, in-coordination and loss of consciousness may also occur.

Measures: If in the event of inhalation, immediately evacuate affected personnel to open air area with sufficient fresh air. If not possible to access personnel, do not attempt aid unless personal breathing apparatus is available. Artificial ventilation by blowers or fans may be required. If affected personnel is conscious, try to keep personnel clam. If not breathing, give artificial respiration. If difficulty in breathing is observed, give oxygen if available. Seek medical attention if necessary.

4.4 Ingestion: If in the remote event of accidental ingestion, seek immediate medical attention.

4.5 Notes to Physicians: This material may cause heart to be more susceptible to conditions such as Arrhythmias. Catecholamine such as adrenaline and other compounds having similar effects are advised to be reserved for emergencies and only to be used with exceptional caution.

5. FIRE-FIGHTING MEASURES

Upper, Flammable Limits in Air (% by volume): None by ASTM E681

Lower, Flammable Limits in Air (% by volume): None by ASTM E681

Flash point: Gas, Not applicable per DOT regulations

Auto-ignition Temperature: >750°C

Extinguishing Media:

Use extinguishing media appropriate to extinguish or contain fire conditions.



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Specific Hazards:

Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of torch flames. This flame effect will only occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate to disperse refrigerant vapor from work area before using any open flame.

R-507 is not flammable at ambient temperatures and atmospheric pressure. However, this material will become combustible when mixed with air under pressure and exposed to strong ignition sources. Contact with certain reactive metals may result in formation of explosive or exothermic reactions under specific conditions.
(e.g. very high temperatures and/or appropriate pressures).

Protection Actions For Fire Fighting Instructions:

Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) is required if cylinders rupture or contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

Other Precautions

If safe to do so, remove the exposed containers, or cool with water.
If under fire conditions, avoid unnecessary proximity, maintain safe evacuation distance. Only attempt to ventilate and clean the rooms if there is no imminent danger present.

6. ACCIDENTAL RELEASE

MEASURES Personal Precautions:

Avoid contact with skin and eyes.
Do not smoke or light any open flames.
Do not breathe in the vapors.
Review firefighting measures given in section 5 before proceeding with clean up.
Use appropriate personal protective equipment.
Work from upwind, if possible.

Methods and materials for containment and cleaning up:

Prevent the product from spreading into the environment. Shut off the source of R-507. Ventilate spillage area, especially low or enclosed places where heavy vapors may collect and concentrate. Restrict access to the area until completion of the clean-up procedure.
Let the product evaporate.
Remove open flames.
Use self-contained breathing apparatus (SCBA) for large spills or releases.

7. HANDLING AND STORAGE

Precaution for Safe Handling:

Avoid inhalation of vapors. Avoid liquid contact with eyes and skin. Use with sufficient ventilation to keep employee exposure below recommended limits. R-507 should not be mixed with air for leak testing. In general, product should not be in area whereby high concentrations of air above atmospheric pressure is present. Contact with chlorine or other strong oxidizing agents should also be avoided.

Conditions for Storage: Keep in a clean, dry area. Do not heat above 52°C (125°F).



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Avoid inhalation of vapors. Avoid contact with skin or eyes. Use with sufficient ventilation to keep employee exposure below recommended exposure limit. Local exhaust should be used if large amounts are released. Mechanical ventilation should be used in low or enclosed places.

Personal Protective Equipment:

Impervious gloves should be used to avoid prolonged or repeated exposure. Chemical splash goggles should be available for use as needed to prevent eye contact. Under normal manufacturing conditions, no respiratory protection is required when handling this product, unless ventilation is inadequate. Self-contained breathing apparatus (SCBA) is required if large release occurs.

Exposure Guidelines

| <u>Ingredient Name</u> | <u>ACGIH TLV</u> | <u>OSHA PEL</u> | <u>OTHER LIMIT</u> |
|-------------------------------|-------------------------|------------------------|---------------------------|
| Pentafluoroethane | None | None | **1000 ppm TWA (8 hr) |
| 1,1,1-Trifluoroethane | None | None | *1000 ppm TWA (8 hr) |

* = Limit established by Sinochem

** = Workplace Environment Exposure Level (AIHA)

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

| | |
|---------------------|---|
| Appearance | Clear, Colorless liquid and vapor |
| Odor | Slightly ethereal |
| pH | Neutral |
| Boiling Point | -46.7°C (-52.0°F) |
| Freezing Point | Not determined |
| Vapor Pressure | 153.9 psia @ 21°C (70°F) |
| Vapor Density | 3.43 @ 25°C (77°F) (Air=1) |
| Specific Gravity | 1.07 @ 21°C (70°F) (H ₂ O=1) |
| Solubility in Water | Unknown |
| Molecular Weight | 98.8 |

10. STABILITY AND REACTIVITY

Chemical Stability: This material is chemically stable under specific conditions, storage shipment and/or use.

Conditions to avoid: Open flames and high temperatures.

Incompatibility with other materials: Incompatible with alkali or alkaline earth metals – powdered Al, Zn, Be, etc



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Possibility of hazardous reaction & products: This material can be decomposed in high temperatures (open flames, glowing metal surfaces, etc) thus, forming hydrochloric and hydrofluoric acids, and possibly carbonyl halides. These materials are toxic and irritating. Contact should be avoided.

Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

Pentafluoroethane (R-125)

LC₅₀ : 4 hr. (rat) - > 800,000 ppm

Cardiac Sensitization threshold (dog) 75,000 ppm.

Trifluoroethane (R-143a)

LC₅₀ : 4 hr. (rat) - > 540,000 ppm

Cardiac Sensitization NOEL >250,000 ppm

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Pentafluoroethane (R-125)

Teratogenic NOEL (rat and rabbit) - 50,000 ppm

Trifluoroethane (R-143a)

Subchronic inhalation (rat) NOEL - ≥ 50,000 ppm

Chronic NOEL - 10,000 ppm

Teratogenic NOEL (rat) - 40,000 ppm

Subchronic inhalation (rat) NOEL - 40,000 ppm

OTHER DATA:

Pentafluoroethane (R-125) - Not active in four genetic studies

Trifluoroethane (R-143a) - Not active in two genetic tests.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

No data available

ODP: 0

GWP: 3300 (relative to carbon dioxide for integration of 100years)

13. DISPOSABLE CONSIDERATIONS

Prohibition

Do not allow the product to be released to the environment.

Waste Disposal

Comply with local regulations. Reclaim by distillation or remove to a permitted waste facility.

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14. TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO

Hazard Label

:



Proper Shipping Name : Liquefied gas, N.O.S. (Pentafluoroethane, 1,1,1-Trifluoroethane)
DOT Name : Refrigerant Gas R-507
IMO Class (Hazard Class) : 2.2
UN no. : 3163
DOT/IMO Label : Non-Flammable Gas

15. REGULATORY INFORMATION

Hazard Categories under SARA Title III Rules (40CFR Part 370)

Acute : Yes
Chronic : Yes
Fire : No
Reactivity : No
Pressure : Yes

Safety (S) Phrases:

S47: Keep at temperature not exceeding 52°C.
S41: In case of fire and/or explosion do not breathe fumes.
S57: Use appropriate containment to avoid environmental contamination
S59: Refer to manufacturer/supplier for information on recovery/recycling
S61: Avoid release to the environment. Refer to special instructions/safety data sheet.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the Safety Data Sheet. The user's attention is drawn to the possible existence of additional provisions, which complete these regulations. Refer to all applicable National, International and Local regulations or provisions.

16. OTHER INFORMATION

The information in this Safety Data Sheet only concerns the above-mentioned product and does not relate to use with other product(s) or in any process. This information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to ensure that the information is appropriate and correct for his special use of this product.

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