1. CHEMICAL PRODUCT

Material Identification
Product Name : R507
Formula : C2H3F3, C2HF5

Manufacturer or supplier's details
Company name of supplier : Zhejiang Yonghe Refrigerant Co., Ltd.
Address : No. E-025 Donggang Industrial District, Quzhou, Zhejiang, China

2. HAZARDS IDENTIFICATION

Low acute toxicity. High exposures may cause an abnormal heart rhythm and prove suddenly fatal. Very high atmospheric concentrations may cause anesthetic effects and asphyxiation.
Liquid splashes or spray may cause freeze burns to skin and eyes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

EEC No.: 206-557-8 HFC125, 206-996-5 HFC143a

HAZARDOUS INGREDIENT(S)	CAS Number	%	Symbol	R Phrases
Pentafluoroethane (HFC 125)	000354-33-6	50		
1,1,1-Trifluoroethane (HFC 143a)	000420-46-2	50	F+	R12

4. FIRST-AID MEASURES

The first aid advice given for skin contact, eye contact, and ingestion is applicable following exposures to the liquid or spray.

Inhalation: Remove patient from exposure, keep warm and at rest. Administer oxygen if necessary. Apply artificial respiration if breathing has ceased or shows signs of failing. In the event of cardiac arrest apply external cardiac massage. Obtain immediate medical attention.
Skin Contact: Thaw affected areas with water. Remove contaminated clothing. Caution: clothing may adhere to the skin in the case of freeze burns. After contact with skin, wash immediately with plenty of warm water. If irritation or blistering occur obtain medical attention.
Eye Contact: Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Obtain immediate medical attention.
Ingestion: Unlikely route of exposure. Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain immediate medical attention.

Further Medical Treatment
Symptomatic treatment and supportive therapy as indicated.
Adrenaline and similar sympathomimetic drugs should be avoided following exposure as cardiac arrhythmia may result with possible subsequent cardiac arrest.

5. FIRE-FIGHTING MEASURES

This refrigerant is not flammable in air under ambient conditions of temperature and pressure. Certain mixtures of this refrigerant and air when under pressure may be flammable. Mixtures of this refrigerant and air under pressure should be avoided. Certain mixtures of HFCs and chlorine may be flammable or reactive under certain conditions. Thermal decomposition will evolve very toxic and corrosive vapours. (hydrogen fluoride) Containers may burst if overheated.

Extinguishing Media: As appropriate for surrounding fire. Water spray should be used to cool containers.
Fire Fighting Protective Equipment: A self-contained breathing apparatus and full protective clothing must be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Ensure suitable personal protection (including respiratory protection) during removal of spillages. Provided it is safe to do so, isolate the source of the leak. Allow small spillages to evaporate provided there is adequate ventilation.

Large spillages: Ventilate area. Contain spillages with sand, earth or any suitable adsorbent material. Prevent liquid from entering drains, sewers, basements and workpits since the vapour may create a suffocating atmosphere.

7. HANDLING AND STORAGE

HANDLING

Avoid inhalation of high concentrations of vapours. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Atmospheric concentrations well below the occupational exposure limit can be achieved by good occupational hygiene practice. The vapour is heavier than air, high concentrations may be produced at low levels where general ventilation is poor, in such cases provide adequate ventilation or wear suitable respiratory protective equipment with positive air supply.
Avoid contact with naked flames and hot surfaces as corrosive and very toxic decomposition products can be formed.
Avoid contact between the liquid and skin and eyes.
For correct refrigerant composition, systems should be charged using the liquid phase and not the vapour phase.

Process Hazards

Liquid refrigerant transfers between refrigerant containers and to and from systems can result in static generation.
Ensure adequate earthing.
Certain mixtures of HFCs and chlorine may be flammable or reactive under certain conditions.

STORAGE

Keep in a well-ventilated place. Keep in a cool place away from fire risk, direct sunlight and all sources of heat such as electric and steam radiators.
Avoid storing near to the intake of air conditioning units, boiler units and open drains.
Cylinders and Drums: Keep container dry.
Storage temperature (°C): < 45

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Wear suitable protective clothing, gloves and eye/face protection. Wear thermal insulating gloves when handling liquified gases. In cases of insufficient ventilation, where exposure to high concentrations of vapour is possible, suitable respiratory protective equipment with positive air supply should be used.

Occupational Exposure Limits

HAZARDOUS INGREDIENT(S)	LTEL 8hr TWA ppm	LTEL 8hr TWA mg/m3	STEL ppm	STEL mg/m3	Notes
Pentafluoroethane (HFC 125)	1000	-	-	-	COM
1,1,1-Trifluoroethane (HFC 143a)	1000	-	-	-	COM

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Form	: Liquified gas
Colour	: Colourless
Odour	: Slight Ethereal
Boiling Point	: -47.1 °C
Molecular Mass	: 98.86 gm/mole
Vapor Pressure	: 1.29 MPa @ 25 C
Liquid Density	: 1.04 kg/m3 @ 25 °C
Solubility in Water	: Negligible
Critical Temperature	: 71 °C
Critical Pressure	: 3.72 MPa
Vapour Density (Air= 1)	: 3.5
Soluble in	: Chlorinated Solvents, Alcohols, Esters
ODP	0
GWP	3985

10. STABILITY AND REACTIVITY

Hazardous Reactions: Certain mixtures of HFCs and chlorine may be flammable or reactive under certain conditions.
Incompatible materials: finely divided metals, magnesium and alloys containing more than 2% magnesium.
Can react violently if in contact with alkali metals and alkaline earth metals- sodium, potassium, barium.
Hazardous Decomposition Product(s): Hydrogen fluoride by thermal decomposition and hydrolysis.

11. TOXICOLOGICAL INFORMATION

Inhalation
High exposures may cause an abnormal heart rhythm and prove suddenly fatal. Very high atmospheric concentrations may cause anaesthetic effects and asphyxiation.

Skin Contact
Liquid splashes or spray may cause freeze burns. Unlikely to be hazardous by skin absorption.

Eye Contact
Liquid splashes or spray may cause freeze burns.

Ingestion
Highly unlikely - but should this occur freeze burns will result.

Long Term Exposure
HFC 125: An inhalation study in animals has shown that repeated exposures produce no significant effects (50,000ppm in rats).
HFC 143a: An inhalation study in animals has shown that repeated exposures produce no significant effects (40,000ppm in rats).

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution
High tonnage material produced in wholly contained systems. High tonnage material used in open systems. Vapour.

Persistence and Degradation
HFC 125: Decomposed slowly in the lower atmosphere (troposphere). Atmospheric lifetime is 32.6 year(s).
Has a Halocarbon Global Warming Potential (HGWP) of 0.70 (relative to a value of 1 for CFC 11) or a Global Warming
Potential (GWP) of 2800 (relative to a value of 1 for carbon dioxide at 100 years).
HFC 143a: Decomposed slowly in the lower atmosphere (troposphere). Atmospheric lifetime is 53.5 year(s).
Has a Halocarbon Global Warming Potential (HGWP) of 1.0 (relative to a value of 1 for CFC 11) or a Global Warming
Potential (GWP) of 3800 (relative to a value of 1 for carbon dioxide at 100 years).
HFC 125, HFC 143a: Do not influence photochemical smog (i.e. they are not VOCs under the terms of the UNECE agreement). Do not deplete ozone.

Effect on Effluent Treatment
Discharges of the product will enter the atmosphere and will not result in long term aqueous contamination.

13. DISPOSAL CONSIDERATIONS

Best to recover and recycle. If this is not possible, destruction is to be in an approved facility which is equipped to absorb and neutralize acid gases and other toxic processing products.

14. TRANSPORT INFORMATION

UN No. 3163
AIR

ICAO/IATA	
-primary	: 2.2
SEA	
IMDG	
-primary	: 2.2
Marine Pollutant	: Not classified as a Marine Pollutant
Proper Shipping Name	: REFRIGERANT GAS N.O.S. (PENTAFLUOROETHANE, 1,1,1 TRIFLUOROETHANE)
ROAD/RAIL	
ADR/RID Class	2
ADR/RID Item No	: 2A
ADR Sin	3163

15. REGULATORY INFORMATION

Not Classified as Hazardous to Users.

16. OTHER INFORMATION

Information in this publication is believed to be accurate and is given in good faith, but it is for the Customer to satisfy itself of the suitability for its own particular purpose. Accordingly, UNIFORM REFRIGERATION & AIR-CONDITIONING SUPPLY, INC. gives no warranty as to the fitness of the Product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that such exclusion is prevented by law. Freedom under Patent, Copyright and Designs cannot be assumed.

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