



**ZHEJIANG YONGHE REFRIGERANT
CO., LTD.**

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**Material Safety Data Sheet
(REFRIGERANT R507)**

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R507

PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number: YH000909
Product Name Forane (R) 507
Chemical Family Hydrofluorocarbons
Chemical Formula Mixture
Chemical Name Pentafluoroethane(HFC-125)/1,1,1-Trifluoroethane(HFC-143a)
Product Use Refrigerant Blend

Company Identification

MANUFACTURER/DISTRIBUTOR: Zhejiang Yonghe Refrigerant Co.,Ltd.

PHONE NUMBERS

Product Information: 86-570-8886807
Transport Emergency: 86-570-3832797
Medical Emergency: 86-570-3832776

COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS No.	Typical Wt.
Ethane, pentafluoro-	354-33-6	50%
Ethane, 1,1,1-trifluoro-	420-46-2	50%

HAZARDS IDENTIFICATION

Emergency Overview

Colorless liquefied gas with faint ether odor.

DANGER!

LIQUID AND GAS UNDER PRESSURE, OVERHEATING OR OVERPRESSURIZING MAY CAUSE GAS RELEASE OR VIOLENT CYLINDER BURSTING. MAY DECOMPOSE ON CONTACT WITH FLAMES OR EXTREMELY HOT METAL SURFACES TO PRODUCE TOXIC

AND CORROSIVE PRODUCTS. VAPOR REDUCES OXYGEN AVAILABLE FOR BREATHING AND IS HEAVIER THAN AIR. HARMFUL IF INHALED AND MAY CAUSE HEART IRREGULARITIES, UNCONSCIOUSNESS OR DEATH. LIQUID CONTACT WITH EYES OR SKIN MAY CAUSE FROSTBITE.

Potential Health Effects

Skin contact and inhalation are expected to be the primary routes of occupational exposure to this material. However, exposure to gas of this material at high concentrations may effect the nervous system and produce a rapid anesthetic effect. The dense vapor of this material can reduce the oxygen available for breathing and produce symptoms such as headache, dizziness, drowsiness, cyanosis and lack of muscle control followed by collapse. Prolonged exposure to and oxygen deficient atmosphere may be fatal. Inhalation of this material may cause an increase in the sensitivity of the heart to adrenaline, which could result in irregular heart beats and reduced heart function. Medical conditions aggravated by exposure to this material include heart disease or compromised heart function.

FIRST AID MEASURES

IF IN EYES, immediately flush with plenty of water. Get medical attention if irritation persists.

IF ON SKIN, Flush exposed skin with lukewarm water (not hot), or use other means to warm skin slowly. Get medical attention if frostbitten by liquid or if irritation occurs.

IF SWALLOWED, Not applicable- product is a gas at ambient temperatures.

IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Do not give adrenaline, epinephrine or similar drugs following exposure to this product.

FIRE FIGHTING MEASURES

Fire and Explosive Properties

Auto-Ignition Temperature	NA	
Flash Point	NA-GAS	Flash Point Method
Flammable Limits-Upper	NA	
Lower	NA	

Extinguishing Media

Use extinguishing media appropriate to surrounding fire conditions..

Fire Fighting Instructions

Stop the flow of gas if possible. Use water spray on person making shut-off. Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Banker Gear) and self-contained breathing apparatus (pressure demand NOISH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Fire and Explosion Hazards

May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. Liquid and gas under pressure, overheating or overpressurizing may cause gas release and/or violent cylinder bursting. Container may explode if heated due to resulting pressure rise. Some mixtures of HCFCs and/or HFCs, and air or oxygen may be combustible if pressurized and exposed to extreme or flame.

ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Use Halogen leak detector or other suitable means to locate leaks or check atmosphere. Keep upwind. Evacuate enclosed spaces and disperse gas with floor-level forced-air ventilation. Exhaust vapors outdoors. Do not smoke or operate internal combustion engines. Remove flames and heating elements.

HANDLING AND STORAGE

Handling

Do not get in eyes, on skin or clothing. Avoid breathing gas. Keep container closed. Use only with adequate ventilation. Do not enter confined spaces unless adequately ventilated.

Storage

Do not apply direct flame to cylinder. Do not store cylinder in direct sun or expose it to heat above 120F. Do not drop or refill this cylinder. Keep away from heat, sparks and flames.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open progress equipment.

Eye/Face Protection

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin Protection

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

Respiratory Protection

Avoid breathing gas. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components (full facepiece recommended). Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Airborne Exposure Guideline for Ingredients

Exposure Limit	Value
Ethane,pentafluoro- WEEL TWA	4900mg/m3 1000ppm
Ethane,1,1,1-trifluoro-	3400mg/ m3 1000ppm

- Only those components with exposure limits are printed in this section.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Colorless liquefied gas, No turbid
PH	NA
Specific Gravity	107@21 C/70F
Vapor Pressure	153.9 psia@21 C/70 F
Vapor Density	3.43
Melting Point	NE

Freezing Point	NE
Boiling Point	-46.7 C/ -52F
Solubility In Water	NA
Percent Volatile	100
Molecular Weight	98.86

STABILITY AND REACTIVITY

Stability

This material is chemically stable under specified conditions or storage, shipment and/or use. See HANDLING AND STORAGE section of this MSDS for specified conditions.

Incompatibility

Avoid contact with strong alkali or alkaline earth metals, finely powdered metals such as aluminum, magnesium or zinc and strong oxidizers, since they may react or accelerate decomposition.

Hazardous Decomposition Products

Thermal decomposition products include hydrogen fluoride, hydrogen chloride, carbon monoxide, carbon dioxide and chlorine.

TOXICOLOGICAL INFORMATION

Toxicological Information

Ethane,1,1,1-trifluoro

Inhalation, followed by intravenous injection of epinephrine to simulate stress reactions, resulted in cardiac sensitization in dogs. Following repeated inhalation exposure, lung irritant effects including mild bronchitis and pneumonia were observed in rats and guinea pigs. No adverse effects were observed in long-term oral studies with rats. No birth defects were noted in the offspring of rats or rabbits exposed by inhalation during pregnancy. No genetic changes were observed in standard tests using animal cells or whole animals. Both positive and negative results have been reported in tests using bacterial single exposure (acute) studies indicate inhalation-practically Non-Toxic to Rats (4-hr LC50>540,000ppm)

Ethane,pentafluoro-

Inhalation, followed by intravenous injection of epinephrine to simulate stress reactions, resulted in cardiac sensitization in dogs. Following repeated inhalation exposure, no adverse effects were observed in rats. No adverse effects were observed in long-term oral studies with rats. No birth defects were noted in the offspring of rats or rabbits exposed by inhalation during pregnancy. No genetic changes were observed in standard tests using animal cells or whole animals. Single exposure(acute) studies indicate Inhalation-Practically Non-Toxic to Rats(4-hr LC50>8000,000ppm)

ECOLOGICAL INFORMATION

Ecotoxicological Information

Ethane, 1,1,1-trifluoro-

This material is practically non-toxic to *Daphnia magna* (48-hr LC50 300mg/l) and on more than slightly toxic to rainbow trout(96-hr LC50>40mg/l)

Chemical Fate Information

Ethane,pentafluoro-

When released into the environment, this material may be expected to partition almost exclusively into the atmosphere. Based on its low n-octanol/water partition coefficient (log Pow of 1.48),

bioaccumulation is considered unlikely. In a 28-day ready biodegradability closed bottle test, it appeared to be stable (about 2% degraded). This material does not dissociate in water.

DISPOSAL CONSIDERATIONS

Waste Disposal

Recover, reclaim or recycle when practical. Dispose of in accordance with country and local regulations. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from country laws and regulations.

TRANSPORTATION INFORMATION

DOT Name	Liquefied Gas , NOS
DOT Technical Name	(1,1,1-Trifluoroethane, Pentafluoroethane)
DOT Hazard Class	2.2
UN Number	UN 3163
DOT Packing Group	PG NA
RQ	

REGULATORY INFORMATION

Hazard Categories Under Criteria of SAVA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health: Yes	Fire: No
Delayed (Chronic) Health: No	Reactivity: No
Sudden Release of Pressure: Yes	

OTHER INFORMATION

Revision Information

Revision Data	19 JUN 2007	Revision Number 3
Supersedes Revision Dated	16-JUN-2007	

Revision Summary

Revised section 9.

Key

NE= Not Established NA= Not Applicable (R) = Registered Trademark

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End of MSDS