R417A

Version 2 Revision Date 10/01/2020 Print Date 01/05/2021

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : R417A

Product Use Description : Refrigerant

Company : ZHEJIANG NOF CHEMICAL CO LTD .
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For more information call : 0086-579-82025658
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 0086-579-82025658**
: **Transportation: 0086-15088239500**
: (24 hours/day, 7 days/week)

SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Pentafluoroethane	354-33-6	46.6
1,1,1,2-Tetrafluoroethane	811-97-2	50.0
Butane	106-97-8	3.4

SECTION 3.HAZARDS IDENTIFICATION

POTENTIAL HEALTH HAZARDS

SKIN: Irritation would result from a defatting action on tissue. Liquid contact could cause frostbite.

EYES: Liquid contact may cau se frostbite. Mist may irritate.

INHALATION: Overexposure may cause dizziness and loss of concentration.At higher levels, central nervous system depression and cardiac arrhythmia may occur.

INGESTION: Unlikely route of exposure. Should it occur, discomfort in the gastrointestinal would occur.

CHRONIC (CANCER) INFORMATION: None of the components are designated as carcinogens by IARC, NTP, OSHA, orACGIH.

TERATOLOGY (BIRTH DEFECT) INFORMATION: Not expected to be teratogenic.

REPRODUCTIVE INFORMATION: No hazard expected.

4. FIRST AID MEASURES

SKIN: Warm the area grad ually by flushing with plenty of water.Get medical attention if there is evidence of tissue damage.

EYES: Irrigate eyes with running water for at least 15. Get medical attention if symptoms persist.

INHALATION: Immediately remove to fresh air. If breathing has stopp ed, give artificial respiration, administer oxygen and call aphysician. Do not give epinephrine (adrenaline) or similar drugs.

INGESTION: Do not induce vomiting. Get medical attention.

SECTION 5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: Not flammable.

FIRE AND EXPLOSION HAZARDS: Sealed containers exposed to elevated temperatures may rup ture explosively.

FIRE FIGHTIN PRECAUTIONS/INSTRUCTIONS:

Keep personnel removed and upwind of fire.Firefighters should wear self-contained NIOSH-approved breathing apparatus.Wear full protective equipment.Cool tank/container with water spray.Fight fire from a distance, heat may rupture containers.

EXTINGUISHING MEDIA: Use any stand ard agent – choose the o ne most appropriate for type of surrounding fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

Remove or extinguish ignition or combustion so urces.Evacuate enclosed spaces until gas is dispersed. Keep upwind.Stop the release of gas, if possible without risk. Disperse the gas with floor level forced-air ventilation.Exhaust vapors outdoors.Contain the spill by building a dike using absorbent material. Collect the remainder of the spill with absorbent material and place into a drum approved for waste d isposal or recovery. Wash contaminated clothing before use.

SECTION 7.HANDLING AND STORAGE

HANDLING (Personnel): Use insulated or lined butyl gloves,face shield or goggles,and impervious clothing.

HANDLING (Physical Aspects): Good general ventilation is usually adequate,but local ventilation may be needed if gas is vented to the atmosphere.

STORAGE : Do not store cylinders in direct sun or expose to heat above 120 F.Keep the cylinder valve tightly closed when not in use and store in a well ventilated area.

SECTION 8.EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Keep container tightly closed.Observe label precautions.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Goggles or face shield.

RESPIRATORS: Use if exposure level is above PEL.

PROTECTIVE CLOTHING: Impervious

ADDITIONAL RECOMMENDATIONS:

Where contact with liquid is likely,such as in a spill or leak, impervious boots and clothing should be worn. High dose-level warning signs are recommended for areas of principle exposure. Provide eyewash stations and quick-drench shower facilities at convenient locations. For tank cleaning operations, see OSHA regulations,29 CFR 1910.132 and 29 CFR 1910.133.

EXPOSURE GUIDELINES

Exposure Limits (UK): OES: 1000 ppm (8hr TWA reference period) for Tetrafluoroethane.

SECTION 9.PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Volatile liquid with faint, sweet odor
SPECIFIC GRAVITY (water = 1.0):	1.21
SOLUBILITY IN WATER (weight %):	0.12% at 77 F
BOILING POINT:	-41.4 F
VAPOR DENSITY (air = 1.0):	2.3
IGNITION TEMPERATURE:	Not Established

SECTION 10.STABILITY AND REACTIVITY

INCOMPATIBILITY WITH OTHER MATERIALS:

Strong oxidants and freshly scraped aluminum, alkali metals,and alkali earth metals (sodium, magnesium, etc.) may cause exothermic reaction.The aluminum in refrigeration systems contains an oxide/chloride coating to prevent reaction with metal.

DECOMPOSITION: Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

POLYMERIZATION: Will notoccur.

OTHER HAZARDS: Cylinders of used product may contain oil as well as refrigerant.A liquid leak or venting during a fire will produce a cloud of oil mist that is very flammable.

SECTION 11. TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH HAZARD: Greatest hazard is contact with escaping liquid which can cause frostbite and damage to exposed tissue.Gas may displace oxygen and cause light-headedness, eye irritation and suffocation .

ACUTE SYMPTOMS: Headaches, dizziness, loss ofconsciousness.

LONG TERM HEALTH HAZARDS: Exposure to high concentrations may lead to cardiac irregularities, unconsciousness or death.

CARCINOGENICITY: Not designated as carcinogen by IARC, NTP, OSHA, orACGIH.

SECTION 12. ECOLOGICAL INFORMATION

Ozone Depletion Potential
ODP: 0

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal

Recycle or reclaim if possible. Reclaimed material may be incinerated, if the toxic and corrosive combustion p roducts (HF and HCI) are handled appropriately. Incinerate material in accordance with Fed eral,State/Provincial and Local requirements.Do not incinerate in closed containers.

SECTION 14. TRANSPORT INFORMATION

DOT	**UN/ID Number**	: UN3163
	Proper shipping name	: LIQUEFIED GAS, N.O.S. (Pentafluoroethane, 1,1,1,2Tetrafluoroethane, Butane)
	Class	2.2
IATA	UN/ID Number	: UN3163
	Labelling:	2-NON-FLAMMABLE GAS
	Class	: 2.2
	Packing instructions(Cargo Aircraft)	: 200
	Quantity	: 150kg
	Packing instructions(Passenger Aircraft)	: 200
	Quantity	: 75kg

SECTION 15. OTHER INFORMATION

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER.

REPRODUCTIVE HARM: None known.

Further information

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