Material Safety Data Sheet
(REFRIGERANT 410A)

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R 410A

IDENTIFICATION OF THE SUBSTANCE

PREPARATION AND COMPANY/ UNDERTAKING

PRODUCT NAME: R410A

Company Identification

MANUFACTURER/DISTRIBUTOR: ZHEJIANG YONGHE REFRIGERANT CO.,LTD.
No. E-025, Dong Gang Industrial District,
Quzhou, Zhejiang, China

PHONE NUMBERS

Product Information: 86-570-8886807

Transport Emergency: 86-570-3832797

Medical Emergency: 86-570-3832776

COMPOSITION/INFORMATION ON INGREDIENTS

EC No.: 200-839-4 HFC 32, 206-557-8 HFC 125

HAZARDOUS INGREDIENT(S)	CAS No.	%(w/w)	Symbol	R Phrases
Difluoromethane(HFC 32)	75-10-5	50	F+	R1
Pentafluoroethane(HFC 125)	354-33-6	50		

HAZARDS IDENTIFICATION

Low acute toxicity. High exposures may cause an abnormal heart rhythm an 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.

FIRST AID MEASURES

The first aid advice given for skin contact, eye contact, and ingestion is applicable following exposures to the liquid or spray. See also section 11.

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 message. 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 occurs 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

Do not induce vomiting. Provide 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.

FIRE FIGHTING MEASURES

The refrigerant is not flammable in air under ambient 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 vapors. (hydrogen fluoride)

Containers may burst if overheated.

Extinguish Media: As appropriate for surrounding fire. Water spray should be used to cool containers.

Fire Fighting Protective Equipment: A self contained breathing apparatus and suitable protective clothing must be worn in fire conditions. See Section 8.

ACCIDENTAL RELEASE MEASURES

Ensure suitable personal protection (including respiratory protection) during removal of spillages. See Section 8.

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, basement and work pits since the vapor may create a suffocating atmosphere.

HANDLING AND STORAGE

HANDLING
Avoid inhalation of high concentrations of vapours. Atmospheric level should be controlled in compliance with the occupational exposure limit. Atmosphere 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 changed 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. Ensur adequate earthling. Certain mixtures of HFCs and chlorine may be flammable or reactive under certain conditions.
STORAGE
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(Deg C): < 45

EXPOSURE CONTROLS/PERSONAL PROTECTION

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

HAZARDOUS	LIEL 8hr	LIEL 8hr	STEL	STEL	Notes
Pentafluoroethane(HFC125)	1000	-	-	-	COM
Difluoromethane (HFC 32)	1000	-	-	-	COM

PHYSICAL AND CHEMICAL PROPERTIES

Form:	liquefied gas
Colour:	colourless
Odour:	slight ethereal
Boiling Point (Deg C):	-51.58 to –51.9(boiling range)
Vaper Presure (mm Hg):	10880 at 20 Deg C
Density (g/ml):	1.09 at 20 Deg C
Solubility (Water):	insoluble
Solubility (Other):	soluble in chlorinated solvents, alcohols, esters
Vapour Density	2.6 at bubble point temperature

STABILITY AND REACTIVITY

Hazardous Reactions
Certain mixtures of HFCs and chlorine may be flammable or reactive under certain conditions.
Incompatible materials: finely divided metal, 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

TOXICOLOGICAL INFORMATION

In halation
High exposure may cause an abnormal heart rhythm and prove suddenly fatal. Very high atmospheric concentrations may cause anesthetic effects and asphyxiation.
Skin Contact
Liquid splashes or spray may cause freeze burns. Unlike 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
HFC32: An inhalation study in animals has shown that repeated exposures produce no significant
Effects -49500ppm in rats
HFC 125: An inhalation study in animals has shown that repeated exposures produce significant
Effects -50000ppm in rats

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
HFC32: Decomposed comparatively rapidly in the lower atmosphere(troposphere) .
Atmospheric lifetime is 5.6 year(s)
Has a Global Warming Potential (GWP) of 650(relative to a value of 1 for carbon dioxide at 100 year (s)
HFC 125: Decomposed slowly in the lower atmosphere (proposphere) .
atmospheric lifetime is 32.6 year(s)
Has a Global Warming Potential (GWP) of 2800(relative to a value of 1 for carbon dioxide at 100 year (s)
HFC32 , HFC 125: Does not influence photochemical smog(i.e. is not a Voc under the terms of the UNECE agreement). Does not deplete ozone
Effect on Effluent Treatment

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

DISPOSAL CONSIDERATIONS

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

TRANSPORTATION INFORMATION

UN No.:	3163
AIR	
ICAO/LATA	
-primary:	2.2
SEA	
IMDG	
- primary:	2.2
Marine Pollutant:	Not classified as a Marine Pollutant
Proper Shipping Name:	REPRIGERANT GAS, N.O.S.(DIFLUOROMENTHANE, PENTAFLUOROETHANE)
ROAD/RAIL	
ADR/RID Class:	2
ADR Sin:	3163

REGULATORY INFORMATION

Nor Classified as Hazardous to Users.

OTHER INFORMATION

The following sections contain revisions or new statements: 1.12.14.16
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