Material Safety Data Sheet
(REFRIGERANT R410A)

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1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number: HFC 410A CAS Number: 75-10-5/354-33-6
EC No.: 200-839-4/206-557-8
Product Name HFC 410A
Chemical Formula CH2F2/C2HF5
Chemical Name Difluoromethane/Pentafluoroethane
Product Use refrigerant

Company Identification

MANUFACTURER/DISTRIBUTOR: Cosutin Industrial CO., Limited
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Transport Emergency: +86 136 31481545
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name of the substance: Difluoromethane/Pentafluoroethane
General name: HALOGENATED HYDROCARBON
CAS Number: 75-10-5/354-33-6
Einecs Number: 200-839-4/206-557-8

Ingredient Name	CAS No.	Typical Wt. %
Difluoromethane	75-10-5	50%
Pentafluoroethane	354-33-6	50%

Substance name	Hazard class	Hazard category	H Phrases
Pentafluoroethane (R125)	Gases under pressure	Liquefied gas	H280
Difluoromethane (R32)	Flammable gases	Category 1	H220
	Gases under pressure	Liquefied gas	H280

3. 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.

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. 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.

5. 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.

6. 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.

7. HANDLING AND STORAGE

HANDLING
Avoid inhalation of high concentrations of vapors. 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 vapor 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 respiratoryprotective 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 vapor phase.

Process Hazards
Liquid refrigerant transfers between refrigerant containers and to and from systems can result in static generation. Ensure 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

8. 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. If 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

9. 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

10. 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.

11. 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

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
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.

13. 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.

14. 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/RAILADR/RID Class: 2
ADR Sin: 3163

15. REGULATORY INFORMATION

Nor Classified as Hazardous to Users.

16. OTHER INFORMATION

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