PT. SULFINDO ADIUSAHA

MATERIAL SAFETY DATA SHEET

ETHYLENE DICHLORIDE

Disiapkan oleh	Disahkan oleh		
SHE Manager	Collective GM	NO. DOKUMEN	: TBL-QSE-SHE-005
		NO. REVISI	: 1
		TGL. BERLAKU	: 25 Juni 2020
		HALAMAN	: 1/7

1. Identification of the substance/preparation and the company / undertaking :
   Identification of the product
   Product Name : Ethylene Dichloride
   Other Name : 1,2-Dichloroethane , EDC
   Manufacturer / Supplier identification
   Company : PT. Sulfindo Adiusaha, Serang – Banten, Indonesia
   Contact for information : Telp : ***+6221 525 8300***
   Fax : ***+6221 525 8399***
   Emergency phone no : +62254 575 0035 ext 2203

2. ***Information on ingredients***
   CAS-No : 107-06-
   Molecular formula : CH2Cl - CH2Cl
   Form : Liquid
   Color : Colorless
   Molar mass : 98.96

3. ***Hazard identification :***
   Pictogram

   Signal Word
   DANGER
   Hazard identification :
   Prolonged contact with skin may cause a burn.
   Swallowed : toxic
   Fire hazards : Flammable liquid and produces toxic and flammable vapor when mixed with
   Contact of liquid with eyes may produce corneal injury
   Toxic and irritating gases (hydrogen chloride, phosgene) are generated
   Inhalation of vapors causes nausea, drunkenness, depression
   Precautionary Statement :
   Wear appropriate personal protection to prevent if contact with EDC with goggle, gloves
   (neoprene, nitrile), safety boot, SCBA and protective clothing.
   Keep sparks, flames, and other sources of ignition away.
   Do not handle until all safety precaution have been reed and understoo
   Obtain special instruction before used
   Avoid release to the environment

4. First aid measured

After inhalation

Removed from contaminated area and give respiration with Oxygen inhalation apparatus physician.

After skin contact

Ordinary contact with Ethylene Dichloride doesn't cause serious difficulties. Immediately remove contaminated clothing. All affected areas should be washed thoroughly with abundant water and soap.

After eye contact

Irrigation with plenty of water for at least 15 minutes will prevent serious injury.

After swallowing

DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of

5. Fire fighting measure :

Nature of material :

Ignites at normal temperature (seriously flammable).

Suitable extinguishing media :

Water spray or fog, foam, Carbon Dioxide and dry chemical. For large Ethylene Dichloride fire, the most

Special risk :

The production of combustion contained in the smoke contain noxious gases such as Hydrogen

Special protective equipment for fire fighting :

For large fire, wear fire fighting clothing and self contained breathing apparatus should be worn

6. Accidental release measures :

Spilling and small leakage :

Closed with dry soil / dry sand or other material which do not burn.

Spilling and big leakage :

Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Attempt to stop leak if without undue personnel hazard. Use water spray to knock-down vapors.Combustion products include corrosive or toxic vapors. Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash, cement powder, or commercial sorbents. Apply "universal" gelling agent to immobilize spill. Apply approriate foam to diminish vapor and fire hazard. Water spill: Use natural deep water pockets, excavated lagoons, or sand bag barriers to trap material at bottom. If dissolved, in region of 10 ppm or greater concentration, apply activated carbon at ten times the spilled amount. Remove trapped material with suction hoses. Use mechanical dredges or lifts to remove immobilized masses of pollutants and precipitates.

Personal Protective Equipment used:

Wear appropriate personal protection to prevent if contact with EDC with goggle, gloves (neoprene, nitrile), safety boot, SCBA and protective clothing..

7. Handling and storage :

Handling :
All precaution must be taken to guard against health and fire hazards whenever ethylene dichloride is handled. The area should be posted with NO SMOKING.The storage and handling in glass containers is not recommended except in small containers for laboratory used.

Prevention to exposure :
Use safety goggle, gloves (neoprene, nitrile), safety boot, SCBA and protective clothing.

Storage :
Ethylene dichloride is non corrosive at normal atmospheric temperatures when dry. In contact with water at elevated temperature ethylene dichloride corrodes iron and certain other metal. Storage should be equipped with grounding apparatus.

Requirements for storage rooms and containers :
Keep away from heat and open flash.

8. Exposure control / personal protection :

Technical control :
Use enough common ventilation.
Personal protective equipment :
Use safety goggle, gloves (neoprene, nitrile), safety boot, SCBA and protective clothing.

9. Physical and chemical properties :

Form		liquid
Colour		clear
Odor		Chloroform-like odor, sweet taste.
Flammable Limits (% vol in air)		6.2 to 15.9
Explosion limit	lower	6.2%
	upper	15.9%
Density		1.252grams/mililiter at 68° F
Vapor Density		3.4
Vapor Pressure		60 mm Hg at 68° F ; 100 mm Hg at 84.9° F
Boiling point (ASTM D1078)		182.3° F at 760 mm

Melting point	-31.5° F
Critical pressure	49.2 atm
Water solubility, percent by weight	5-10 mg/mL at 66° F
Flash Point	56°F
Auto Igtn Temp	775° F

10. Stability and reactivity

Reactivity :
Ethylene dichloride undergoes no known hazardous or violent reaction, however, the material is a flammable liquid, Highly flammable and Slightly water soluble.
Stability :
Ethylene dichloride is thermally stable under normal condition.
Condition to be avoided :
Keep away from fire, and source heat.
Substances to be avoided :
Liquid ammonia, dimethyl amino propyl amine, amines, nitrides, azo/diazo compounds, alkali metals, epoxides and aluminum.

11. Toxicological information :

Acute toxicity	: Inhalation of an excessive amount of vapor over short period of time may cause acute poisoning.
Chronic toxicity	: Poisoning results from absorption of less material over a longer period of time
After skin contact	: Quite severe irritation and moderate edema and necrosis may be observed
After eye contact	: Symptoms of irritation
After swallowing	: Irritation of gastro intestinal tract, with nausea, vomiting and diarrhea with bloody stools.
After inhalation	: Cause nausea, drunkenness, depression.

12. Ecological information :

12.1. Toxicity
- LD 50, Wister Rats, single exposure, 680 mg/kg.day (Mc. Collister et al. 1956)
- LD 50, Dogs, 5750 mg/kg (Tierney et al., 1979).
- LC50s, fed rats, 10000 - 15000 ppm (Jeager et al. 1975)
- Crustaceans, Daphnia magna, EC50, 48 h, 155 mg/l, fresh water
- Crustaceans, Artemia salina, EC50, 24 h, 320 mg/l, Marine water
- Fishes, Pimephales promelas, NOEC, Developmental Toxicity, 32 Days, 29 mg/l
- Crustaceans, Daphnia magna, NOEC, Reproduction Test, 28 Days, 11 mg/l,
- Algae, Selenastrum capricornutum, EC50, 72 h, 166 mg/l, fresh water

12.2. Persistence and degradability

12.2.1. Abiotic degradation
- Air, direct photolysis, t 1/2 from 42 - 73 d
  Degradation products: Carbon dioxide (CO_2) / Hydrogen chloride
- Water, Hydrolysis
  Result: non-significant hydrolysis
- Soil/sediments
  Result: non-significant hydrolysis

12.2.2. Biodegradation
- Tested according to: biodegradation by methane oxidation, 250 µg/l, 90 % after 30 d
  Result: Biodegradable
- aerobic
  non-significant biodegradation

12.3. Bioaccumulative potential
- Bioconcentration: Fishes, Lepomis macrochirus, Bioconcentration factor (BCF) = 2, 14 d,
- Result: Does not bioaccumulate.

12.4. Mobility
- Water, Evaporates., t1/2: from 0.5 - 4 h
  Conditions: Concentration: 1 ppm
- Soil/sediments, log KOC:1.28 - 1.62
- Air, Henry's law constant (H), = 95.7
  $hPa.m^3/mol$, 25 °C Conditions: calculated value
  Very volatile.

12.5. Other adverse effects
- no data available

13. Disposal Consideration

Recover or recycle if possible. It is the responsibility of the waste generator todetermine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulation.

14. Transport information

14.1 International transport regulations

- IATA-DGR
  UN number UN 1184
  Class 3
  Packing group II
  ICAO-Labels 3 - Flammable liquid
  6.1 - Toxic
  Proper shipping name ETHYLENE DICHLORIDE
- IMDG
  UN number UN 1184
  Class 3
  Packing group II
  IMDG-Labels 3 - Flammable liquid
  6.1 - Toxic
  HI/UN No. 1184
  EmS F-E
  S-D
  Proper shipping name ETHYLENE DICHLORIDE
- ADR
  UN number UN 1184
  Class 3
  Packing group II
  ADR/RID-Labels 3 - Flammable liquid
  6.1 - Toxic
  HI/UN No. 336 / 1184
  Pro per shipping name ETHYLENE DICHLORIDE
- RID
  UN number UN 1184
  Class 3
  Packing group II
  ADR/RID-Labels 3 - Flammable liquid
  6.1 - Toxic
  HI/UN No. 336 / 1184
  Pro per shipping name ETHYLENE DICHLORIDE

- AND
  UN number UN 1184
  Class 3
  Packing group II
  ADR/RID-Labels 3 - Flammable liquid
  6.1 - Toxic
  Proper shipping name ETHYLENE DICHLORIDE

15 Regulatory Information :
Refer to country regulation where Ethylene Dichloride handling
Refer to The Government of Republic Indonesia regulation (number 74 year 2001) for Handling of Hazardous Materials.

16 Other Information
Revison 1, June 2020
The information given corresponds to the current state of our knowledge and experience of the product.
This applies to product which conforms to the specification, unless otherwise stated.