

# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION

### A. Product name

- EH2350PTB

### B. Recommended use and restriction on use

- General use : HEAVYDUTY EPOXY HARDENER
- Restriction on use : Do not use except for purpose

### C. Supplier information

- Company name : KCC Corporation
- Address : 30, Bangeojinsunhwando-ro, Dong-gu, Ulsan
- Emergency telephone number : 82-52-280-1717

## 2. HAZARD IDENTIFICATION

### A. GHS Classification

- Acute toxicity (oral) : Category4
- Acute aquatic toxicity : Category1
- Chronic aquatic toxicity : Category1
- Carcinogenicity : Category1B
- Reproductive toxicity : Category1A
- Serious eye damage/irritation : Category1
- Flammable liquids : Category3
- Specific target organ toxicity(Single exposure) : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- Skin corrosion/irritation : Category1

### B. GHS label elements

#### o Hazard symbols



#### o Signal words

- Danger

#### o Hazard statements

- H226 Flammable liquid and vapour
- H302 Harmful if swallowed
- H314 Causes severe skin burns and eye damage
- H318 Causes serious eye damage
- H350 May cause cancer
- H360 May damage fertility or the unborn child
- H371 May cause damage to organs (Refer Section SDS 11)
- H373 May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with long lasting effects

#### o Precautionary statements

##### 1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat/sparks/open flames/hot surfaces. ? No smoking.
- P233 Keep container tightly closed.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.

- P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
- P243 Take precautionary measures against static discharge.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.

## 2) Response

- P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P314 Get medical advice/attention if you feel unwell.
- P321 Specific treatment
- P330 Rinse mouth.
- P363 Wash contaminated clothing before reuse.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- P391 Collect spillage.

## 3) Storage

- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.

## 4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

## C. Other hazards which do not result in classification : (NFPA Classification)

### o NFPA grade (0 ~ 4 level)

- Health : 3, Flammability : 3, Reactivity : 0

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Polyamide resin	-	-	20 ~ 30
Cashew, nutshell liq.	Oil of cashew nutshell	8007-24-7	10 ~ 20
Toluene	Methylbenzene	108-88-3	1 ~ 10
n-Butyl alcohol	1-Butanol	71-36-3	1 ~ 10
2,4,6-Tris[(dimethylamino)methyl]phenol	2,4,6-Tris[(N,N-dimethylamino)methyl] phenol	90-72-2	1 ~ 10
Unsatd. (C=18) fatty acids dimers polymers with triethylenetetramine reaction products with bisphenol A diglycidyl ether polymer	-	68424-41-9	1 ~ 10
Isobutanol	Isobutyl alcohol	78-83-1	1 ~ 10
Solvent naphtha (petroleum), light arom.	Naphtha	64742-95-6	1 ~ 10
1,3-Dioxolan-2-one	Ethylene carbonate	96-49-1	1 ~ 10
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-	1,2-Ethanediamine, N1,N2-bis(2-aminoethyl)-	112-24-3	1 ~ 10
Xylene	Dimethylbenzene	1330-20-7	1 ~ 10
1,2,4-Trimethylbenzene	Pseudocumene	95-63-6	1 ~ 10
Ethylbenzene	Benzene, ethyl-	100-41-4	0 ~ 1
Secret	Secret	-	10 ~ 20

## 4. FIRST AID MEASURES

#### **A. Eye contact**

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.
- Remove contact lenses if worn.

#### **B. Skin contact**

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.
- Prevent the spread of the skin.
- Remove contaminated clothing, shoes and isolate.
- Wash thoroughly after handling.
- Wear gloves when washing the patient, and please avoid contact with contaminated clothing.

#### **C. Inhalation contact**

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

#### **D. Ingestion contact**

- About whether I should induce vomiting Take the advice of a doctor.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

#### **E. Delayed and immediate effects and also chronic effects from short and long term exposure**

- Not available

#### **F. Notes to physician**

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

### **5. FIREFIGHTING MEASURES**

#### **A. Suitable (Unsuitable) extinguishing media**

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

#### **B. Specific hazards arising from the chemical**

- Not available

#### **C. Special protective actions for firefighters**

- Keep unauthorized personnel out.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- The extremely low flash point made by fire-fighters may be less effective at digesting weeks.

### **6. ACCIDENTAL RELEASE MEASURES**

#### **A. Personal precautions, protective equipment and emergency procedures**

- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away, isolate hazard area and deny entry.

#### **B. Environmental precautions**

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

#### **C. Methods and materials for containment and cleaning up**

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Avoid entering to sewers or water system.
- Do not use plastic containers.
- Prevent the influx to waterways, sewers, basements or confined spaces.
- Spilled material should be treated as a potential risk of waste collected.

### **7. HANDLING AND STORAGE**

#### **A. Precautions for safe handling**

- Wash thoroughly after handling.
- Avoid contact with incompatible materials.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Contaminated work clothing should not be allowed out of the workplace.

#### **B. Conditions for safe storage, including any incompatibilities**

- Save in cool, dry and well ventilated place.
- Check regularly for leaks.
- Do not apply direct heat.
- Save applicable laws and regulations.
- Keep in the original container.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Do not eat, drink or smoke when using this product.
- Store away from water and sewer.

### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **A. Exposure limits**

- o **ACGIH TLV**
  - [Toluene] : TWA 20 ppm (75 mg/m<sup>3</sup>)
  - [n-Butyl alcohol] : TWA, 20 ppm (61 mg/m<sup>3</sup>)
  - [Isobutanol] : TWA, 50 ppm (152 mg/m<sup>3</sup>)
  - [Xylene] : TWA 100 ppm (434 mg/m<sup>3</sup>), STEL, 150 ppm (651 mg/m<sup>3</sup>)
  - [1,2,4-Trimethylbenzene] : TWA 25 ppm (123 mg/m<sup>3</sup>)
  - [Ethylbenzene] : TWA, 20 ppm (87 mg/m<sup>3</sup>)

#### **B. Engineering controls**

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

### C. Personal protective equipment

#### o Respiratory protection

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

#### o Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

#### o Hand protection

- Wear appropriate chemical resistant glove.

#### o Skin protection

- Wear appropriate chemical resistant protective clothing.

#### o Others

- Not available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid(Viscous liquid)
- Color	Not available
B. Odor	Smell of liquor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	26 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	1 % / 14 %
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	> 1(Air=1)
N. Specific gravity(Relative density)	0.93 ~ 0.95
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	343 °C
Q. Decomposition temperature	Not available
R. Viscosity	59.1 ~ 63.1 KU
S. Molecular weight	Not available

## 10. STABILITY AND REACTIVITY

### A. Chemical Stability and Reactivity

- This material is stable under recommended storage and handling conditions.

### B. Possibility of hazardous reactions

- Cylinders exposed to fire may vent and release flammable gas.

### C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

#### D. Incompatible materials

- Not available

#### E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

## 11. TOXICOLOGICAL INFORMATION

### A. Information on the likely routes of exposure

- **(Respiratory tracts)**
  - Not available
- **(Oral)**
  - Harmful if swallowed
- **(Eye·Skin)**
  - Causes serious eye damage
  - Causes severe skin burns and eye damage

### B. Delayed and immediate effects and also chronic effects from short and long term exposure

- **Acute toxicity**
  - \* **Oral**
    - [Cashew, nutshell liq.] : LD50 > 2000 mg/kg Rat
    - [Toluene] : rat LD50=2600 mg/kg
    - [n-Butyl alcohol] : LD50 = 790 mg/kg Rat
    - [2,4,6-Tris[(dimethylamino)methyl]phenol] : LD50 = 1200 mg/kg Rat
    - [Isobutanol] : LD50 = 2460 mg/kg Rat
    - [Solvent naphtha (petroleum), light arom.] : LD50 = 8400 mg/kg Rat
    - [1,3-Dioxolan-2-one] : LD50 = 10000 mg/kg Rat
    - [1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-] : LD50 = 2500 mg/kg Rat
    - [Xylene] : LD50=3550 mg/kg rat
    - [1,2,4-Trimethylbenzene] : LD50 = 3400 mg/kg Rat
    - [Ethylbenzene] : LD50 = 3500 mg/kg Rat
  - \* **Dermal**
    - [Toluene] : rabbit LD50=12,000 mg/kg
    - [n-Butyl alcohol] : LD50 = 3402 mg/kg rabbit
    - [2,4,6-Tris[(dimethylamino)methyl]phenol] : LD50 = 1280 mg/kg Rat
    - [Isobutanol] : LD50 = 2460 mg/kg Rabbit
    - [Solvent naphtha (petroleum), light arom.] : LD50 > 2000 mg/kg Rabbit
    - [1,3-Dioxolan-2-one] : LD50 > 3000 mg/kg Rabbit
    - [1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-] : LD50 = 805 mg/kg Rabbit
    - [Xylene] : LD50 4350 mg/kg Rabbit
    - [1,2,4-Trimethylbenzene] : LD50 > 3160 mg/kg Rabbit
    - [Ethylbenzene] : LD50 = 15400 mg/kg Rabbit
  - \* **Inhalation**
    - [Toluene] : rat LC50=28.1 mg/L/4hr
    - [n-Butyl alcohol] : Steam LC50 = 24.25 mg/L/4 hr Rat
    - [Solvent naphtha (petroleum), light arom.] : LC50 > 5.2 mg/L 4 hr Rat, LC50=3400 ppm 4hr
    - [Xylene] : Steam LC50 6700 ppm 4 hr Rat (Equivalentents : 29.09 mg/L)
    - [1,2,4-Trimethylbenzene] : Steam LC50 = 18 mg/l 4 hr Rat
    - [Ethylbenzene] : Steam LC50 = 9.6 mg/L/4 hr Rat
- **Skin corrosion/irritation**
  - Causes severe skin burns and eye damage
- **Serious eye damage/irritation**
  - Causes serious eye damage

- **Respiratory sensitization**
  - Not available
- **Skin sensitization**
  - Not available
- **Carcinogenicity**
  - \* **IARC**
    - [Ethylbenzene] : Group 2B
    - [Toluene] : Group 3
    - [Xylene] : Group 3
  - \* **OSHA**
    - Not available
  - \* **ACGIH**
    - [Ethylbenzene] : A3
    - [Toluene] : A4
    - [Xylene] : A4
  - \* **NTP**
    - Not available
  - \* **EU CLP**
    - [Solvent naphtha (petroleum), light arom.] : Carc.1B
- **Germ cell mutagenicity**
  - Not available
- **Reproductive toxicity**
  - May damage fertility or the unborn child
- **STOT-single exposure**
  - May cause damage to organs (Refer Section SDS 11)
- **STOT-repeated exposure**
  - May cause damage to organs through prolonged or repeated exposure (Refer Section SDS 11)
- **Aspiration hazard**
  - Not available

## 12. ECOLOGICAL INFORMATION

### A. Ecotoxicity

- **Fish**
  - [Cashew, nutshell liq.] : LC50 = 0.005 mg/ℓ 96 hr
  - [Toluene] : LC50 24 mg/ℓ 96 hr *Oncorhynchus mykiss*
  - [n-Butyl alcohol] : LC50 > 100 mg/ℓ 96 hr
  - [2,4,6-Tris(dimethylamino)methyl]phenol] : LC50 = 447.821 mg/ℓ 96 hr
  - [Isobutanol] : LC50 = 1000 mg/ℓ 96 hr
  - [Solvent naphtha (petroleum), light arom.] : LC50 = 9.22 mg/ℓ 96 hr *Oncorhynchus mykiss*
  - [1,3-Dioxolan-2-one] : LC50 = 238.065 mg/ℓ 96 hr
  - [Xylene] : LC50 3.3 mg/ℓ 96 hr
  - [1,2,4-Trimethylbenzene] : LC50 = 7.72 mg/ℓ 96 hr *Pimephales promelas*
  - [Ethylbenzene] : LC50 = 9.09 mg/ℓ 96 hr
- **Crustaceans**
  - [Cashew, nutshell liq.] : LC50 = 0.04 mg/ℓ 48 hr
  - [Toluene] : EC50 11.5 mg/ℓ 48 hr *Daphnia magna*
  - [n-Butyl alcohol] : EC50 = 1983 mg/ℓ 48 hr
  - [2,4,6-Tris(dimethylamino)methyl]phenol] : LC50 = 28.198 mg/ℓ 48 hr
  - [Isobutanol] : EC50 = 1250 mg/ℓ 24 hr
  - [Solvent naphtha (petroleum), light arom.] : EC50 = 6.14 mg/ℓ 48 hr *Daphnia magna*
  - [1,3-Dioxolan-2-one] : LC50 = 9423.147 mg/ℓ 48 hr
  - [Xylene] : LC50 190 mg/ℓ 96 hr
  - [1,2,4-Trimethylbenzene] : EC50 = 6.14 mg/ℓ 48 hr *Daphnia magna*
  - [Ethylbenzene] : LC50 = 0.4 mg/ℓ 96 hr
- **Algae**
  - [Cashew, nutshell liq.] : EC50 = 0.000342 mg/ℓ 96 hr
  - [n-Butyl alcohol] : EC50 = 28 mg/ℓ 48 hr

- [2,4,6-Tris[(dimethylamino)methyl]phenol] : EC50 = 34.812 mg/ℓ 96 hr
- [Solvent naphtha (petroleum), light arom.] : EC50 = 19 mg/ℓ 72 hr Selenastrum capricornutum
- [1,3-Dioxolan-2-one] : EC50 = 17.388 mg/ℓ 96 hr

## B. Persistence and degradability

### ○ Persistence

- [Cashew, nutshell liq.] : log Kow = 8.37
- [Toluene] : log Kow 2.73
- [2,4,6-Tris[(dimethylamino)methyl]phenol] : log Kow = 0.77
- [Isobutanol] : log Kow = 0.8
- [Solvent naphtha (petroleum), light arom.] : log Kow = 2.1 ~ 6 (Estimates)
- [1,3-Dioxolan-2-one] : log Kow = -0.340
- [1,2,4-Trimethylbenzene] : log Kow = 3.78

### ○ Degradability

- [Solvent naphtha (petroleum), light arom.] : BOD5/COD = 0.43

## C. Bioaccumulative potential

### ○ Bioaccumulative potential

- [2,4,6-Tris[(dimethylamino)methyl]phenol] : BCF = 3.162
- [1,3-Dioxolan-2-one] : BCF = 3.2
- [1,2,4-Trimethylbenzene] : BCF = 124.5

### ○ Biodegradation

- [Toluene] : 86 (%) 20 day
- [Xylene] : 39 (%)
- [1,2,4-Trimethylbenzene] : Biodegradability = 4 ~ 18 (%) 28 day

## D. Mobility in soil

- [Isobutanol] : log Kow = 0.8 (1)
- [1,3-Dioxolan-2-one] : Koc = 9.2
- [Xylene] : log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)
- [Ethylbenzene] : log Kow = 3.15 (11)

## E. Other adverse effects

- Not available

## 13. DISPOSAL CONSIDERATIONS

### A. Disposal methods

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

### B. Special precautions for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

## 14. TRANSPORT INFORMATION

### A. UN No. (IMDG)

- 1263

### B. Proper shipping name

- Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base

### C. Hazard Class

- 3

#### D. IMDG Packing group

- III

#### E. Marine pollutant

- [Solvent naphtha (petroleum), light arom.] : Applicable
- [Ethylbenzene] : Applicable

#### F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE : S-E (Flammable liquids, floating on water)

### 15. REGULATORY INFORMATION

#### A. National and/or international regulatory information

##### o POPs Management Law

- Not applicable

##### o Information of EU Classification

###### \* Classification

- [Toluene] : F; R11 Repr.Cat.3; R63 Xn; R48/20-65 Xi; R38 R67
- [n-Butyl alcohol] : R10 Xn; R 22 Xi; R37/38-41 R67
- [2,4,6-Tris(dimethylamino)methyl]phenol] : Xn; R22 Xi; R36/38
- [Isobutanol] : R10 Xi; R37/38-41 R67
- [Solvent naphtha (petroleum), light arom.] : Carc. Cat. 2; R45/Muta. Cat. 2; R46, Xn; R65
- [1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-] : Xn; R21 C; R34 R43 R52-53
- [Xylene] : R10 Xn; R20/21 Xi; R38
- [1,2,4-Trimethylbenzene] : R10 Xn; R20 Xi; R36/37/38 N; R51-53
- [Ethylbenzene] : F; R11Xn; R20

###### \* Risk Phrases

- [Toluene] : R11, R38, R48/20, R63, R65, R67
- [n-Butyl alcohol] : R10, R22, R37/38, R41, R67
- [2,4,6-Tris(dimethylamino)methyl]phenol] : R22, R36/38
- [Isobutanol] : R10, R37/38, R41, R67
- [Solvent naphtha (petroleum), light arom.] : R45, R65, R46
- [1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-] : R21, R34, R43, R52/53
- [Xylene] : R10, R20/21, R38
- [1,2,4-Trimethylbenzene] : R10, R20, R36/37/38, R51/53
- [Ethylbenzene] : R11, R20

###### \* Safety Phrase

- [Toluene] : S2, S36/37, S46, S62
- [n-Butyl alcohol] : S2, S7/9, S13, S26, S37/39, S46
- [2,4,6-Tris(dimethylamino)methyl]phenol] : S2, S26, S28
- [Isobutanol] : S2, S7/9, S13, S26, S37/39, S46
- [Solvent naphtha (petroleum), light arom.] : S53, S45
- [1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-] : S1/2, S26, S36/37/39, S45, S61
- [Xylene] : S2, S25
- [1,2,4-Trimethylbenzene] : S2, S26, S61
- [Ethylbenzene] : S2, S16, S24/25, S29

##### o U.S. Federal regulations

###### \* OSHA PROCESS SAFETY (29CFR1910.119)

- Not applicable

###### \* CERCLA Section 103 (40CFR302.4)

- [Toluene] : 453.599 kg 1000 lb
- [n-Butyl alcohol] : 2267.995 kg 5000 lb
- [Isobutanol] : 2267.995 kg 5000 lb

- [Xylene] : 45.3599 kg 100 lb
- [Ethylbenzene] : 453.599 kg 1000 lb
- \* **EPCRA Section 302 (40CFR355.30)**
  - Not applicable
- \* **EPCRA Section 304 (40CFR355.40)**
  - Not applicable
- \* **EPCRA Section 313 (40CFR372.65)**
  - [Toluene] : Applicable
  - [n-Butyl alcohol] : Applicable
  - [Xylene] : Applicable
  - [1,2,4-Trimethylbenzene] : Applicable
  - [Ethylbenzene] : Applicable
- o **Rotterdam Convention listed ingredients**
  - Not applicable
- o **Stockholm Convention listed ingredients**
  - Not applicable
- o **Montreal Protocol listed ingredients**
  - Not applicable

## 16. OTHER INFORMATION

### A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

### B. Issue date

- 2013-08-07

### C. Revision number and Last date revised

- 3 times, 2014-03-10

### D. Other

- This MSDS is prepared according to the Globally Harmonized System (GHS).