

SAFETY DATA SHEET

1. IDENTIFICATION

A. Product name

- UNIPOXY PUTTY CURING AGENT

B. Recommended use and restriction on use

- General use : EPOXY FLOOR COATING
- Restriction on use : prohibition of use of station for other purpose

C. Supplier information

- Company name : KCC Corporation
- Address : 764, Gwahak-ro, Bongdong-eup, Wanju_Gun, Jeollabuk-do
- Emergency telephone number : 82-63-260-7000

2. HAZARD IDENTIFICATION

A. GHS Classification

- Acute toxicity (oral) : Category5
- Acute toxicity (dermal) : Category4
- Skin corrosion/irritation : Category1A
- Serious eye damage/irritation : Category2A
- Reproductive toxicity : Category1B
- Specific target organ toxicity(Single exposure) : Category2

B. GHS label elements

o Hazard symbols



o Signal words

- Danger

o Hazard statements

- H303 May harmful if swallowed.
- H312 Harmful in contact with skin
- H314 Causes severe skin burns and eye damage
- H319 Causes serious eye irritation
- H360 May damage fertility or the unborn child
- H371 May cause damage to organs (Refer Section SDS 11)

o Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.

2) Response

- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- 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.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment
- P322 Specific measures
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P363 Wash contaminated clothing before reuse.

3) Storage

- 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 : 2, Flammability : 1, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Calcite	-	13397-26-7	50 ~ 60
Cashew, nutshell liq. polymer with ethylenediamine and formaldehyde	-	68413-28-5	20 ~ 30
Calcium carbonate	Carbonic acid calcium salt (1:1)	471-34-1	1 ~ 9.2
2,4,6-Tris[(dimethylamino)methyl]phenol	2,4,6-Tris[(N,N-dimethylamino)methyl] phenol	90-72-2	1 ~ 10
Xylene	Dimethylbenzene	1330-20-7	0 ~ 1
Ethylbenzene	Benzene, ethyl-	100-41-4	0.1 ~ 0.2
Secret	Secret	자료없음	1 ~ 10

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.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- 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.
- Wash contaminated clothing thoroughly before re-using.
- 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

- Please be advised by doctor whether induction of vomit is demanded or not.
- 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

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Ventilate closed spaces before entering.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Do not direct water at spill or source of leak.
- Avoid skin contact and inhalation.
- 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.
- Spilled material should be treated as a potential risk of waste collected.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not inhale the steam prolonged or repeated.
- 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.
- Do not apply direct heat.
- Do not apply any physical shock to container.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- o **ACGIH TLV**
 - [Xylene] : TWA 100 ppm (434 mg/m³), STEL, 150 ppm (651 mg/m³)
 - [Secret] : TWA, 10 ppm (25 mg/m³)
 - [Ethylbenzene] : TWA, 20 ppm (87 mg/m³)
 - [Secret] : TWA, 3 mg/m³, Inhalable particulate matter
 - [Secret] : TWA, 20 ppm (61 mg/m³)
- o **OSHA PEL**
 - [Ethylbenzene]:100ppm 435mg/m³
 - [Secret]:10ppm 25mg/m³
 - [Xylene]:100ppm 435mg/m³
 - [Secret]:100ppm 300mg/m³
 - [Secret]: 3.5mg/m³

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as 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.

○ **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.

○ **Hand protection**

- Wear appropriate glove.

○ **Skin protection**

- Wear appropriate clothing.

○ **Others**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid(Viscous liquid)
- Color	Not available
B. Odor	Solvent odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	138 °C
G. Flash point	106 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	Not available
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

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

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces

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)**
 - May harmful if swallowed.
- **(Eye/Skin)**
 - Causes serious eye irritation
 - 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**
 - Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg
 - [Calcium carbonate] : LD50 = 6450 mg/kg Rat (IUCLID)
 - [2,4,6-Tris[(dimethylamino)methyl]phenol] : LD50 = 1200 mg/kg Rat
 - [Xylene] : LD50=3523 mg/kg rat (EU Method B1)
 - [Secret] : LD50 = 637 ~ 1850 mg/kg Rat (SIDS, NITE)
 - [Ethylbenzene] : LD50 = 3500 mg/kg Rat (NITE)
 - [Secret] : LD50 = 15400 mg/kg Rat (NITE(2006))
 - [Secret] : LD50 22,000 mg/kg Rat (ECHA)
 - [Secret] : LD50 = 3430 mg/kg rabbit (GLP, ECHA)
 - * Dermal**
 - Product (ATEmix) : 300mg/kg < ATEmix <= 2000mg/kg
 - [2,4,6-Tris[(dimethylamino)methyl]phenol] : LD50 = 1280 mg/kg Rat
 - [Xylene] : LD50 >4350 mg/kg Rabbit (IUCLID) LD50 12126 mg/kg Rabbit (isomer: m-xylene)
 - [Secret] : LD50 = 560 mg/kg rabbit (SIDS, NITE)
 - [Ethylbenzene] : LD50 = 15400 mg/kg Rabbit (NITE)
 - [Secret] : LD50 > 3000 mg/kg rabbit (NITE)
 - [Secret] : LD50 20,800 mg/kg Rabbit (HSDB, IUCLID)
 - [Secret] : LD50 = 3400 mg/kg rabbit (HSDB)
 - * Inhalation**
 - Product (ATEmix) : Not available
 - [Xylene] : LC50 5922 ppm 4 hr Rat (25.713 mg/L EPA OPP 81-3, GLP)
 - [Secret] : LC50 = 58 mg/ℓ 4 hr Rat (SIDS, NITE)
 - [Ethylbenzene] : LC50 = 17.4 mg/L/4 hr Rat (4000 ppm/4hr)(EHC, ASTDR)
 - [Secret] : Steam LC50 = 24.25 mg/L/4 hr Rat (HSDB)
- **Skin corrosion/irritation**
 - Causes severe skin burns and eye damage
- **Serious eye damage/irritation**
 - Causes serious eye irritation
- **Respiratory sensitization**
 - Not available
- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * IARC**
 - [Secret] : Group 2B
 - [Ethylbenzene] : Group 2B

*** OSHA**

- Not available

*** ACGIH**

- [Secret] : A4
- [Ethylbenzene] : A3
- [Xylene] : A4

*** NTP**

- Not available

*** EU CLP**

- Not available

○ **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**

- Not available

○ **Aspiration hazard**

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ **Fish**

- [Calcite] : LC50 554000 mg/l 96 hr (Estimate)
- [Calcium carbonate] : LC50 56000 mg/l 96 hr (ECOTOX)
- [2,4,6-Tris[(dimethylamino)methyl]phenol] : LC50 = 447.821 mg/l 96 hr (estimate)
- [Xylene] : LC50=3.3mg/L 96 hr (NITE)
- [Secret] : LC50 = 220 mg/l 96 hr
- [Ethylbenzene] : LC50 5.1 mg/l 96 hr (ECHA)
- [Secret] : LC50 = 710 mg/l 96 hr Oncorhynchus mykiss (ECOTOX)
- [Secret] : LC50 1376 mg/l 96 hr Pimephales promelas(OECD TG 203, GLP)

○ **Crustaceans**

- [Calcite] : LC50 446000 mg/l 48 hr (Estimate)
- [2,4,6-Tris[(dimethylamino)methyl]phenol] : LC50 = 28.198 mg/l 48 hr (estimate)
- [Secret] : LC50 = 3 mg/l 48 hr (NITE)

- [Ethylbenzene] : LC50 2.4 mg/l ~ 1.8 mg/l 48 hr Mysidopsis bahia(EC50 48hr >5.2mg/L, EPA 1985, GLP)

- [Secret] : EC50 > 5600 mg/l 24 hr (NITE)
- [Secret] : EC50 = 1000 mg/l 48 hr Daphnia magna (ECOTOX)
- [Secret] : EC50 = 1983 mg/l 48 hr Daphnia magna (ECOTOX)

○ **Algae**

- [Calcite] : EC50 220000 mg/l 96 hr (Estimate)
- [Calcium carbonate] : EC50 = 22000 mg/l 96 hr (Estimate)
- [2,4,6-Tris[(dimethylamino)methyl]phenol] : EC50 = 34.812 mg/l 96 hr (Estimate)
- [Ethylbenzene] : EC50 3.6 mg/l 96 hr (EPA 1985, GLP)
- [Secret] : EC50 = 1000 mg/l 72 hr Selenastrum capricornutum (NITE)
- [Secret] : EC50 225 mg/l 96 hr Selenastrum capricornutum(OECD TG 201, GLP)

B. Persistence and degradability

○ **Persistence**

- [Calcite] : log Kow = -2.12 (estimate)
- [2,4,6-Tris[(dimethylamino)methyl]phenol] : log Kow = 0.77 (안전보건정보서비스)
- [Xylene] : log Kow=3.16 (NITE)
- [Secret] : log Kow -2.04 (NITE)

- [Ethylbenzene] : log Kow 3.6 (ECHA)
- [Secret] : log Kow = -1.4 (IUCLID)
- [Secret] : log Kow 1 (OECD TG 117)
- **Degradability**
 - [Secret] : BOD5/COD = 0.008

C. Bioaccumulative potential

- **Bioaccumulative potential**
 - [Calcite] : BCF 3.162 (Estimate)
 - [Calcium carbonate] : BCF = 3.162 (Estimate)
 - [2,4,6-Tris(dimethylamino)methyl]phenol] : BCF = 3.162 (Estimate)
 - [Secret] : BCF = 0.07
 - [Ethylbenzene] : BCF 1
 - [Secret] : BCF < 1 (SIDS)
- **Biodegradation**
 - [Xylene] : 39 (%) (NITE)
 - [Secret] : Biodegradability = 94 (%) (NITE)
 - [Ethylbenzene] : 70-80% 28 day (ISO 14593 CO2, GLP)
 - [Secret] : Biodegradability > 60 (%) 10 day (SIDS)
 - [Secret] : 92% 20 days (ECHA)

D. Mobility in soil

- [Calcium carbonate] : Koc = 4.971
- [Xylene] : log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, 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 dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG)

- 2735

B. Proper shipping name

- AMINES, LIQUID, CORROSIVE, N.O.S, OR POLYAMINES, LIQUID, CORROSIVE, N.O.S.

C. Hazard Class

- 8

D. IMDG Packing group

- III

E. Marine pollutant

- Not 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.
- Air transport(IATA): This product is NOT classified as dangerous for IATA Transport.
- EmS FIRE SCHEDULE : F-A (General fire schedule)
- EmS SPILLAGE SCHEDULE : S-B (Corrosive substances)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- **POPs Management Law**
 - Not applicable
- **Information of EU Classification**
 - * **Classification**
 - [Xylene] : H226,H332,H312,H315
 - [Ethylbenzene] : H225,H332
 - [Secret] : H226,H302,H335,H315,H318,H336
 - [2,4,6-Tris[(dimethylamino)methyl]phenol] : H302,H319,H315
 - [Secret] : H226,H312,H302,H314,H334,H317
- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - [Xylene] : 45.3599 kg 100 lb
 - [Secret] : 2267.995 kg 5000 lb
 - [Ethylbenzene] : 453.599 kg 1000 lb
 - * **EPCRA Section 302 (40CFR355.30)**
 - [Secret] : 4535.99 kg 10000 lb
 - * **EPCRA Section 304 (40CFR355.40)**
 - [Secret] : 2267.995 kg 5000 lb
 - * **EPCRA Section 313 (40CFR372.65)**
 - [Xylene] : Applicable
 - [Ethylbenzene] : Applicable
 - [Secret] : Applicable
- **Rotterdam Convention listed ingredients**
 - Not applicable
- **Stockholm Convention listed ingredients**
 - Not applicable
- **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

- 2013-08-09

C. Revision number and Last date revised

- 6 times, 2019-04-15

D. Other

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