

Material Safety Data Sheet

Section 1 - Product and company identification

MANUFACTURER'S NAME

KCC Corporation
846, Yongam-Ri, Bongdong_Up, Wanju-Gun, Chunrabuk-Do, Korea

EMERGENCY TELEPHONE NO.

063-260-7000

INFORMATION TELEPHONE NO.

063-260-7047

PRODUCT CLASS

PAINT

DATE OF PREPARATION

2010-09-06

TRADE NAME & PRODUCT CODE

EPOXY F.C.BASE ET5660-A-D40434

Section 2 - Composition of ingredients

| INGREDIENT | CAS NO | PERCENT BY WEIGH | TWA(ppm) |
|--|-------------|------------------|----------|
| 1) ISOPROPYL ALCOHOL | 000067-63-0 | 1 ~ 10 | 400 |
| 2) n-BUTYL ALCOHOL | 000071-36-3 | 0.1 ~ 0.9 | NA |
| 3) METHYL ISOBUTYL KETONE | 000108-10-1 | 1 ~ 9 | No data |
| 4) TOLUENE | 000108-88-3 | 0.1 ~ 0.9 | 100 |
| 5) CALCIUM CARBONATE | 000471-34-1 | 0.1 ~ 0.9 | No data |
| 6) YELLOW IRON OXIDE | 001310-14-1 | 1 ~ 9 | No data |
| 7) LIMESTONE | 001317-65-3 | 24 ~ 33 | NA |
| 8) COPPER POLYCHLOROPHTHALOCYANINE GREEN | 001328-53-6 | 0.1 ~ 0.9 | NA |
| 9) XYLENE | 001330-20-7 | 11 ~ 20 | 100 |
| 10) C.I. PIGMENT YELLOW 83 | 005567-15-7 | 0.1 ~ 0.9 | No data |
| 11) SILICON DIOXIDE | 007631-86-9 | 0.1 ~ 0.9 | No data |
| 12) TITANIUMDIOXIDE | 013463-67-7 | 1 ~ 9 | No data |
| 13) EPOXY RESIN | 025036-25-3 | 24 ~ 33 | No data |
| 14) QUANTERNARYAMMONIUMCOMPOUND,BENZL(HYD ROGENATEDTALLOWALKYL)DIMETHYL,CHLORIDES ,ANDCOMPOUNDSWITHBENTONITE | 071011-24-0 | 0.1 ~ 0.9 | No data |
| 15) DODECYL PHENOL | 027193-86-8 | 1 ~ 10 | NA |
| 16) S1(영업비밀) | | 0.1 ~ 0.9 | No data |

Section 3 - Hazards Identification

ROUTES OF EXPOSURE

Exposure may be by inhalation, skin, eye contact. To minimize exposure, ventilation and personal protective equipment is recommended. Avoid breathing vapor or mist.

Avoid contact with eyes, skin, and clothing.

SHORT TERM & LONG TERM EFFECTS

- Short term effects -

Cause respiratory tract, skin and eye irritation.

Additional effects may include lack of sense of smell, nausea, headache, drowsiness, drunkenness, tingling sensation, liver and kidney damage and nerve damage.

- Long term effects -

In addition to effects from short term exposure, ringing in the ears, stomach pain, bloody vomit, difficulty speaking, chest pain, irregular heartbeat, fainting, loss of memory, blood disorder, brain damage, coma and heart failure may occur.

Extremely high concentration vapors may cause person to unconsciousness or death.

Drinking alcohol may worsen the effects.

Prolonged overexposure to solvent may cause liver, kidney, brain and nerve system damage and reproductive harm.

Section 4 – First Aid Measures

INHALATION : Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Keep person warm and at rest. Get medical attention immediately.

EYES : Wash eyes immediately with large amounts of water occasionally lifting upper and lower lids, until no evidence of chemical remains(at least 15 ~ 20 minutes). Get medical attention immediately.

SKIN : Remove contaminated clothing and shoes immediately. Launder before re-use. Wash affected area thoroughly with soap and water until no evidence of chemical remains(at least 15 ~ 20 minutes). Get medical attention immediately.

SWALLOW : Extreme care must be used to prevent aspiration. Do not induce vomiting. Get medical attention immediately.

Section 5 – Fire Fighting Measures

EXTINGUISHING MEDIA : Regular foam, Carbon Dioxide, Dry Chemical

SPECIAL FIRE FIGHTING PROCEDURES

Move container from fire area if you can do it without risk. Avoid breathing toxic vapors. Keep upwind. Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable.

Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode(due to the build-up of pressure) when exposed to extreme heat.

Section 6 – Spill or leak procedures

STEPS TO BE TAKEN IN CASE MATERIALS IS RELEASED OR SPILLED

Keep unnecessary people away. Isolate hazard area and restrict entry.

Eliminate all sources of ignition(no smoking, flames or flares in hazard area).

Use spark resistant tools. Ventilate and avoid breathing vapors.

For small spills, take up with sand or other absorbent material and place into containers for later disposal. For larger spills, dike far ahead of spill for later disposal.

Section 7 – Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid contact with eyes, skin, and clothing. Keep out of the reach of children. Protect against physical damage. Use with adequate ventilation.

Worker must wear air-purifying respirator, safety goggles, protective clothing and gloves to prevent contact with this material. Keep container tightly closed.

Flammable liquid and vapor. May cause flash fire.

Keep away from all ignition sources such as heat, open flame, spark.

Store away from incompatible substances(oxidizing materials, acid or base). Keep container cool.

Avoid prolonged breathing of vapors and mists. Use spark resistant tools.

Approved air supplied type respirator should be used in confined spaces, especially such as inside of tank. Wash thoroughly after handling.

When electrostatic coating is required, please wear electric resistant shoes or protective equipment.

Section 8 – Exposure controls / Personal Protection

RESPIRATORY PROTECTION

Use only with adequate ventilation.

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by authorized institute.

When sanding or abrading the dried film, wear a dust/mist respirator.

Approved air supplied type respirator should be used in confined spaces.

VENTILATION

Provide adequate ventilation to keep vapor concentrations below an acceptable TLV.

Use explosion-proof ventilation equipment.

PROTECTIVE GLOVES : Insoluble type (Neoprene) is recommended.
EYE PROTECTION : Splash-proof or dust-resistant safety goggles is recommended.
OTHER PROTECTIVE EQUIPMENTS : Clean, long-legged, long-sleeved work clothes.

Section 9 - Physical and Chemical Properties

APPEARANCE : FLOWING LIQUID
ODOR : SMELL OF LIQUOR
SPECIFIC GRAVITY (H₂O=1) : 1.27 ~ 1.31
BOILING POINT(°F) : NO DATA
FLASH POINT : 4 °C (Closed Cup)
EVAPORATION RATE(VS.n-BuAc) : NO DATA
PH VALUE : NO DATA
SOLUBILITY IN WATER : NO DATA
VAPOR DENSITY(VS.AIR) : NO DATA
LOW EXPLOSIVE LIMIT(LEL) : 1 %
UPPER EXPLOSIVE LIMIT(UEL) : 14 %
AUTOIGNITION TEMPERATURE : 343 °C

Section 10 - Stability and Reactivity

STABILITY : STABLE X UNSTABLE ___ under normal conditions.
CONDITION TO AVOID : Keep away from heat, sparks, open flame.
INCOMPATIBILITY(materials to avoid) : Strong oxidants. May dissolve some plastics and rubber.
HAZARDOUS DECOMPOSITION PRODUCTS : Carbon Dioxide. Carbon Monoxide.
HAZARDOUS POLYMERIZATION : Will not occur under normal conditions.

Section 11 - Toxicological Information

EFFECTS OF EXPOSURE : See section 3

ACUTE TOXICITY DATA :

| | LD50(Oral-rat) | LC50(Inh-rat) |
|--|-----------------------------|---------------|
| 1) ISOPROPYL ALCOHOL | 16000 ppm/8hr | 5000 mg/kg |
| 2) n-BUTYL ALCOHOL | 8000 ppm/4hr | 790 mg/kg |
| 3) METHYL ISOBUTYL KETONE | No Data | No Data |
| 4) TOLUENE | 49 g/m ³ /4hr | 636 mg/kg |
| 5) CALCIUM CARBONATE | No Data | 6450 mg/kg |
| 6) YELLOW IRON OXIDE | No Data | No Data |
| 7) LIMESTONE | NA | 6450mg/kg |
| 8) COPPER POLYCHLOROPHTHALOCYANINE GREEN | NA | NA |
| 9) XYLENE | 5000 ppm/4hr | 4300 mg/kg |
| 10) C.I. PIGMENT YELLOW 83 | No Data | >5000 mg/kg |
| 11) SILICON DIOXIDE | No Data | No Data |
| 12) TITANIUM DIOXIDE | 6820 mg/m ³ /4hr | >24000 mg/kg |
| 13) EPOXY RESIN | No Data | >2000mg/kg |
| 14) QUANTERNARYAMMONIUMCOMPOUND, BENZL (HYD ROGENATEDTALLOWALKYL)DIMETHYL, CHLORIDES , ANDCOMPOUNDSWITHBENTONITE | No Data | No Data |
| 15) DODECYL PHENOL | NA | NA |
| 16) S1 | No Data | No Data |

Section 12 - Environmental Information

Do not allow to enter soil, waterways and waste water channel.

Section 13 - Disposal Considerations

Discharge, treatment, or disposal may be subject to national, state, or local laws.

Mix with compatible chemical which is less flammable and incinerate.
Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind or weld near this container.

Section 14 – Transport Information
US Department of Transportation(DOT)
Shipping name : PAINT AND PAINT RELATED MATERIAL
Hazard class : 3
ID number : UN 1263
Packing group : II
Labels : LIQUID

Section 15 – Regulatory Information
The law for occupational safety and health in Korea : section 39, 41
The law for hazardous chemical substances in Korea

Section 16 – Other Information
The data given here is based on our current knowledge and experience. The purpose of this safety data sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products properties.