

Material Safety Data Sheet

1. Chemical Product and Company Identification

| | |
|---------------|---|
| 가. Trade Name | JP-100Color(Resin) |
| General Use | Epoxy Primer |
| Manufacturer | Jeil Chemical Co., Ltd. 38-16. Hoehak 3-gil, Onsan-Eup, Ulju-Gun, Ulsan, South Korea 052-227-5003 |

2. Hazards Identification

| | |
|--|--|
| a. Hazards Classification and Statements | Acute. Tox. : Category 4 Skin Irrit. : Category 2 Eye Irrit. : Category 2 Skin Sens. : Category 1 Carcinogenicity : Category1A STOT Rep. : Category 1 Aquatic Chronic : Category 2 Carcinogenicity : Category1B |
|--|--|

b. Hazards Description:

Pictogram



Signal word

DANGER

Hazards Classification and Statements

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H305 May be harmful if swallowed and enters airways
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H360 May damage fertility or the unborn child
H370 Causes damage to organs
H372 Causes damage to organs through prolonged or repeated exposure

Prevention precautionary statements

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/light/.../equipment
P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P260 Do not breathe dust/fume/gas/mist/vapours/spray
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P264 Wash ... thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well-ventilated area
P272 Contaminated work clothing should not be allowed out of the workplace

Response precautionary statements

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P321 Specific treatment (see ... on this label).
 P332+P313 If skin irritation occurs: Get medical advice/attention.
 P362 Take off contaminated clothing and wash before reuse.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for seven minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P363 Wash contaminated clothing before reuse.
 P391 Collect spillage.
 P405 Store locked up
 P501 Dispose of contents/container in accordance with local/regional/national/international regulation (to be specified).

Storage precautionary statements
 Disposal precautionary statements:

C. Other Hazard-Risk which are not included in the classification criteria

| | |
|-----------------------------------|---------|
| Xylene | |
| Health hazard | No Data |
| Fire | No Data |
| Reactivity Hazard | No Data |
| Methyl acetate | |
| Health hazard | No Data |
| Fire | No Data |
| Reactivity Hazard | No Data |
| BISPHENOL A-EPICHLOROXYDRIN RESIN | |
| Health hazard | 2 |
| Fire | 1 |
| Reactivity Hazard | 0 |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS NO. | Amount(%) |
|-----------------------------------|---|-----------|
| Xylene | Dimethylbenzene 1330-20-7 | 15 ~ 20 |
| Methyl acetate | METHYL ETHANOATE 79-20-9 | 40 ~ 45 |
| BISPHENOL A-EPICHLOROXYDRIN RESIN | BISPHENOL A-EPICHLOROXYDRIN RESIN 25068-38-6 | 35 ~ 40 |

4. First aid measures

- a. Eye contact: Flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Consult a physician if signs of irritation appear.
- b. Skin contact: Immediately remove contaminated clothing or shoes, wash skin with plenty of water for at least 15 minutes. Use soap if readily available, or follow by thoroughly washing soap and water. Do not reuse clothing until thoroughly decontaminated.
- c. Inhalation: Move person to fresh air area and provide oxygen if breathing is difficult. Consult a physician if effects
- d. Ingestion: Do not induce vomiting because of risk of aspiration. Rinse mouth with water. Consult

5. Fire fighting measures

| | |
|-----------------------------------|--|
| Hazardous products of Combustion | In case of fire, toxic fumes might be formed |
| Extinguishing media | Water spray, foam, dry chemical, or carbon dioxide |
| Unusual fire or explosion Hazards | May produce hazardous fumes of hazardous decomposition products When fire fighting, wear full protective equipment including self-contained breathing apparatus |

6. Accidental release measures

| | |
|---------------------------|--|
| Personal precautions | Put on adequate protective equipment. See section 8, Exposure control/ Personal Protection |
| Environmental precautions | Keep away from drains, surface-water, ground water and soil. |
| Clean-up Method | Sweep spilled material into non-leaking containers. All disposal methods must be in compliance with applicable local regulations. |

7. Handling and storage

- a. Storage Keep away from: acids, alkalis, oxidizers. Keep in cool, dry, ventilate storage and in closed containers. Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Avoid freezing temperatures during storage. Do not store in reactive metal containers. Product may partially freeze with extended exposure to cold temperatures.
- b. Handling When handling, do not eat, drink, or smoke. Avoid contact with eyes. Avoid contact with skin. Spraying increases the risk of hazardous exposure. In atmospheres where the material is sprayed, workers should avoid contact with aerosols containing S through proper engineering controls, such as exhaust ventilation. Wear goggles and face shield. Do not get into the eyes. Other individuals working in the vicinity of the product where exposure can occur should also be fitted with chemical splash goggles. Contaminated clothing should be properly disposed of in a manner that will not cause additional exposure. Workers should be strongly encouraged to follow good personal hygiene practices, such as thorough washing of hands, arms, neck and face following working with JP-100Color.

8. Exposure controls/personal protection

a. Exposure Limits

National regulations

| | |
|--|--|
| Xylene | TWA – 100ppm 435mg/m ³ STEL – 150ppm 655mg/m ³ |
| Methyl acetate | TWA – 200ppm 610mg/m ³ STEL – 250ppm 760mg/m ³ |
| BISPHENOL A-EPICHLOROHYDRIN RESIN ACGIH regulations | No Data |

| | |
|-----------------------------------|-------------|
| Xylene | TWA 100 ppm |
| Methyl acetate | TWA 200 ppm |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | No Data |

Biological exposure limits

No Data

b. Suitable Engineering Management

Use process isolation, local ventilation or other engineering management to maintain air quality under exposure limits.

Set wash up facilities and safe shower system, where storage or use of this material.

c. Personal protector

Eye protection

Safety glasses with side shields.

Hands protection

Chemical resistant gloves.

Skin and body protection

Chemical resistant protective suit. Chemicals resistant boots.

Respiratory protection

Never exceed the national Occupational Exposure Limit. Use local. Exhaust ventilation or handle in a ventilated enclosure. For greater protection a face piece chemical cartridge respirator is recommended.

9. Physical and chemical properties

1. Appearance

| | |
|-------|--------|
| Type | Liquid |
| Color | Blue |

| | |
|---------------------------------|---------|
| 2. Odor | No Data |
| 3. Odour threshold | No Data |
| 4. pH | No Data |
| 5. Melting Point/Freezing Point | No Data |
| 6. Boiling Point | No Data |
| 7. Flash Point | No Data |
| 8. Evaporation Rate | No Data |
| 9. Flammability | No Data |
| 10. Flammable Limits | No Data |
| 11. Vapor Pressure | No Data |
| 12. Solubility in WATER | No Data |

| | |
|---|----------------|
| 13. Vapor density(water=1) | No Data |
| 14. Density | 0.90~1.00 |
| 15. n-Octanol/Water Partition coefficient | No Data |
| 16. Autoignition Temperature | No Data |
| 17. Decomposition Temperature | No Data |
| 18. Viscosity(at 25℃) | 5~8Cps(at 25℃) |
| 19. Molecular Weight | No Data |

10. Stability and reactivity

| | |
|-----------------------------------|---|
| Conditions to avoid | Can react strongly with epoxy resins at elevated temperature |
| Materials to avoid | Acids, amines, bases, oxidizing agents |
| Hazardous reaction | Hazardous polymerization does not occur by itself |
| Decomposition temperature | Not available |
| Hazardous decomposition component | Hazardous decomposition products are not expected to form during normal storage |

11. Toxicological information

a. Information on the likely routes of exposure

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

b. Acute Toxicity Data

Acute toxic

Oral

| | |
|-----------------------------------|-----------------------|
| Xylene | LD50 3500 mg/kg Rat |
| Methyl acetate | LD50 > 5000 mg/kg Rat |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | LD50 > 1000 mg/kg Rat |

Dermal

| | |
|-----------------------------------|---------------------------|
| Xylene | LD50 ≥4350 mg/kg Rabbit |
| Methyl acetate | LD50 > 5000 mg/kg Rat |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | LD50 > 20000 mg/kg Rabbit |

Inhalation

| | |
|-----------------------------------|-------------------------------|
| Xylene | Vapor LC50 6700 ppm 4 hr Rat |
| Methyl acetate | Vapor LCLo 32000 ppm 4 hr Rat |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | No Data |

Skin Corrosion/Irritation

No Data

Serious Eye Damage/Irritation

No Data

Respiratory sensitization

No Data

Skin sensitization

No Data

Carcinogenicity

No Data

IARC

Group 3

OSHA

No Data

ACGIH

A4

NTP

No Data

| | |
|---|---------|
| EU CLP | No Data |
| Germ Cell Mutagenicity | No Data |
| Reproductive toxicity | No Data |
| Specific target organ toxicity (single exposure): | No Data |
| Specific target organ toxicity (repeated exposure): | No Data |
| Aspiration hazard | No Data |

12. Environmental information

a. Aquatic and terrestrial ecotoxicity

| | |
|--------------------------------------|---|
| Fish toxicity (Acute) | |
| Xylene | LC50 3.3 mg/l 96 hr |
| Methyl acetate | LC50 320 mg/l 96 hr |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | LC50 1.41 mg/l 96 hr <i>Oryzias latipes</i> |
| Water flea toxicity (Acute) | |
| Xylene | LC50 190 mg/l 96 hr |
| Methyl acetate | No Data |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | EC50 1.7 mg/l 48 hr |
| Birds growth hinderance test (Acute) | |
| | No Data |

b. Persistence and degradability

| | |
|---------------|---------------|
| Persistence | |
| | log Kow 2.821 |
| Degradability | |
| | No Data |

c. Bioaccumulative potential:

| | |
|-----------------------------------|-----------------|
| condenasability | |
| Xylene | No Data |
| Methyl acetate | No Data |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | BCF 0.56 ~ 0.67 |
| biodegradability | |
| Xylene | 39 (%) |
| Methyl acetate | No Data |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | 0 (%) 28 day |

d. Mobility in soil:

| | |
|-----------------------------------|---------------|
| Xylene | log Kow = 3.2 |
| Methyl acetate | No Data |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | No Data |

e. Other adverse effects

No Data

13. Disposal considerations

Incineration is the recommended disposal method for all chemical wastes. Material collected on absorbent material may be disposed in a landfill in accordance with all applicable local, state and federal regulations

14. Transport information

| | |
|-------------------------|------|
| a. UN No. | 3082 |
| b. Proper Shipping Name | |

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

| | |
|---------------------------------|---------|
| c. Transportation Class | 9 |
| d. Packing Group | 2 |
| e. Marine Pollutant | No Data |
| f. Special precautions for user | |
| fire emergency | F-A |
| spill Emergency | S-D |

15. Regulation information

| | |
|---|-----------------------------------|
| a. Industrial Safety and Health Act | No Data |
| b. Toxic Chemical Control Act | Toxic |
| c. Dangerous Material Safety Control Act | The first four kinds of petroleum |
| d. Wastes Management Act | Designated Waste |
| e. Other requirements in domestic and other countries | |
| National regulation | Not applicable |
| other countries regulation | |
| U.S.A(OSHA) | Not applicable |
| U.S.A(CERCLA) | |
| Xylene | 45.3599 kg 100 lb |
| Methyl acetate | Not applicable |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | Not applicable |
| U.S.A(EPCRA 302) | |
| USA(EPCRA 304) | Not applicable |
| EU | |
| Xylene | R10Xn; R20/21Xi; R38 |
| Methyl acetate | F; R11Xi; R36R66R67 |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | Xi; R36/38R43N; R51-53 |
| EU | |
| Xylene | R10, R20/21, R38 |
| Methyl acetate | R11, R36, R66, R67 |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | R36/38, R43, R51/53 |
| EU | |
| Xylene | S2, S25 |
| Methyl acetate | S2, S16, S26, S29, S33 |
| BISPHENOL A-EPICHLOROHYDRIN RESIN | S2, S28, S37/39, S61 |

16. Other requirements in domestic and other countries

a. Information source and references

BISPHENOL A-EPICHLOROHYDRIN RESIN

National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)

Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)

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National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
European chemical Substances Information System(ECB-ESIS)(<http://ecb.jrc.it/esis>)
National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)
Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)
European chemical Substances Information System(ECB-ESIS)(<http://ecb.jrc.it/esis>)
National Library of Medicine/Chemical Carcinogenesis Research Information
National Library of Medicine/genetic toxicology(NLM/GENETOX)(<http://toxnet.nlm.nih.gov/>)
National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)
Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)

- b. Issuing date 2014-06-28
- c. Revision number and date
- | | |
|-----------------|---|
| Revision number | - |
| Date | - |
- d. Others