

Material Safety Data Sheet

1. Chemical Product and Company Identification

가. Trade Name	JP-100Color(Hardner)
General Use	Epoxy Hardner 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
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b. Hazards Description:

Pictogram



Signal word

DANGER

Hazards Classification and Statements

H226 Flammable liquid and vapour
H302 Harmful if swallowed
H305 May be harmful if swallowed and enters airways
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H330 Fatal if inhaled
H332 Harmful if inhaled
H360 May damage fertility or the unborn child
H370 Causes damage to organs
H372 Causes damage to organs through prolonged or repeated exposure
H412 Harmful to aquatic life with long lasting effects

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
P273 Avoid release to the environment
P280 Wear protective gloves/protective clothing/eye protection/face protection
P281 Use personal protective equipment as required
Response precautionary statements P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
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
P302+P352 IF ON SKIN: Wash with 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
P304+P341 IF INHALED: If breathing is difficult, 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.
P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
Storage precautionary statements P405 Store locked up
Disposal precautionary statements: P501 Dispose of contents/container in accordance with local/regional/national/international regulation (to be specified).

C. Other harmful or danger characteristic (NFPA)

2-ethoxyethanol		
Health hazard		1
Fire		2
Reactivity Hazard		0
Xylene		
Health hazard		No Data
Fire		No Data
Reactivity Hazard		No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN		
Health hazard		2
Fire		1
Reactivity Hazard		0
POLYAMIDOAMINE		
Health hazard		2
Fire		1
Reactivity Hazard		0
2,4,6-tris (dimethylaminomethyl) phenol		
Health hazard		3
Fire		1
Reactivity Hazard		0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS NO.	Amount(%)
2-ethoxyethanol	Beta-ethoxyethanol 110-80-5	20 ~ 30

Xylene	Dimethyl benzene	1330-20-7	10 ~ 15
BISPHENOL A-EPICHLOROHYDRIN RESIN	BISPHENOL A-EPICHLOROHYDRIN RESIN	25068-38-6	2 ~ 3
POLYAMIDOAMINE	REACTIVE POLYAMIDE RESIN	68082-29-1	55 ~ 60
2,4,6-tris (dimethylaminomethyl) phenol	TRIS((DIMETHYLAMINO)METHYL)PHENOL	90-72-2	2 ~ 5

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 a physician if effects occur.

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	
2-ethoxyethanol	TWA - 5ppm 19mg/m3
Xylene	TWA - 100ppm 435mg/m3 STEL - 150ppm 655mg/m3
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
POLYAMIDOAMINE	No Data

2,4,6-tris (dimethylaminomethyl) phenol ACGIH regulations	No Data
2-ethoxyethanol	TWA 5 ppm
Xylene	TWA 100 ppm, STEL 150 ppm
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol 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	Yellow
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℃)	30 ~50 Cps(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	
2-ethoxyethanol	LD50 2125 mg/kg Rat
Xylene	LD50 3500 mg/kg Rat
BISPHENOL A-EPICHLOROHYDRIN RESIN	LD50 > 1000 mg/kg Rat
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	LD50 1200 mg/kg Rat
Dermal	
2-ethoxyethanol	LD50 3300 mg/kg Rabbit
Xylene	LD50 ≥4350 mg/kg Rabbit
BISPHENOL A-EPICHLOROHYDRIN RESIN	LD50 > 20000 mg/kg Rabbit
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	LD50 1280 mg/kg Rat
Inhalation	
2-ethoxyethanol	LC50 16 mg/l 4 hr Rat
Xylene	Vapor LC50 6700 ppm 4 hr Rat
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	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
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)	
2-ethoxyethanol	No Data
Xylene	LC50 3.3 mg/l 96 hr
BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/l 96 hr <i>Oryzias latipes</i>
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	LC50 447.821 mg/l 96 hr
Water flea toxicity (Acute)	
2-ethoxyethanol	LC50 90 mg/l 48 hr
Xylene	LC50 190 mg/l 96 hr
BISPHENOL A-EPICHLOROHYDRIN RESIN	EC50 1.7 mg/l 48 hr
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	LC50 28.198 mg/l 48 hr
Birds growth hinderance test (Acute)	
	EC50 34.812 mg/l 96 hr
b. Persistence and degradability	
Persistence	
2-ethoxyethanol	No Data
Xylene	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	log Kow 2.821
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	log Kow 0.77
Degradability	
	No Data
c. Bioaccumulative potential:	
condenasability	
2-ethoxyethanol	No Data
Xylene	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	BCF 0.56 ~ 0.67
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	No Data
biodegradability	
2-ethoxyethanol	No Data
Xylene	39 (%)
BISPHENOL A-EPICHLOROHYDRIN RESIN	0 (%) 28 day
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	No Data
d. Mobility in soil:	
2-ethoxyethanol	No Data
Xylene	log Kow = 3.12
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
POLYAMIDOAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	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	
	3
e. Marine Pollutant	
	No Data
f. Special precautions for user	
fire emergency	
	F-A
spill Emergency	
	S-B

15. Regulation information

a. Industrial Safety and Health Act	
	No Data
b. Toxic Chemical Control Act	
	Toxic
c. Dangerous Material Safety Control Act	
	Chapter 4 second 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)	
2-ethoxyethanol	453.599 kg 1000 lb
Xylene	45.3599 kg 100 lb
BISPHENOL A-EPICHLOROHYDRIN RESIN	Not applicable
POLYAMIDOAMINE	Not applicable
2,4,6-tris (dimethylaminomethyl) phenol	Not applicable
U.S.A(EPCRA 302)	
	Not applicable
USA(EPCRA 304)	
	Not applicable
EU	
2-ethoxyethanol	R10Repr. Cat. 2; R60-61Xn; R20/21/22
Xylene	R10Xn; R20/21Xi; R38
BISPHENOL A-EPICHLOROHYDRIN RESIN	Xi; R36/38R43N; R51-53
POLYAMIDOAMINE	Not applicable
2,4,6-tris (dimethylaminomethyl) phenol	Xn; R22Xi; R36/38
EU	
2-ethoxyethanol	R60, R61, R10, R20/21/22
Xylene	R10, R20/21, R38
BISPHENOL A-EPICHLOROHYDRIN RESIN	R36/38, R43, R51/53
POLYAMIDOAMINE	Not applicable
2,4,6-tris (dimethylaminomethyl) phenol	R22, R36/38
EU	
2-ethoxyethanol	S53, S45
Xylene	S2, S25
BISPHENOL A-EPICHLOROHYDRIN RESIN	S2, S28, S37/39, S61
POLYAMIDOAMINE	Not applicable
2,4,6-tris (dimethylaminomethyl) phenol	S2, S26, S28

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>)
Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/isis/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)

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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
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| Revision number | - |
| Date | - |
- d. Others