

Material Safety Data Sheet

1. Chemical Product and Company Identification

가. Trade Name	JP-101S(Resin)
General Use	Civil construction epoxy coating
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

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H305 May be harmful if swallowed and enters airways
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye 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
H411 Toxic 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

Response precautionary statements	P281 Use personal protective equipment as required 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.
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 Hazard-Risk which are not included in the classification criteria

Acetone

Health hazard	1
Fire	3
Reactivity Hazard	0

Xylene

Health hazard	No Data
Fire	No Data
Reactivity Hazard	No Data

LIMESTONE

Health hazard	1
Fire	0
Reactivity Hazard	0

Epichlorohydrin-bisphenol A resin

Health hazard	2
Fire	1
Reactivity Hazard	0

Ethylene glycol diethyl ether

Health hazard	2
Fire	3
Reactivity Hazard	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

	Component	CAS NO.	Amount(%)
Acetone	2-propanone	67-64-1	3 ~ 5
Xylene	Dimethylbenzene	1330-20-7	20 ~ 25
LIMESTONE	CALCIUM CARBONATE, NATURAL	1317-65-3	25 ~ 30
Epichlorohydrin-bisphenol A resin	BISPHENOL A-EPICHLOROHYDRIN RESIN	25068-38-6	33 ~ 35
Ethylene glycol diethyl ether	DIETHYL CELLOSOLVE	629-14-1	4 ~ 6

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-101S.

8. Exposure controls/personal protection

a. Exposure Limits

National regulations	
Acetone	TWA – 500ppm 1188mg/m3 STEL – 750ppm 1782mg/m3
Xylene	TWA – 100ppm 435mg/m3 STEL – 150ppm 655mg/m3
LIMESTONE	TWA – 10mg/m3
Epichlorohydrin-bisphenol A resin	No Data
Ethylene glycol diethyl ether	No Data
ACGIH regulations	
Acetone	TWA 500 ppm
Xylene	TWA 100 ppm
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	No Data
Ethylene glycol diethyl ether	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	Green
2. Odor	No Data
3. Odour threshold	No Data
4. pH	No Data
5. Melting Point/Freezing Point	-94.6 °C
6. Boiling Point	56.1 °C
7. Flash Point	- 17 °C
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	1.30~1.40
15. n-Octanol/Water Partition coefficient	No Data
16. Autoignition Temperature	No Data
17. Decomposition Temperature	No Data
18. Viscosity(at 25°C)	400 ~ 1,500 Cps(at 25°C)
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	
Acetone	LD50 5280 mg/kg Rat (EHC(1990), SIDS(1997))
Xylene	LD50 3500 mg/kg Rat
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	LD50 > 1000 mg/kg Rat
Ethylene glycol diethyl ether	No Data
Dermal	
Acetone	LD50 12870 mg/kg Rabbit (EHC(1990), PATTY(1994), SIDS(1997))
Xylene	LD50 ≥4350 mg/kg Rabbit
LIMESTONE	No Data

Epichlorohydrin-bisphenol A resin	LD50 > 20000 mg/kg Rabbit
Ethylene glycol diethyl ether Inhalation	No Data
Acetone	LC50 32000 ppm Rat
Xylene	LC50 6700 ppm 4 hr Rat
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	No Data
Ethylene glycol diethyl ether Skin Corrosion/Irritation	No Data
	No Data
Serious Eye Damage/Irritation	No Data
Respiratory sensitization	No Data
	No Data
Skin sensitization	No Data
	No Data
Carcinogenicity	No Data
	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)	
Acetone	LC50 > 100 mg/l 96 hr
Xylene	LC50 3.3 mg/l 96 hr
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	LC50 1.41 mg/l 96 hr Oryzias latipes
Ethylene glycol diethyl ether	LC50 1255.262 mg/l 96 hr
Water flea toxicity (Acute)	
Acetone	No Data
Xylene	LC50 190 mg/l 96 hr
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	EC50 1.7 mg/l 48 hr
Ethylene glycol diethyl ether	LC50 1235.476 mg/l 48 hr
Birds growth hinderance test (Acute)	

	EC50 719.589 mg/l 96 hr
b. Persistence and degradability	
Persistence	log Kow 2.821
Degradability	No Data
c. Bioaccumulative potential:	
condensability	
Acetone	No Data
Xylene	No Data
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	BCF 0.56 ~ 0.67
Ethylene glycol diethyl ether	BCF 3
biodegradability	
Acetone	No Data
Xylene	39 (%)
LIMESTONE	No Data
Epichlorohydrin-bisphenol A resin	0 (%) 28 day
Ethylene glycol diethyl ether	No Data
d. Mobility in soil:	log Kow = 3.2
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	3
d. Packing Group	2
e. Marine Pollutant	No Data
f. Special precautions for user	
fire emergency	F-A
spill Emergency	S-F

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)	
Acetone	2267.995 kg 5000 lb
Xylene	45.3599 kg 100 lb
LIMESTONE	Not applicable
Epichlorohydrin-bisphenol A resin	Not applicable
Ethylene glycol diethyl ether	Not applicable
U.S.A(EPCRA 302)	
	Not applicable
USA(EPCRA 304)	
	Not applicable
EU	
Acetone	F; R11Xi; R36R66R67
Xylene	R10Xn; R20/21Xi; R38
LIMESTONE	Not applicable
Epichlorohydrin-bisphenol A resin	Xi; R36/38R43N; R51-53
Ethylene glycol diethyl ether	F ; R11, R19, Repr. Cat.2 ; R61, Repr. Cat.3 ; R62, Xi ; R36
EU	
Acetone	R11, R36, R66, R67
Xylene	R10, R20/21, R38
LIMESTONE	Not applicable
Epichlorohydrin-bisphenol A resin	R36/38, R43, R51/53
Ethylene glycol diethyl ether	R61, R11, R19, R36, R62
EU	
Acetone	S2, S9, S16, S26, S46
Xylene	S2, S25
LIMESTONE	Not applicable
Epichlorohydrin-bisphenol A resin	S2, S28, S37/39, S61
Ethylene glycol diethyl ether	S53, S45

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/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