

# Material Safety Data Sheet

## 1. Chemical Product and Company Identification

가. Trade Name	JP-228A(Resin)
General Use	Epoxy Sealing
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 3 Eye Irrit. : Category 2 Skin Sens. : Category 2 Carcinogenicity : Category1A STOT Rep. : Category 1 Aquatic Chronic : Category 2 Carcinogenicity : Category2
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### b. Hazards Description:

Pictogram



Signal word

DANGER

Hazards Classification and Statements

H302 Harmful if swallowed  
H311 Toxic in contact with skin  
H315 Causes skin irritation  
H317 May cause an allergic skin reaction  
H319 Cause serious eye irritation  
H332 Harmful if inhaled  
H340 May cause genetic defects  
H350 May cause cancer  
H373 May cause 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  
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  
P260 Do not breathe dust/fumes/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fumes/gas/mist/vapours/spray. [As modified by IV ATP]  
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.  
[As modified by IV ATP]  
P281 [Deleted by IV ATP]

Response precautionary statements

P301+312: IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.  
[As modified by IV ATP]  
P302+352: IF ON SKIN: Wash with plenty of water/... [As modified by IV ATP]

P303+361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. [As modified by IV ATP]  
 P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.  
 P308+313 If exposed: Call a POISON CENTER or doctor/physician.  
 P312 Call a POISON CENTER/ doctor/.../if you feel unwell. [As modified by IV ATP]  
 P314 Get medical advice/attention if you feel unwell.  
 P321 Specific treatment (see ... on this label).  
 P322 [Deleted by IV ATP]  
 P330 Rinse mouth.  
 P332+313 If skin irritation occurs: Get medical advice/attention.  
 P333+313 If skin irritation or a rash occurs: Get medical advice/attention.  
 P337+313 If eye irritation persists get medical advice/attention.  
 P361 Take off immediately all contaminated clothing. [As modified by IV ATP]  
 P362 Take off contaminated clothing. [As modified by IV ATP]  
 P363 Wash contaminated clothing before reuse. [As modified by IV ATP]  
 P370+378 In case of fire: Use ... to extinguish. [As modified by IV ATP]  
 P391 Collect spillage.

Storage precautionary statements

P405 Store locked up  
 P403+235 Store in a well ventilated place. Keep cool.

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

n-buthyl glycidyl ether

Health hazard	3
Fire	2
Reactivity Hazard	1

(BISPHENOL A-EPICHLOROHYDRIN RESIN)

Health hazard	2
Fire	1
Reactivity Hazard	0

Extract Residues (Coal), Tar Oil Alk., Carbonated, Limed; Crude Phenols; [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic Impurities.]

Health hazard	No Data
Fire	No Data
Reactivity Hazard	No Data

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS NO.	Amount(%)	
n-buthyl glycidyl ether	2-(BUTOXYMETHYL)OXIRANE	2426-08-06	2~5
BISPHENOL A-EPICHLOROHYDRIN RESIN	BISPHENOL A-EPICHLOROHYDRIN RESIN	25068-38-6	40~45
Extract Residues (Coal), Tar Oil Alk., Carbonated, Limed; Crude Phenols; [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic Impurities.]		90641-06-8	40~45

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. 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      White
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      No Data
15. n-Octanol/Water Partition coefficient      No Data
16. Autoignition Temperature      No Data
17. Decomposition Temperature      No Data
18. Viscosity(at 25°C)      thixo
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

### b. Acute Toxicity Data

#### Acute toxic

##### Oral

n-butyl glycidyl ether LD50 1660 mg/kg Rat

BISPHENOL A-EPICHLOROHYDRIN RESIN LD50 > 1000 mg/kg Rat

Extract Residues (Coal), Tar Oil Alk., No Data

Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic

##### Dermal

n-butyl glycidyl ether LD50 788 mg/kg Rabbit

BISPHENOL A-EPICHLOROHYDRIN RESIN LD50 > 20000 mg/kg Rabbit

Extract Residues (Coal), Tar Oil Alk., No Data

Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic

##### Inhalation

n-butyl glycidyl ether LC50 2590 ppm 4 hr Rat

BISPHENOL A-EPICHLOROHYDRIN RESIN No Data

Extract Residues (Coal), Tar Oil Alk., No Data

Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic

##### Skin Corrosion/Irritation

No Data

##### Serious Eye Damage/Irritation

No Data

##### Respiratory sensitization

No Data

##### Skin sensitization

No Data

##### Carcinogenicity

No Data

##### IARC

Group 1

##### 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)

n-butyl glycidyl ether	No Data
BIPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/l 96 hr Oryzias latipes
Extract Residues (Coal), Tar Oil Alk., Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic	No Data
Water flea toxicity (Acute)	

n-butyl glycidyl ether	No Data
BIPHENOL A-EPICHLOROHYDRIN RESIN	EC50 1.7 mg/l 48 hr
Extract Residues (Coal), Tar Oil Alk., Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic	No Data
Birds growth hinderance test (Acute)	

No Data

### b. Persistence and degradability

#### Persistence

log Kow 2.821

#### Degradability

No Data

### c. Bioaccumulative potential:

#### condenasability

n-butyl glycidyl ether	No Data
BIPHENOL A-EPICHLOROHYDRIN RESIN	BCF 0.56 ~ 0.67
Extract Residues (Coal), Tar Oil Alk., Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic	No Data
biodegradability	

n-butyl glycidyl ether	No Data
BIPHENOL A-EPICHLOROHYDRIN RESIN	0 (%) 28 day
Extract Residues (Coal), Tar Oil Alk., Carbonated, Limed; Crude Phenols: [The Product Obtained By Treatment Of Coal Tar Oil Alkaline Extract With Co2 And Cao. Composed Primarily Of Caco3, Ca(OH)2, Na2Co3 And Other Organic And Inorganic	No Data

d. Mobility in soil:

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

III

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

No Data

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)

Not applicable

U.S.A(EPCRA 302 )

Not applicable

USA(EPCRA 304 )

Not applicable

EU

Not applicable

BISPHENOL A-EPICHLOROHYDRIN RESIN

Xi; R36/38R43N; R51-53

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Carbonated, Limed; Crude Phenols; [The  
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Oil Alkaline Extract With Co2 And Cao.  
Composed Primarily Of Caco3, Ca(OH)2,  
Na2Co3 And Other Organic And Inorganic

Carc.Cat.2; R45, Muta.Cat.2; R46

EU

BISPHENOL A-EPICHLOROHYDRIN RESIN R36/38, R43, R51/53  
Extract Residues (Coal), Tar Oil Alk., R45, R46  
Carbonated, Limed; Crude Phenols: [The  
Product Obtained By Treatment Of Coal Tar  
Oil Alkaline Extract With Co2 And Cao.  
Composed Primarily Of Caco3, Ca(OH)2,  
Na2Co3 And Other Organic And Inorganic  
EU

BISPHENOL A-EPICHLOROHYDRIN RESIN S2, S28, S37/39, S61  
Extract Residues (Coal), Tar Oil Alk., S:53-45  
Carbonated, Limed; Crude Phenols: [The  
Product Obtained By Treatment Of Coal Tar  
Oil Alkaline Extract With Co2 And Cao.  
Composed Primarily Of Caco3, Ca(OH)2,  
Na2Co3 And Other Organic And Inorganic

## 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](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](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](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  
System(NLM/CCRIS)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CCRIS>)  
National Library of Medicine/genetic toxicology(NLM/GENETOX)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?GENETOX>)  
National Institute of Technology and Evaluation(NITE)([http://www.safe.nite.go.jp/ghs/h18\\_bunrui.html](http://www.safe.nite.go.jp/ghs/h18_bunrui.html))  
Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)

b. Issuing date 2013-06-28

### c. Revision number and date

Revision number 2  
Date 2015-04-02

### d. Others