

# Material Safety Data Sheet

## 1. Chemical Product and Company Identification

상품명	HOC-301(Resin)
General Use	Indoor heavy electric machine epoxy resin
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	Skin Irrit. : Category 2 Eye Irrit. : Category 2 Skin Sens. : Category 1 Carcinogenicity : Category1A STOT Rep. : Category 1 Aquatic Chronic : Category 3
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### b. Hazards Description:

Pictogram



Signal word

DANGER

Hazards Classification and Statements

H315 Causes skin irritation  
H317 May cause an allergic skin reaction  
H319 Causes serious eye irritation  
H350 May cause cancer  
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  
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

Response precautionary statements

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).  
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.

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)

SiO<sub>2</sub>

Health hazard	1
Fire	0
Reactivity Hazard	0

BISPHENOL A-EPICHLOROHYDRIN RESIN

Health hazard	2
Fire	1
Reactivity Hazard	0

FIBERGLASS WOOL

Health hazard	1
Fire	0
Reactivity Hazard	0

Polyether polyol resin

Health hazard	1
Fire	1
Reactivity Hazard	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

	Component	CAS NO.	Amount(%)
SiO <sub>2</sub>	QUARTZ (SiO <sub>2</sub> )	14808-60-7	65~70
BISPHENOL A-EPICHLOROHYDRIN RESIN	BISPHENOL A-EPICHLOROHYDRIN RESIN	25068-38-6	20~25
FIBERGLASS WOOL	FIBROUS GLASS WOOL	65997-17-3	5~10
Polyether polyol resin	Oxirane, methyl-, polymer, containing oxirane, ether, containing 1,2,3-propanetriol	9082-00-2	0~5

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 occur.
- 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 HOC-301

8. Exposure controls/personal protection

a. Exposure Limits

National regulations

SiO2	TWA - 0.05mg/m3
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
FIBERGLASS WOOL	TWA - 5mg/m3
Polyether polyol resin	No Data

ACGIH regulations

SiO2	TWA 0.025 mg/m <sup>3</sup>
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
FIBERGLASS WOOL	Not applicable
Polyether polyol 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	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	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)	200~300 cps(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

SiO <sub>2</sub>	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	LD50 > 1000 mg/kg Rat
FIBERGLASS WOOL	No Data
Polyether polyol resin	LD50 > 10000 mg/kg Rat
Dermal	

No Data

###### SiO<sub>2</sub>

BISPHENOL A-EPICHLOROHYDRIN RESIN	LD50 > 20000 mg/kg Rabbit
FIBERGLASS WOOL	No Data
Polyether polyol resin	LD50 > 5000 mg/kg Rabbit

###### Inhalation

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 1 (Silica, crystalline (inhaled in the form of quartz or cristobalite from occupational sources) )
OSHA	
	No Data
ACGIH	
	A2
NTP	
SiO2	K (Silica, Crystalline (Respirable Size))
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
FIBERGLASS WOOL	R (inhalable)
Polyether polyol resin	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)

SiO2	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/l 96 hr <i>Oryzias latipes</i>
FIBERGLASS WOOL	No Data
Polyether polyol resin	No Data

#### Water flea toxicity (Acute)

SiO2	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	EC50 1.7 mg/l 48 hr
FIBERGLASS WOOL	No Data
Polyether polyol resin	No Data

#### Birds growth hinderance test (Acute)

No Data

### b. Persistence and degradability

#### Persistence

SiO2	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	log Kow 2.821
FIBERGLASS WOOL	No Data
Polyether polyol resin	No Data

#### Degradability

	No Data
c. Bioaccumulative potential:	
condensability	
SiO <sub>2</sub>	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	BCF 0.56 ~ 0.67
FIBERGLASS WOOL	No Data
Polyether polyol resin	No Data
biodegradability	
SiO <sub>2</sub>	No Data
BISPHENOL A-EPICHLOROHYDRIN RESIN	0 (%) 28 day
FIBERGLASS WOOL	No Data
Polyether polyol resin	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	Observational chemicals
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
USA(EPCRA 313 )	Not applicable
EU	Xi; R36/38R43N; R51-53
EU	
SiO2	Not applicable
BISPHENOL A-EPICHLOROHYDRIN RESIN	R36/38, R43, R51/53
FIBERGLASS WOOL	Not applicable
Polyether polyol resin	Not applicable
EU	
SiO2	Not applicable
BISPHENOL A-EPICHLOROHYDRIN RESIN	S2, S28, S37/39, S61
FIBERGLASS WOOL	Not applicable
Polyether polyol resin	Not applicable

## 16. Other requirements in domestic and other countries

### a. Information source and references

#### SiO2

- Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
- ECB-ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>)
- ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)
- IUCLID Chemical Data Sheet, EC-ECB
- International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>)
- TOXNET, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)
- The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)

#### 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/CARCIN)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- National Library of Medicine/genetic toxicology(NLM/GENETOX)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- 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>)

#### Polyether polyol resin

- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)

National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)  
Seton compliance resource center(<http://www.setonresourcecenter.com/MSDSs>)

- b. Issuing date 2014-09-12
- c. Revision number and date
  - Revision number -
  - Date -
- d. Others