

Material Safety Data Sheet

1. Chemical Product and Company Identification

㉔. Trade Name	SM-100B(Resin)
General Use	Epoxy Molding
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 STOT Rep. : Category 1 Aquatic Chronic : Category 1
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b. Hazards Description:

Pictogram



Signal word	WARNING
Hazards Classification and Statements	H302 May be harmful if swallowed H315 Causes skin irritation H317 May cause an allergic skin reaction H319 Causes serious eye irritation H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long lasting effects
Prevention precautionary statements	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. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wash...thoroughly after handling
Response precautionary statements	P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302+P352 IF ON SKIN (or hair): Wash with plenty of soap and water. 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).
㉕. Other harmful or danger characteristic (NFPA)	
BISPHENOL A-EPICHLOROHYDRIN RESIN	
Health hazard	2
Fire	1
Reactivity Hazard	0

C12-C14 ALKYL GLYCIDYL ETHER	
Health hazard	1
Fire	1
Reactivity Hazard	0
MALEIC ACID	
Health hazard	1
Fire	1
Reactivity Hazard	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS NO.	Amount(%)
BISPHENOL A-EPOCHLOROXYDRIN RESIN	25068-38-6	85 ~ 95
C12-C14 ALKYL GLYCIDYL ETHER	68609-97-2	1 ~ 10
MALEIC ACID	9005-09-08	1 ~ 10
Pig(B)		3 ↓

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
Special fire fighting Procedures	When fire fighting, wear full protective equipment including self-contained breathing

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-701.

8. Exposure controls/personal protection

a. Exposure Limits

National regulations

BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data

ACGIH regulations

BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data

Biological exposure limits

BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	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	Color
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	1.08~1.18
15. n-Octanol/Water Partition coefficient	No Data
16. Autoignition Temperature	No Data
17. Decomposition Temperature	No Data
18. Viscosity(at 25℃)	2,800~3,500cps(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

BISPHENOL A-EPICHLOROHYDRIN RESIN	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.
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C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
b. Acute Toxicity Data	
Acute toxic	
Oral	
BISPHENOL A-EPICHLOROHYDRIN RESIN	LD50 > 1000 mg/kg Rat
C12-C14 ALKYL GLYCIDYL ETHER	LD50 17100 mg/kg Rat
MALEIC ACID	No Data
Dermal	
BISPHENOL A-EPICHLOROHYDRIN RESIN	LD50 > 20000 mg/kg Rabbit
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Inhalation	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Skin Corrosion/Irritation	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Serious Eye Damage/Irritation	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Respiratory sensitization	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Skin sensitization	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	R43
MALEIC ACID	No Data
Carcinogenicity	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
IARC	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
OSHA	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
ACGIH	
BISPHENOL A-EPICHLOROHYDRIN RESIN	A2
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
NTP	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
EU CLP	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Germ Cell Mutagenicity	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Reproductive toxicity	

BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Specific target organ toxicity (single exposure):	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Specific target organ toxicity (repeated exposure):	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
Aspiration hazard	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data

12. Environmental information

a. Aquatic and terrestrial ecotoxicity:

Fish toxicity (Acute):

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

Water flea toxicity (Acute):

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

Birds growth hinderance test (Acute):

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

b. Persistence and degradability:

Persistence:

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

Degradability:

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

c. Bioaccumulative potential:

condenasability

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

biodegradability

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

d. Mobility in soil:

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	No Data

e. Other adverse effects:

BISPHENOL A-EPICHLOROHYDRIN RESIN	LC50 1.41 mg/ℓ 96 hr Oryzias latipes
C12-C14 ALKYL GLYCIDYL ETHER	LC50 0.002 mg/ℓ 96 hr
MALEIC ACID	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	
BISPHENOL A-EPICHLOROHYDRIN RESIN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
C12-C14 ALKYL GLYCIDYL ETHER	Not applicable
MALEIC ACID	Not applicable
c. Transportation Class	
BISPHENOL A-EPICHLOROHYDRIN RESIN	9
C12-C14 ALKYL GLYCIDYL ETHER	Not applicable
MALEIC ACID	Not applicable
d. Packing Group	
BISPHENOL A-EPICHLOROHYDRIN RESIN	III
C12-C14 ALKYL GLYCIDYL ETHER	Not applicable
MALEIC ACID	Not applicable
e. Marine Pollutant	
BISPHENOL A-EPICHLOROHYDRIN RESIN	No Data
C12-C14 ALKYL GLYCIDYL ETHER	No Data
MALEIC ACID	No Data
f. Special precautions for user	
fire emergency	
BISPHENOL A-EPICHLOROHYDRIN RESIN	F-A
C12-C14 ALKYL GLYCIDYL ETHER	Not applicable
MALEIC ACID	Not applicable
spill Emergency	
BISPHENOL A-EPICHLOROHYDRIN RESIN	S-F
C12-C14 ALKYL GLYCIDYL ETHER	Not applicable
MALEIC ACID	Not applicable

15. Regulation information

a. Industrial Safety and Health Act	No Data
b. Toxic Chemical Control Act	No Data
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	
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

16. Other requirements in domestic and other countries

- a. Information source and references
- 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>)
 - (<http://hazmat.nema.go.kr>)
 - (<http://ncis.nier.go.kr>)

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

b. Issuing date	2013-06-28
c. Revision number and date	
Revision number	3
Date	2015-10-08
d. Others	-