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

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 ancer

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

P405Store 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

3 Health hazard 2 Fire Reactivity Hazard 1 (BISPHENOL A-EPICHLOROHYDRIN RESIN) Health hazard 2 Fire 1 Reactivity Hazard 0 Extract Residues (Coal), Tar Oll Alk., Carbonated, Limed; Crude Phenols; [The Product Obtained By Treatment Of Coal Tar

Composed Primarily Of Caco3, Ca(Oh)2, Na2Co3 And Other Organic And Inorganic No Data Health hazard Fire

Oil Alkaline Extract With Co2 And Cao.

No Data No Data Reactivity Hazard

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 eves with plenty of water for at least 15 minutes while holding evelids 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

In case of fire, toxic fumes might be formed

5. Fire fighting measures

Hazardous products of Combustion

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.

Sweep spilled material into non-leaking containers.

All disposal methods must be in compliance

with applicable local regulations.

7. Handling and storage

Clean-up Method

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-100D.

8. Exposure controls/personal protection

a. Exposure Limits

National regulations

n-buthyl glycidyl ether TWA - 10ppm 53mg/m3

BISPHENOL A-EPICHLOROHYDRIN RESIN 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 No Data

ACGIH regulations

n-buthyl glycidyl ether TWA 3 ppm BISPHENOL A-EPICHLOROHYDRIN RESIN No Data

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

Biological exposure limits

No Data

b. Suitable Engieering Management Use process isolation, local ventilation or other engieering 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.

thixo

No Data

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

18. Viscosity(at 25°C)

19. Molecular Weight

Liquid Type 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 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

• • • •

No Data

No Data

No Data

No Data

b. Acute Toxicity Data Acute toxic

Oral

n-buthyl glycidyl ether LD50 1660 mg/kg Rat BISPHENOL A-EPICHLOROHYDRIN RESIN LD50 > 1000 mg/kg Rat

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

Dermal

n-buthyl glycidyl ether LD50 788 mg/kg Rabbit BISPHENOL A-EPICHLOROHYDRIN RESIN LD50 > 20000 mg/kg Rabbit

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

Inhalation

n-buthyl glycidyl ether LC50 2590 ppm 4 hr Rat

BISPHENOL A-EPICHLOROHYDRIN RESIN

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

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):

Specific target organ toxicity (repeated exposure):

No Data

Aspiration hazard

No Data

12. Environmental information

a. Aquatic and terrestrial ecotoxicity

Fish toxicity (Acute)

n-buthyl glycidyl ether No Data

BISPHENOL A-EPICHLOROHYDRIN RESIN

LC50 1.41 mg/ ℓ 96 hr Oryzias latipes No Data

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

Water flea toxicity (Acute)

n-buthyl glycidyl ether No Data

BISPHENOL 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 Birds growth hinderance test (Acute)

No Data

No Data

b. Persistence and degradability

Persistence

log Kow 2.821

Degradability

No Data

c. Bioaccumulative potential:

condenasability

n-buthyl glycidyl ether

BISPHENOL A-EPICHLOROHYDRIN RESIN

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

biodegradablility

n-buthyl glycidyl ether

BISPHENOL A-EPICHLOROHYDRIN RESIN

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

No Data

BCF 0.56 ~ 0.67

No Data

0 (%) 28 day 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

Ш

e.Marine Pllutant

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
Not applicable

U.S.A(EPCRA 302)

Not applicable

USA(EPCRA 304)

Not applicable

ΕU

BISPHENOL A-EPICHLOROHYDRIN RESIN

Xi; R36/38R43N; R51-53

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

ΕŪ

BISPHENOL A-EPICHLOROHYDRIN RESIN

R36/38, R43, R51/53

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 R45, R46

EU

BISPHENOL A-EPICHLOROHYDRIN RESIN

S2, S28, S37/39, S61

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 S:53-45

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 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 2

Date 2015-04-02

d. Others