

Material Safety Data Sheet

1. Chemical Product and Company Identification

ㄱ. Trade Name	JP-105(Hardner)
General Use	Epoxy Mortar
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 3 Acute. Tox. : Category 1 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	H301 Toxic if swallowed H311 Toxic in contact with skin H314 Causes severe skin burns and eye damage H317 May cause an allergic skin reaction H318 Causes serious eye damage H330 Fatal if inhaled H335 May cause respiratory irritation H371 May cause damage to organs
Prevention precautionary statements	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 P280 Wear protective gloves/protective clothing/eye protection/face protection P284 Wear respiratory protection
Response precautionary statements	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician P301+P330+P331 IF SWALLOWED: Rinse mouth Do NOT induce vomiting P302+P352 IF ON SKIN: Wash with soap and water

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor/physician

P312 Call a POISON CENTER or doctor/physician if you feel unwell

P320 Specific treatment is urgent (see ... on this label)

P321 Specific treatment (see ... on this label)

P322 Specific measures (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.

Storage precautionary statements

P403+P233 Store in a well ventilated place Keep container tightly closed

P403+P235 Store in a well ventilated place Keep cool

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)

Benzyl alcohol

Health hazard 2

Fire 1

Reactivity Hazard 0

m- xylene -a, a '' - diamine

Health hazard 4

Fire 1

Reactivity Hazard 0

POLY(OXYPROPYLENE)DIAMINE

Health hazard 3

Fire 1

Reactivity Hazard 0

2,4,6-tris (dimethylaminomethyl) phenol

Health hazard 3

Fire 1

Reactivity Hazard 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS NO.	Amount(%)
Benzyl alcohol	BENZENEMETHANOL 100-51-6	5~10
m- xylene -a, a '' - diamine	1,3-BENZENEDIMETHANAMINE 1477-55-0	5~10
POLY(OXYPROPYLENE)DIAMINE	Poly (oxy (methyl-1,2-ethanediy)), alpha- (2-amino-2-methyl-ethyl) - omega - 2,4,6-	80 ~ 85
2,4,6-tris (dimethylaminomethyl) phenol	TRIS((DIMETHYLAMINO)METHYL)PHEN O 90-72-2	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 JP-105.

8. Exposure controls/personal protection

a. Exposure Limits

National regulations

Benzyl alcohol	No Data
m- xylene -a, a'' - diamine	TWA - C 0.1mg/m3
POLY(OXYPROPYLENE)DIAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	No Data

ACGIH regulations

Benzyl alcohol	No Data
m- xylene -a, a '' - diamine	C 0.1 mg/m ³
POLY(OXYPROPYLENE)DIAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	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	93 °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	0.95~1.05
15. n-Octanol/Water Partition coefficient	No Data
16. Autoignition Temperature	No Data
17. Decomposition Temperature	No Data
18. Viscosity(at 25°C)	10~100CPS(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

Benzyl alcohol LD50 1230 mg/kg Rat

m- xylene -a, a'' - diamine LD50 980 mg/kg Rat

POLY(OXYPROPYLENE)DIAMINE LD50 242 mg/kg Rat

2,4,6-tris (dimethylaminomethyl) phenol LD50 1200 mg/kg Rat

Dermal

Benzyl alcohol LD50 2000 mg/kg Rabbit

m- xylene -a, a'' - diamine LD50 2000 mg/kg Rabbit

POLY(OXYPROPYLENE)DIAMINE LD50 360 mg/kg Rabbit

2,4,6-tris (dimethylaminomethyl) phenol LD50 1280 mg/kg Rat

Inhalation

Benzyl alcohol LC50 0.9 mg/l 4 hr Rat

m- xylene -a, a'' - diamine LC50 2800 ppm 4 hr Rat

POLY(OXYPROPYLENE)DIAMINE No Data

2,4,6-tris (dimethylaminomethyl) phenol 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

No Data

OSHA

No Data

ACGIH

No Data

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)

Benzyl alcohol	LC50 10 mg/ℓ 96 hr
m- xylene -a, a '' - diamine	No Data
POLY(OXYPROPYLENE)DIAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	LC50 447.821 mg/ℓ 96 hr

Water flea toxicity (Acute)

Benzyl alcohol	No Data
m- xylene -a, a '' - diamine	No Data
POLY(OXYPROPYLENE)DIAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	LC50 28.198 mg/ℓ 48 hr

Birds growth hinderance test (Acute)

Benzyl alcohol	No Data
m- xylene -a, a '' - diamine	ErC50 14 mg/ℓ 72 hr
POLY(OXYPROPYLENE)DIAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	EC50 34.812 mg/ℓ 96 hr

b. Persistence and degradability

Persistence

Benzyl alcohol	log Kow 1.1
m- xylene -a, a '' - diamine	No Data
POLY(OXYPROPYLENE)DIAMINE	No Data
2,4,6-tris (dimethylaminomethyl) phenol	log Kow 0.77

Degradability

No Data

c. Bioaccumulative potential:

condenasability

BCF 3.162

biodegradablility

94 (%) 28 day

d. Mobility in soil:

log Kow = 3.12

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.

2735

b. Proper Shipping Name

Benzyl alcohol	ALCOHOLS,N.O.S.
m- xylene -a, a '' - diamine	CORROSIVE LIQUID, TOXIC, N.O.S
POLY(OXYPROPYLENE)DIAMINE	AMINES,LIQUID,CORROSIVE,N.O.S. or POLYAMINES,LIQUID,CORROSIVE,N.O.S.

2,4,6-tris (dimethylaminomethyl) phenol	AMINES,LIQUID,CORROSIVE,N.O.S. or POLYAMINES,LIQUID,CORROSIVE,N.O.S.
c. Transportation Class	
	8
d. Packing Group	
	I
e. Marine Pollutant	
	No Data
f. Special precautions for user	
fire emergency	
	F-A
spill Emergency	
	S-B

15. Regulation information

a. Industrial Safety and Health Act	No Data
b. Toxic Chemical Control Act	No Data
c. Dangerous Material Safety Control Act	Chapter 4 third petroleum 2000?
d. Wastes Management Act	No Data
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)	Applicable
EU	
Benzyl alcohol	Xn: R20/22
m- xylene -a, a '' - diamine	Not applicable
POLY(OXYPROPYLENE)DIAMINE	Not applicable
2,4,6-tris (dimethylaminomethyl) phenol	Xn: R22Xi; R36/38
EU	
Benzyl alcohol	R20/22
m- xylene -a, a '' - diamine	Not applicable
POLY(OXYPROPYLENE)DIAMINE	Not applicable
2,4,6-tris (dimethylaminomethyl) phenol	R22, R36/38
EU	
Benzyl alcohol	S2, S26
m- xylene -a, a '' - diamine	Not applicable
POLY(OXYPROPYLENE)DIAMINE	Not applicable

16. Other requirements in domestic and other countries

a. Information source and references

Benzyl Alcohol

ICSC

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>)

m-Xylene-a,a''-diamine

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>)

POLY(OXYPROPYLENE)DIAMINE

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

b. Issuing date 2013-06-28

c. Revision number and date

Revision number -

Date -

d. Others