

SAFETY DATA SHEET

Revision: 3.0 Date: 09.06.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 453/2010

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1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	M-Bond AE Resin
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.

1.2 Recommended use of the chemical and restrictions on use

Identified Use(s)	Adhesives.
Uses Advised Against	None known.

1.3 Supplier's details

Company Identification	VISHAY MEASUREMENTS GROUP, INC. Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	919-365-3800
Fax	919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com

1.4 Emergency Phone No.

1-800-424-9300
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 GHS Classification

Skin Irrit. 2; H315
Skin Sens. 1; H317
Eye Irrit. 2; H319
STOT SE 2; H371 - oral.
Muta. 2; H341
Aquatic Chronic 3; H412

2.2 Label elements

Product Name	M-Bond AE Resin
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Hazard Pictogram(s)



Signal Word(s)

Warning

Contains:

Bis-[4-(2,3-epoxypropoxy)phenyl] propane, Bisphenol A Diglycidyl Ether, 2,3-Epoxypropyl o-tolyl ether and Resorcinol.

Hazard Statement(s)

H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H341: Suspected of causing genetic defects.
H371: May cause damage to organs - oral.
H412: Harmful to aquatic life with long lasting effects.

Precautionary Statement(s)

P201: Obtain special instructions before use.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

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P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.

Additional Information

None

2.3 Other hazards

None

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

GHS Classification

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Bis-[4-(2,3-epoxypropoxy)phenyl] propane	< 75	1675-54-3	216-823-5	None assigned	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319
Bisphenol A Diglycidyl Ether	15 – 25	25085-99-8	-	None assigned	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 2; H411
2,3-Epoxypropyl o-tolyl ether	< 5	2210-79-9	218-645-3	None assigned	Skin Irrit. 2; H315 Skin Sens. 1; H317 Muta. 2; H341 Aquatic Chronic 2; H411
Resorcinol	< 5	108-46-3	203-585-2	None assigned	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 STOT SE 1; H370 Aquatic Acute 1; H400

H302: Harmful if swallowed. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H341: Suspected of causing genetic defects. H370: Causes damage to organs. H400: Very toxic to aquatic life. H411: Toxic to aquatic life with long lasting effects.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. If irritation (redness, rash, blistering) develops, get medical attention. IF exposed or concerned: Get medical advice/attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists.

Ingestion

IF SWALLOWED: Rinse mouth. Make victim drink plenty of water. Do not induce vomiting unless instructed to do so by medical personnel. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and

Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction.

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- 4.3 **Indication of any immediate medical attention and special treatment needed**

delayed

Suspected of causing genetic defects. May cause damage to organs - oral.
Treat symptomatically.

5. SECTION 5: FIREFIGHTING MEASURES

- 5.1 **Extinguishing media**
Suitable Extinguishing media As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Unsuitable extinguishing media Do not use water jet. Direct water jet may spread the fire.
- 5.2 **Special hazards arising from the substance or mixture** Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Decomposes in a fire giving off toxic fumes: Phenolics, Carbon monoxide and Carbon dioxide.
- 5.3 **Advice for fire-fighters** Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 **Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation. Stop leak if safe to do so. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours.
- 6.2 **Environmental precautions** Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
- 6.3 **Methods and material for containment and cleaning up** Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste.
- 6.4 **Reference to other sections** See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

- 7.1 **Precautions for safe handling** Avoid contact with skin, eyes or clothing. Do not breathe vapour. Ensure adequate ventilation. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
- 7.2 **Conditions for safe storage, including any incompatibilities**
Storage temperature Store in a well-ventilated place. Keep container tightly closed. Keep cool. Keep away from heat, sources of ignition and direct sunlight.
Storage life Ambient. Keep at temperature not exceeding (°C): 27
Incompatible materials Stable under normal conditions.
Keep away from: Flammable liquids, Strong Oxidizing agents, Corrosive Substances, Strong Acids and strong mineral and organic bases, especially primary and secondary aliphatic amines.
- 7.3 **Specific end use(s)** Adhesives. See Section: 1.2

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 **Control parameters**
8.1.1 **Occupational Exposure Limits**

SUBSTANCE	CAS No.	LTCL (8 hr TWA ppm)	LTCL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Resorcinol	108-46-3	10	45	20	90	NIOSH

Note: *15 minutes average value

- 8.1.2 **Biological limit value** Not established.
- 8.1.3 **PNECs and DNELs** Not established.

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8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Have available eyewash bottle with clean water.

8.2.2 Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place.

Eye/ face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection (EN166).

Skin protection



Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection



In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment.

Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear - Amber Coloured liquid.
Odour	Faint Epoxy Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	1 @ 118°C (mmHg)
Vapour density	>3.8 (Air = 1)
Relative density	1.15 (H ₂ O = 1)
Solubility(ies)	The substance is essentially insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information

None

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Stability and reactivity

Stable under normal conditions.

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10.2	Chemical stability	Stable under normal conditions. May decompose if heated.
10.3	Possibility of hazardous reactions	Hazardous polymerisation will not occur.
10.4	Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight. Keep at temperature not exceeding (°C): 27
10.5	Incompatible materials	Flammable liquids, Strong Oxidizing agents, Corrosive Substances, Strong Acids and strong mineral and organic bases, especially primary and secondary aliphatic amines.
10.6	Hazardous decomposition product(s)	Decomposes in a fire giving off toxic fumes: Phenolics, Carbon monoxide and Carbon dioxide.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity

Ingestion

Based upon the available data, the classification criteria are not met.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.

Inhalation

Based upon the available data, the classification criteria are not met.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.

Skin Contact

Based upon the available data, the classification criteria are not met.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.

Skin corrosion/irritation

Skin Irrit. 2: Causes skin irritation.

Serious eye damage/irritation

Eye Irrit. 2: Causes serious eye irritation.

Respiratory or skin sensitization

Skin Sens. 1: May cause an allergic skin reaction.

Germ cell mutagenicity

Muta. 2: Suspected of causing genetic defects.

Carcinogenicity

Based upon the available data, the classification criteria are not met.

Reproductive toxicity

Based upon the available data, the classification criteria are not met.

STOT - single exposure

STOT SE 2: May cause damage to organs - oral.

STOT - repeated exposure

Based upon the available data, the classification criteria are not met.

Aspiration hazard

Based upon the available data, the classification criteria are not met.

11.2 Other information

None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1	Toxicity	Aquatic Chronic 3: Harmful to aquatic life with long lasting effects. Estimated Mixture LC50 >10 ≤ 100 mg/l (Fish)
12.2	Persistence and degradability	Part of the components are poorly biodegradable.
12.3	Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4	Mobility in soil	The product is predicted to have low mobility in soil (Insoluble in water).
12.5	Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6	Other adverse effects	None known.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1	Waste treatment methods	Dispose of this material and its container as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
13.2	Additional Information	Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

		ADR/RID / IMDG / IATA
14.1	UN number	Not applicable
14.2	Proper Shipping Name	Not applicable
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not classified as a Marine Pollutant/ Environmentally hazardous substance.

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14.6	Special precautions for user	See Section: 2
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable
14.8	Additional Information	None

15. SECTION 15: REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1	National regulations	
	USA	NTP: Not listed OSHA Regulated: Not listed Not listed
15.1.2	IARC Monographs	
15.1.3	European regulations	
	SVHCs	None
	Wassergefährdungsklasse (Germany)	Water hazard class: 2
15.2	Chemical Safety Assessment	Not available.

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Bis-[4-(2,3-epoxipropoxy)phenyl]propane (CAS# 1675-54-3), 2,3-Epoxypropyl o-tolyl ether (CAS# 2210-79-9) and Resorcinol (CAS# 108-46-3). Existing ECHA registration(s) for 2,3-Epoxypropyl o-tolyl ether (CAS# 2210-79-9) and Resorcinol (CAS# 108-46-3), and the Classification and Labelling Inventory for Bisphenol A Diglycidyl Ether (CAS# 25085-99-8).

GHS Classification of the substance or mixture	Classification Procedure
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
Muta. 2; H341	Threshold Calculation
STOT SE 2; H371	Threshold Calculation
Aquatic Chronic 3; H412	Summation Calculation

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
OSHA	The Occupational Safety & Health Administration
NIOSH	National Institute for Occupational Safety and Health

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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Annex to the extended Safety Data Sheet (eSDS)

No information available.