

SAFETY DATA SHEET

Revision: 1.0 Date: 08.05.2014

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





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M-Bond GA-2 Resin

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

1.1 Product identifier	
Product Name	M-Bond GA-2 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.
1.3 Supplier's details	
Company Identification	VISHAY MEASUREMENTS GROUP UK LTD Stroudley Road Basingstoke Hampshire RG24 8FW United Kingdom
Telephone	+44 (0) 1256 462131
Fax	+44 (0) 1256 471441
E-Mail (competent person)	mm.uk@vishaypg.com
1.4 Emergency Phone No.	(00-1) 703-527-3887 CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture	
Directive 67/548/EEC & Directive 1999/45/EC	Xi; R38 Xi; R41 R43 N; R51/53
2.2 Label elements	
Product Name	Directive 67/548/EEC & Directive 1999/45/EC M-Bond GA-2 Resin
Hazard Symbol	  Xi N
Risk Phrases	R38: Irritating to skin. R41: Risk of serious damage to eyes. R43: May cause sensitization by skin contact. R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Phrases	S24/25: Avoid contact with skin and eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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S37/39: Wear suitable gloves and eye/face protection.
S64: If swallowed, rinse mouth with water (only if the person is conscious).
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61: Avoid release to the environment. Refer to special instructions/Safety Data Sheets.

2.3 Other hazards

None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Substances in preparations / mixtures

3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP)

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard Statement(s)
2-Ethyl-2-(hydroxymethyl)-1,3-Propanediol polymer with (chloromethyl)oxirane	27 - 32	30499-70-8	-	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 3; H412
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	15 – 20	25068-38-6	500-033-5	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 2; H411
Limestone	30 – 35	1317-65-3	215-279-6	Eye Dam. 1; H318 Skin Irrit. 2; H315

Directive 67/548/EEC & Directive 1999/45/EC

Chemical identity of the substance	%W/W	CAS No.	EC No.	EC Classification and Risk Phrases
2-Ethyl-2-(hydroxymethyl)-1,3-Propanediol polymer with (chloromethyl)oxirane	27 - 32	30499-70-8	-	Xi; R36/38: Irritating to eyes and skin. R43: May cause sensitization by skin contact. N; R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	15 – 20	25068-38-6	500-033-5	Xi; R36/38: Irritating to eyes and skin. R43: May cause sensitization by skin contact. N; R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Limestone	30 – 35	1317-65-3	215-279-6	Xi; R38: Irritating to skin. Xi; R41: Risk of serious damage to eyes.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Inhalation

IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a

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Skin Contact	position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Rinse skin immediately with plenty of water for 15-20 minutes. Take off contaminated clothing and wash before reuse. If irritation (redness, rash, blistering) develops, get medical attention.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Hold eye open and rinse slowly and gently with water for 15-20 minutes. If eye irritation persists: Get medical advice/attention.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Drink two glasses of water. Do not induce vomiting. Call a POISON CENTER or doctor/physician.
4.2 Most important symptoms and effects, both acute and delayed	Skin sensitisation has been reported in humans. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes burns to eyes. Systemic effects; Central nervous system, Liver and Blood disorders.
4.3 Indication of any immediate medical attention and special treatment needed	Treat symptomatically. Treatment by an ophthalmologist due to possible caustic burn of the eyes may be required.

5. SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media Suitable Extinguishing Media Unsuitable extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or waterspray. Do not use water jet.
5.2 Special hazards arising from the substance or mixture	May decompose in a fire giving off toxic fumes. Carbon monoxide, 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. Vapour may create explosive atmosphere.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Shut off leaks if without risk. Avoid breathing vapours. Wear protective gloves/protective clothing/eye protection/face protection.
6.2 Environmental precautions	Do not allow to enter drains, sewers or watercourses.
6.3 Methods and material for containment and cleaning up	Absorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. 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	Ensure adequate ventilation. Do not breathe vapour. In case of inadequate ventilation wear respiratory protection. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Remove contaminated clothing and wash clothing before reuse.
7.2 Conditions for safe storage, including any incompatibilities Storage temperature Storage life Incompatible materials	Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight. Ideal storage temperature is (°C): <30°C Stable under normal conditions. Reacts violently with - Strong oxidising agents, Alkalis, Acids and Amines
7.3 Specific end use(s)	Adhesives.

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8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Calcium carbonate -inhalable dust -respirable	1317-65-3	- -	10 4	- -	- -	WEL: Workplace Exposure Limit (UK HSE EH40).

8.1.2 Biological limit value Not established.

8.1.3 PNECs and DNELs

DNEL bisphenol-A-(epichlorhydrin)	Oral	Inhalation	Dermal
Industry - Long Term - Systemic effects	-	12.25 mg/m ³	8.33 mg/kgbw/day
Industry - Short term - Systemic effects	-	12.25 mg/m ³	8.33 mg/kgbw/day
Consumer - Long Term - Systemic effects	0.75mg/kg bw/day	-	3.57mg/kgbw/day
Consumer - Short term - Systemic effects	0.75mg/kg bw/day	-	3.57mg/kgbw/day

PNEC	bisphenol-A-(epichlorhydrin)
Aquatic Compartment	PNEC aqua (freshwater) 0.006 mg/L PNEC aqua (marine water) 0.0006 mg/L PNEC aqua (intermittent releases) 0.018 mg/L PNEC STP 10 mg/L PNEC sediment (freshwater/marine water) 0.0996 mg/kg sediment dw
Terrestrial Compartment	PNEC soil 0.196 mg/kg soil dw

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit.

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

Use personal protective equipment as required. Wash contaminated clothing before reuse. Avoid contact with skin and eyes. Have available eyewash bottle with clean water.

Eye/face protection



Wear goggles giving complete protection to eyes to protect against liquid splashes (EN166).

Skin protection



Wear impervious gloves (EN374). Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Unsuitable gloves materials

Respiratory protection



In case of inadequate ventilation wear respiratory protection. A suitable dust mask or dust respirator with filter type A/P may be appropriate.

Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

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9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Black Liquid
Odour	Ether-like Odour
Odour Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	ca. 320°C (bisphenol-A-(epichlorhydrin))
Initial boiling point and boiling range	>260°C (Mixture)
Flash point	>93°C [Closed cup]
Evaporation Rate	<1
Flammability (solid, gas)	Non-flammable
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	<0.1 mmHg @ 20°C
Vapour density	Not available.
Relative density	1.51 g/cm ³ (H ₂ O = 1) (Mixture)
Solubility(ies)	Slightly soluble in: Water (Mixture)
Partition coefficient: n-octanol/water	log Pow \geq 2.918 (bisphenol-A-(epichlorhydrin))
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not oxidising.

9.2 Other information

None.

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Epoxy resins release phenolics, carbon monoxide, and water.
10.4 Conditions to avoid	Avoid contact with heat and ignition sources and oxidizers.
10.5 Incompatible materials	Reacts violently with - Strong oxidising agents, Alkalis, Acids and Amines
10.6 Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, phenolics.

11. SECTION 11: TOXICOLOGICAL INFORMATION

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

Acute toxicity

Ingestion	Not classified.
Inhalation	Not classified.
Skin Contact	Skin Sens. 1; May cause sensitization by skin contact.
Eye Contact	Causes serious eye damage.
Irritation	Skin Irrit. 2; Slightly irritant.
Corrosivity	Eye Dam. 1; Causes serious eye damage. (Limestone)
Sensitisation	Skin Sens. 1; (mouse LLNA) (bisphenol-A-(epichlorhydrin))

Repeated dose toxicity

Carcinogenicity

Mutagenicity

Toxicity for reproduction

Not classified.
No evidence of carcinogenicity.
There is no evidence of mutagenic potential.
Not classified.

11.2 Other information

None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	bisphenol-A Classified as a Marine Pollutant. bisphenol-A Oncorhynchus mykiss Fish: LC50 = 1.2 mg/L (96h) bisphenol-A Daphnia magna Aquatic invertebrates: LC50 = 2.7 mg/L (48h)
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12.2	Persistence and degradability	Part of the components are 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.
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	This material and its container must be disposed of as hazardous waste. (2001/118EC). 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	UN
14.2	Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin)
14.3	Transport hazard class(es)	9
14.4	Packing group	III
14.5	Environmental hazards	Marine Pollutant / Environmentally hazardous substance
14.6	Special precautions for user	Causes serious eye damage.
14.7	Transport in bulk according to Annex II of MARPOL73/78 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	EU regulations	
	Authorisations and/or Restrictions On Use	None.
15.1.2	National regulations	None known.
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 for reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700) (CAS# 25068-38-6), the Classification and Labelling Inventory for Limestone (CAS# 1317-65-3) and 2-Ethyl-2-(hydroxymethyl)-1,3- Propanediol polymer with (chloromethyl)oxirane (CAS# 30499-70-8).

Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP)	Classification Procedure
Skin Irrit. 2; H315	Harmonised Classification
Skin Sens. 1; H317	Harmonised Classification
Eye Dam. 1; H318	Threshold Calculation
Aquatic Chronic 3; H412	Threshold Calculation

LEGEND

LTEL Long Term Exposure Limit
STEL Short Term Exposure Limit

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DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	vPvT: very Persistent and very Toxic
OECD	Organisation for Economic Cooperation and Development

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.