

SAFETY DATA SHEET

Version: 2.0
Date of Issue: 08 May 2017
Date of First Issue: 20 March 2012


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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label	M-Bond A-12 Part A
Other means of identification	Not applicable
Recommended use of the chemical and restrictions on use	
Recommended use	Adhesives.
Restrictions on use	None known.
Details of the supplier of the safety data sheet	
Supplier	VISHAY MEASUREMENTS GROUP, INC.
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	+1 919-365-3800
Fax	+1 919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com
Emergency telephone number	1-800-424-9300 CHEMTREC (24 hours)

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200	
Physical hazards	Not classified
Health hazards	Skin Corrosion/Irritation, Category 2 Skin Sensitisation, Category 1 Eye Irritation, Category 2 Carcinogen, Category 1A Specific target organ toxicity — repeated exposure, Category 1
Environmental hazards	Hazardous to the aquatic environment, Chronic, Category 2
Hazard Symbol	
Signal Word(s)	DANGER
Hazard Statement(s)	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause cancer. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.
Precautionary Statement(s)	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapour. Wash hands and exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

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lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, get medical advice/attention.
IF exposed or concerned: Call a POISON CENTER/doctor.

Other hazards

Contains epoxy constituents. May produce an allergic reaction.

Percent of the mixture consists of ingredient(s) of unknown acute toxicity: 0%

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)	>60	25068-38-6	500-033-5	Skin Corrosion/Irritation, Category 2 Skin Sensitisation, Category 1 Eye Irritation, Category 2 Hazardous to the aquatic environment, Chronic, Category 2
Quartz (crystalline silica)	<10	14808-60-7	238-878-4	Carcinogen, Category 1A Specific target organ toxicity — repeated exposure, Category 1 Specific target organ toxicity — single exposure, Category 3
Alumina/Aluminium Oxide	<10	1344-28-1	215-691-6	Not classified
Iron(II) Oxide, Hydrate	<5	51274-00-1	257-098-5	Not classified

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Self-protection of the first aider

Do not breathe vapour. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Avoid all contact.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if necessary. Call a POISON CENTER/doctor.

Skin Contact

IF ON SKIN (or hair): Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation occurs, get medical advice/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. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Do not give anything by mouth to an unconscious person. Do not induce vomiting. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.

Most important symptoms and effects, both acute and delayed

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Unsuitable extinguishing Media

Special hazards arising from the substance or mixture

Special protective equipment and precautions for fire fighters

Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Do not use water jet.

May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide.

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Environmental precautions

Methods and material for containment and cleaning up

Ensure adequate ventilation. Avoid all contact. Do not breathe vapour. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Ensure suitable personal protection during removal of spillages. See Section: 8.

Do not allow to enter drains, sewers or watercourses. (Marine Pollutant)

Adsorb 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.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Conditions for safe storage, including any incompatibilities

Storage temperature

Storage Life

Incompatible materials

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Avoid all contact. Do not breathe vapour. In case of inadequate ventilation wear respiratory protection. 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.

Keep away from heat and direct sunlight.

Ambient. 2 - 43 °C

Stable under normal conditions.

Keep away from: Oxidizing agents, unintended contact with amines, Strong Acids and Alkalis.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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
Quartz (SiO ₂) (crystalline silica)	14808-60-7	-	0.05	-	-	NIOSH
		-	30	-	-	OSHA Total Dust
		-	10	-	-	Respirable Dust
		-	0.025	-	-	ACGIH, A2
Aluminium Oxide	1344-28-1	-	15	-	-	NIOSH, OSHA Total Dust
		-	5	-	-	Respirable Dust

Note: OSHA PELs 1910.1000 TABLE Z-1/3/ NIOSH RELs / ACGIH TLVs

A2: Suspected Human Carcinogen: Human data are accepted as adequate in quality but are conflicting or insufficient to classify the agent as a confirmed human carcinogen; OR, the agent is carcinogenic in experimental animals at dose(s) , by route(s) of exposure, at site(s), of histological type(s), or by mechanism(s) considered relevant to worker exposure. The A2 is primarily when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans.

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The other components listed in Section 3 do not have occupational exposure limits.

Biological Exposure Indices

Not established

Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled using the principles of good occupational hygiene practice. Guarantee that the eye flushing systems and safety showers are located close to the working place.

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

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

Eye/face protection



Wear eye protection with side protection. Do not wear contact lenses when working with this material.

Skin protection



Hand protection:

Wear impervious gloves. 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



Normally no personal respiratory protection is necessary. Wear suitable respiratory protective equipment if exposure to high levels of material are likely.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Brown Viscous liquid.
Odor	Faint Epoxy Odour
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	-16 °C (bisphenol-A)
Initial boiling point and boiling range	~320°C (bisphenol-A)
Flash Point	>= 264 <= 268°C (bisphenol-A)
Evaporation rate (Butyl acetate = 1)	Not available.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.26 (H2O = 1) (Mixture)
Solubility(ies)	Not available.
Partition coefficient: n-octanol/water	>= 2.64 <= 3.78 log Pow (25 °C) (bisphenol-A)
Auto-ignition temperature	Not applicable.
Decomposition Temperature	>350°C (bisphenol-A)
Viscosity	Not available.

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SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Combustion or thermal decomposition will evolve toxic and irritant vapours.
Conditions to avoid	The product may decompose if heated to temperatures above (°C): 300
Incompatible materials	Oxidizing agents, Corrosive Substances, Reducing agent, Strong Acids and Alkalis. Reacts with amines.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Phenolic, Carbon monoxide, Carbon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

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.
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
Acute toxicity - 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 Corrosion/Irritation, Category 2; Causes skin irritation.
Serious eye damage/irritation	Eye Irritation, Category 2; Causes serious eye irritation.
Respiratory or skin sensitization	Skin Sensitisation, Category 1; May cause an allergic skin reaction.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Carcinogen, Category 1A; May cause cancer
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Specific target organ toxicity — repeated exposure, Category 1; Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

Information on likely routes of exposure

Inhalation	Possible – accidental exposure.
Ingestion	Unlikely – accidental exposure.
Skin Contact	Possible – accidental exposure.
Eye Contact	Unlikely – accidental exposure.

Early onset symptoms related to exposure Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

Delayed health effects from exposure May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Other information

NTP Report on Carcinogens	Quartz (SiO ₂) (crystalline silica): Group K: Known To Be Human Carcinogens
IARC Monographs	Quartz (SiO ₂) (crystalline silica): Group 1 - Carcinogenic to humans
OSHA Designated Carcinogen	All chemicals are not listed

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic Chronic 2: Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 >1 ≤ 10 mg/l (Fish) 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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Persistence and degradability	Part of the components are poorly biodegradable.
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product is predicted to have low mobility in soil. (Insoluble in water.)
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

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.
Additional Information	Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA
UN number	UN 3082	UN 3082	UN 3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin)
Transport hazard class(es)	9	9	9
Packing group	III	III	III
Environmental hazards	Environmentally hazardous substance	Classified as a Marine Pollutant.	Environmentally hazardous substance
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.		
Special precautions for user	See Section: 2		

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal Regulations

TSCA (Toxic Substance Control Act)

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight < 700); Exempt from reporting under CDR
Quartz (SiO₂) (crystalline silica): Subject to 25,000 lb reporting threshold
Aluminium Oxide: Subject to 25,000 lb reporting threshold
Iron(II) Oxide, Hydrate: Subject to 25,000 lb reporting threshold
All chemicals are not listed

EPCRA/SARA Section 302 Extremely Hazardous Substances

EPCRA Section 313 Toxics Release Inventory (TRI) Program

Aluminium Oxide: De Minimis limit: 1%

NIOSH Occupational Carcinogen List

Quartz (SiO₂) (crystalline silica)

OSHA List of highly hazardous chemicals, toxics and reactives

All chemicals are not listed

NTP Report on Carcinogens (RoC) List

Quartz (SiO₂) (crystalline silica)

Poison Prevention Packaging Act

All chemicals are not listed

US State Regulations

California State, Proposition 65 List

All chemicals are not listed

California State, Safer Consumer Products Regulations

Quartz (SiO₂) (crystalline silica): Candidate Chemicals List

Maine State, Toxic Chemicals in Children's Products Act

Quartz (SiO₂) (crystalline silica): COC list. CHC list

New Jersey State Worker and Community RTK Act

Quartz (SiO₂) (crystalline silica): RTKHSL. SHHSL

Aluminium Oxide: RTKHSL

Pennsylvania State, Worker and Community RTK Act

Quartz (SiO₂) (crystalline silica): Hazardous Substance List

Aluminium Oxide: Hazardous Substance List. Environmental Hazard List

Rhode Island State, Hazardous Substances RTK Act

Quartz (SiO₂) (crystalline silica): Hazardous Substance List

Aluminium Oxide: Hazardous Substance List

Non-Regional

IARC Monographs, List of Classifications

Quartz (SiO₂) (crystalline silica): Group 1

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SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification. New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

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References:

Existing Safety Data Sheet (SDS) and EU Data: Existing ECHA registration(s) for bisphenol-A-(epichlorhydrin) (CAS# 25068-38-6).

Literature References:

1. Silica, Some Silicates, Coal Dust and para-Aramid Fibrils, IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS, Volume 68 (1997)
2. Ziskind M, Jones RN, Weill H, 1976, Silicosis. American review of respiratory disease, 113:643–665.

GHS Classification of the substance or mixture	Classification Procedure
Skin Corrosion/Irritation, Category 2	Threshold Calculation
Skin Sensitisation, Category 1	Threshold Calculation
Eye Irritation, Category 2	Threshold Calculation
Carcinogen, Category 1A	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 1	Threshold Calculation
Hazardous to the aquatic environment, Chronic, Category 2	Summation Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
BEI: Biological Exposure Indices (ACGIH)
IARC: International Agency for Research on Cancer
Irr: Irritation
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: The Occupational Safety & Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PEL: Permissible exposure limit

REL: Recommended exposure limit
SCL: Specific Concentration Limit
Skin^o: Risk of overexposure via dermal contact
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
URT: Upper respiratory tract
vPvB: very Persistent and very Bioaccumulative

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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