

SAFETY DATA SHEET



Date Prepared : 09/17/2013
MSDS No : MB100AGHS
Date Revised : 04/20/2015
Revision No : 2

Barco Bond MB-100 Part A

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Barco Bond MB-100 Part A
GENERAL USE: Adhesive System
PRODUCT CODE: Modified Epoxy Resin: Part 1 of 2

MANUFACTURER

Astro Chemical Company, Inc.
 www.astrochemical.com
 PO Box 1250, 3 Mill Road Extension
 Ballston Lake, NY 12019
Product Stewardship: 518-399-5338
E-Mail: sales@astrochemical.com

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (US Transportation) : (800) 424 - 9300

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Skin Sensitization, Category 1
 Skin Corrosion, Category 2
 Eye Irritation, Category 2A
 Specific Target Organ Toxicity (respiratory irritation), Category 3

Environmental:

Chronic Hazards to the Aquatic Environment, Category 2

GHS LABEL



Exclamation mark Environment

SIGNAL WORD: WARNING

HAZARD STATEMENTS

H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.
 H335: May cause respiratory irritation.
 H411: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENT(S)

Prevention:

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
 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.

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Response:

P302+P352: IF ON SKIN: Wash with plenty of 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.
 P337+P313: If eye irritation persists: Get medical advice/attention.
 P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P363: Wash contaminated clothing before reuse.

Storage:

P405: Store locked up.

Disposal:

7451FZ1V: Dispose of contents/container in accordance with local/regional/national/international regulations.

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Viscous liquid.

IMMEDIATE CONCERNS: Warning! Causes eye and skin irritation. May cause allergic skin reaction. May cause respiratory tract irritation. Heated material can cause thermal burns.

POTENTIAL HEALTH EFFECTS

EYES: Contact may cause eye irritation.

SKIN: Irritating to skin. May cause sensitization by skin contact.

INGESTION: Not expected to be harmful under normal conditions of use.

INHALATION: Slightly irritating to the respiratory system.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: Not Available

TERATOGENIC EFFECTS: Not Available

CARCINOGENICITY: Refer to Section 11 for additional details regarding this statement.

MUTAGENICITY: Not Available

MEDICAL CONDITIONS AGGRAVATED: Pre-existing skin disorders may be aggravated by over-exposure to this product.

SENSITIZATION: Has caused allergic skin reactions in humans. Did not cause allergic skin reactions when tested in mice.

COMMENTS: The data show that the properties of the substance do not meet the specific criteria detailed in Annex XIII and, consequently, that the substance is not considered a PBT/vPvB.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt. %	CAS
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	60 - 100	25068-38-6
Silica, Amorphous, Fumed	7 - 13	112945-52-5

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4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

INGESTION: Get immediate medical attention. Do not induce vomiting unless instructed to do so by poison center or physician.

INHALATION: Move exposed person to fresh air. Keep person warm and at rest. If breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if adverse health effects persist or are severe.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Adverse symptoms may include the following: pain or irritation, watering, redness.

SKIN: Adverse symptoms may include the following: irritation, redness

INGESTION: No known significant effects or critical hazards.

INHALATION: Adverse symptoms may include the following: respiratory tract irritation, coughing.

ACUTE TOXICITY: Not Established

CHRONIC EFFECTS: Not Available

NOTES TO PHYSICIAN: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

HAZARDOUS COMBUSTION PRODUCTS: Decomposition products may include the following materials: Carbon oxides

EXPLOSION HAZARDS: In a fire or if heated, a pressure increase will occur and the container may burst.

FIRE FIGHTING PROCEDURES: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

FIRE FIGHTING EQUIPMENT: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

FIRE EXPLOSION: None known.

SENSITIVE TO STATIC DISCHARGE: None known.

SENSITIVITY TO IMPACT: None known.

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6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Stop leak if without risk. Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

GENERAL PROCEDURES: Do not touch or walk through spilled material. Use appropriate personal protective equipment.

7. HANDLING AND STORAGE

HANDLING: Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Empty containers retain product residue and can be hazardous. Do not reuse container. Refer to Section 8 for additional information.

STORAGE: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area. Keep container tightly closed and sealed until ready for use.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	TWA	Not Established	Not Established	Not Established	Not Established	Not Established	Not Established
	STEL	Not Established	Not Established	Not Established	Not Established	Not Established	Not Established
Silica, Amorphous, Fumed	TWA	Not Available ^[1]	6 ^[1]	Not Available ^[1]	10 ^[1]	Not Established	Not Established
Footnotes:							
1. Inhalable							

ENGINEERING CONTROLS: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapors or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep workers exposure to airborne contaminants below any recommended or statutory limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

SKIN: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

RESPIRATORY: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

WORK HYGIENIC PRACTICES: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Ensure that eyewash stations and safety showers are close to the workstation.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Paste
ODOR: Mild
ODOR THRESHOLD: Not Available
APPEARANCE: Paste
COLOR: White to Translucent
pH: Not Available
PERCENT VOLATILE: Not Available
FLASH POINT AND METHOD: > 150°C (302°F) Pensky-Martens Closed Cup
FLAMMABLE LIMITS: Not determined
AUTOIGNITION TEMPERATURE: > 300°C (572°F)
VAPOR PRESSURE: < 0.01 Pa at 20°C (68°F)
VAPOR DENSITY: Not Available
BOILING POINT: > 200°C (392°F)
FREEZING POINT: Not Available
MELTING POINT: Not Available
THERMAL DECOMPOSITION: Not Available
SOLUBILITY IN WATER: Negligible
EVAPORATION RATE: Not Available
SPECIFIC GRAVITY: > 1.17
VISCOSITY: Not Available
COEFF. OIL/WATER: LogPOW 3
OXIDIZING PROPERTIES: Not considered an oxidizing agent.

10. STABILITY AND REACTIVITY

REACTIVITY: Yes
HAZARDOUS POLYMERIZATION: Product will not undergo hazardous polymerization.
STABILITY: This product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
CONDITIONS TO AVOID: Oxidizing materials.
POSSIBILITY OF HAZARDOUS REACTIONS: Reacts with considerable heat release with some curing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products may include the following materials:
Carbon oxides.
INCOMPATIBLE MATERIALS: Reactive or incompatible with the following materials: oxidizing materials, strong acids, strong alkalis.

11. TOXICOLOGICAL INFORMATION

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ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	~ 30000 mg/kg RAT	> 2000 mg/Kg RAT	No Data Available.
Silica, Amorphous, Fumed	≥ 5000 mg/kg RAT	> 2000 mg/Kg Rabbit	No Data Available.

EYE EFFECTS: May cause eye irritation.

SKIN EFFECTS: May cause skin sensitization.

CHRONIC: Not Available

CARCINOGENICITY

Chemical Name	NTP Status	IARC Status	OSHA Status
4,4'-Isopropylidenediphenol-Epichlorohydrin Copolymer	Not Listed	Not Classified	Not Regulated
Silica, Amorphous, Fumed	Not Listed	Not Classified	Not regulated

Notes: Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBA is carcinogenic.

REPEATED DOSE EFFECTS: Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to cause any significant adverse effects.

IRRITATION: In an OECD No. 404 study conducted on the rabbit with a 4 hr occlusive exposure scores for erythema and oedema were minimal. Therefore, this material is not a skin irritant. In other studies conducted with the rabbit a 4 hr occlusive exposure was used. Maximum erthema and oedema scores observed under these extreme conditions were 1.5-2 and 1-1.5 respectively.

CORROSIVITY: Not Available

SENSITIZATION: Has caused allergic skin reactions in humans. Did not cause allergic skin reactions when tested in mice.

NEUROTOXICITY: Not Available

GENETIC EFFECTS: In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

REPRODUCTIVE EFFECTS: No adverse reproductive effects were observed in an OECD Test Guideline no. 416 GLP two-generation rat oral gavage study conducted up to a high does level of 750 mg/kg/day that resulted in adult body weight decrements.

TARGET ORGANS: Not Available

TERATOGENIC EFFECTS: This material did not induce any evidence of development toxicity in rats and rabbits exposed by oral gavage or in rabbits treated by the dermal route in OECD Test Guideline no. 414 GLP studies.

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The oral gavage studies were conducted up to a high dose level of 180 mg/kg/day that produced maternal toxicity base on decreased body weight gain. The rabbit dermal study was conducted up to a high dose of 300 mg/kg/day that induced maternal toxicity based on reduced body weight gain.

MUTAGENICITY: Not Available

SYNERGISTIC MATERIALS: Not Available

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: No known applicable information

ECOTOXICOLOGICAL INFORMATION: Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

BIOACCUMULATION/ACCUMULATION: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

OECD Biodegradation Tests:

Biodegradation = 12%; Exposure Time = 28d; Method = OECD 302B Test

DISTRIBUTION: The KOCWIN QSAR estimated adsorption/desorption coefficient Log Koc = 2.65 suggesting moderated sorption to organic matter and limited soil mobility.

AQUATIC TOXICITY (ACUTE)

96-HOUR LC₅₀: 3.1 [mg/L]; 96 hr; Fathead minnow (*Pimephales promelas*)

48-HOUR EC₅₀: ~ 2.1 [mg/L]; 48 hr; water flea *Daphnia magna*

96-HOUR EC₅₀: > 11 (*Pseudokirchneriella subcapitata*); 73 hr; OECD 201

CHEMICAL FATE INFORMATION: The level of biodegradation in an "enhanced" OECD 301F study was 5% within the 28 day contact period. Biodegradation reached 6-12 % after 28 days of contact in an OECD test guideline no. 301B study. Therefore, this product is not readily biodegradable under the conditions of the studies.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

PRODUCT DISPOSAL: Do not pour into drains or waterways.

EMPTY CONTAINER: Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way.

EUROPEAN WASTE CATALOGUE: This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

14. TRANSPORT INFORMATION

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Barco Bond MB-100 Part A

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Environmentally hazardous substance, Liquid, N.O.S.
TECHNICAL NAME: Bisphenol A Epoxy Resin
PRIMARY HAZARD CLASS/DIVISION: 9
UN/NA NUMBER: 3082
PACKING GROUP: III
NAERG: 171
REPORTABLE QUANTITY (RQ) UNDER CERCLA: No
U.S. SURFACE FREIGHT CLASS: Non-Restricted as per 49 CFR 171.4 (Rev. Oct 2014).
BULK FREIGHT CLASS: Fully Regulated in bulk quantities.
PLACARDS: Placards required for Bulk shipments only.
LABEL: Class 9; Environmentally Hazardous Label
MARINE POLLUTANT #1: Yes

AIR (ICAO/IATA)

SHIPPING NAME: Environmentally hazardous substance, Liquid, N.O.S.
TECHNICAL NAME: Bisphenol A Epoxy Resin
UN/NA NUMBER: 3082
PRIMARY HAZARD CLASS/DIVISION: 9
PACKING GROUP: III
ERG: 171
SPECIAL PROVISIONS: A97; A158; A197
PLACARDS: Required for Bulk packaging only.
LABEL: Class 9; Environmentally Hazardous label
NOTE: As per IATA 56th Edition Special Provision A197, packages with inners containing 5 liters or less may be shipped as Non-Restricted when the packaging requirements of this Code have been satisfied.

VESSEL (IMO/IMDG)

SHIPPING NAME: Environmentally hazardous substance, Liquid, N.O.S.
TECHNICAL NAME: Bisphenol A Epoxy Resin
UN/NA NUMBER: 3082
PRIMARY HAZARD CLASS/DIVISION: 9
PACKING GROUP: III
LIMITED QUANTITY: Yes
EmS: F-A, S-F
MARINE POLLUTANT #1: Yes
PLACARDS: Required for Bulk Containers and CPU's.
LABEL: Class 9; Environmentally Hazardous Label
SPECIAL PROVISIONS: 274; 335; 969

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NOTE: Non-Restricted as per IMDG 2014 Edition Section 2.10.2.7 in quantities of 5 liters or less per inner when packaging requirements of Code are met.

COMMENTS: The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: Immediate (acute) health hazard

FIRE: No **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** No

313 REPORTABLE INGREDIENTS: None

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: None above reporting de minimis.

EPA

EPA RQ INGREDIENT: None Expected.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS: All components are listed or exempted.

CALIFORNIA PROPOSITION 65: No California Proposition 65 listed chemicals are known to be present.

CANADA

WHMIS HAZARD SYMBOL AND CLASSIFICATION



Toxic

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

WHMIS CLASS: Class D-2B: Material causing other toxic effects (Toxic).

DOMESTIC SUBSTANCE LIST (INVENTORY): The ingredients of this product are listed on the Domestic Substance List, Non-Domestic Substance List or are exempt.

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16. OTHER INFORMATION

APPROVED BY: MSDS Department

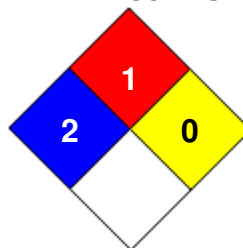
PREPARED BY: MSDS Department **Date Revised:** 04/20/2015

REVISION SUMMARY: This MSDS replaces the 01/13/2015 MSDS. Revised: **Section 4:** ACUTE TOXICITY, CHRONIC EFFECTS. **Section 9:** THERMAL DECOMPOSITION. **Section 12:** AQUATIC TOXICITY (ACUTE) (96-HOUR EC₅₀, 96-HOUR EC₅₀, 96-HOUR EC₅₀). **Section 13:** EMPTY CONTAINER. **Section 14:** COMMENTS.

HMIS RATING

HEALTH	<input type="text"/>	2
FLAMMABILITY	<input type="text"/>	1
PHYSICAL HAZARD	<input type="text"/>	0
PERSONAL PROTECTION	<input type="text"/>	

NFPA CODES



MANUFACTURER SUPPLEMENTAL NOTES: Information Phone Number: (518) 399-5338

ADDITIONAL MSDS INFORMATION: Safety Data Sheet prepared in accordance with UNECE Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Fourth revised edition.

MANUFACTURER DISCLAIMER: The information provided herein was believed by Astro Chemical Company, INC. to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of this product and to determine the suitability of the product for its intended use.