**BLACK EPOXY ENCAPSULATING AND POTTING COMPOUND 832B-PART A**

# Safety Data Sheet

## Section 1: Product and Company Identification

**Product Name:** Black Epoxy Encapsulating and Potting Compound

**MSDS Code:** 832B–Part A

**Related Part #:** 832B-375ML, 832B-3L, 832B-60L

**Use:** Epoxy resin for use with hardeners to pot devices or encapsulate components

**Uses Advised Against:** Not for use as a spray coating

**Emergency Contact**

USA or CANADA: Call CHEMTREC ☎: 1-800-424-9300 (**for hazardous material incidents ONLY**—leaks, spills, fires, exposures or accidents)

CANADA: Call CANUTEC ☎: 1-613-996-6666 or *666 on cellular phones, Collect 24/7 (**for emergencies involving dangerous goods**)

**Manufacturer:** MG Chemicals (Head Office), 9347–193 Street, Surrey, B.C., V4N 4E7

**Technical Contacts:** ☎ 1-800-201-8822 **FAX** 1-800-708-9888

**E-MAIL:** support@mgchemicals.com **WEB** www.mgchemicals.com

## Section 2: Hazards Identification

**WHMIS Classification**

D2A – Very Toxic (Carcinogenicity IARC: 2B); D2B – Toxic Material (Skin/Eye Irritation; Skin Sensitization in Humans)

***Note:*** The possible carcinogenicity warning applies to inhalable dust. Aerosolization and misting should be avoided and are not expected to occur for normal uses.

**GHS Pictograms**

Signal Word
WARNING

*Continued on the next page*

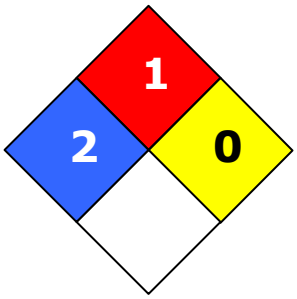
### GHS Categories

| Criteria | | Category | Signal Word | Pictograms |
|---|---|---|---|---|
| Sensitization | Skin sensitizer | 1 | Warning |  |
| Skin Irritation | | 2A | Warning | |
| Eye Irritation | | 2 | Warning | |
| Carcinogenicity | | 2 | Warning |  |
| Environmental Hazard | Chronic Aqua. Tox. | 2 | Warning |  |
| Environmental Hazard | Acute Aqua. Tox. | 2 | — | |

### HMIS® RATING

| | |
|---|---|
| **HEALTH:** | **2** |
| **FLAMMABILITY:** | **1** |
| **PHYSICAL HAZARD:** | **0** |
| **PERSONAL PROTECTION:** | |

### NFPA® 704 CODES




*Approximate HMIS and NFPA Risk Ratings Legend*:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

### Physical Hazards

*GHS Code: Hazard Statement*
none

### Health Hazards

*GHS Code: Hazard Statement*
H319: Causes serious eye irritation

H315: May cause skin irritation

H317: May cause allergic skin reaction

H351: Suspected of causing cancer

### Environmental Hazards

*GHS Code: Hazard Statement*
H411: Toxic to aquatic life with long lasting effects

*Continued on the next page*

**Other Hazards**

Not applicable

**Precautionary Statements**

P280: Wear protective gloves/eye protection.

P260: Do not breathe fume/gas/vapors/spray.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302 + P352 + P361 + P353: IF ON SKIN: Wash with plenty of water. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

**Exposure Routes and Symptoms Summary**

| | |
|---|---|
| **Eyes** | Causes serious eye irritation. May also cause eye redness or pain. |
| **Skin** | May cause mild to moderate skin irritation and allergic skin reactions. |
| **Inhalation** | May cause nose, throat and lung irritation. |
| **Ingestion** | No acute toxicity effect known. See skin and inhalation symptoms. |
| **Chronic** | Prolonged or repeated exposure to the uncured epoxy resins used may cause dermatitis and sensitization.<br>Long term exposure to carbon black dust or mist may cause cancer. |

## Section 3: Hazardous Ingredients

| CAS # | Chemical Name | Wt% |
|---|---|---|
| 25068-38-6 | reaction products: bisphenol-A-(epichlorhydrin) and epoxy resin average MW ≤700 | 80–95% |
| 68609-97-2 | Alkyl glycidyl ether | 7–13% |
| 28064-14-4 | epoxy phenol novolac resin | 1-5% |
| 1333-86-4 | carbon black | 0.1–1% |

## Section 4: First Aid Measures

| *Exposure Condition* | *GHS Code: Precautionary Statement* |
|---|---|
| **IF IN EYES** | P305 |
| **Symptoms** | Immediate: *irritation, redness, pain* |
| **Response** | P351: Rinse cautiously with water for several minutes.<br>P338: Remove contact lenses, if present and easy to do. Continue rinsing. |
| **If eye irritation persists** | P313: Get medical attention. |
| **IF ON SKIN** | P302 |
| **Symptoms** | Immediate: *irritation, redness*;<br>Delayed: *rash* |
| **Response** | P352: Wash with plenty of water.<br>P362+ P364 + P272: Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. |
| **If skin irritation, rash occurs, or concerned** | P313: Get medical advice/attention. |
| **IF INHALED** | P304 (*Not a likely route of exposure under normal use*) |
| **Symptoms** | Immediate: *cough, respiratory system irritation* |
| **Response** | P340: Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. |
| **If feeling unwell** | P312: Call a POISON CENTRE/doctor. |
| **IF SWALLOWED** | P301 (*Not a likely route of exposure under normal use*) |
| **Symptoms** | Immediate: *irritation* |
| **Response** | P330: Rinse mouth.<br>P331: Do NOT induce vomiting. |
| **If feeling unwell** | P312: Call a POISON CENTRE/doctor. |

*Note:* GHS codes and corresponding precaution statements are used when available.

## Section 5: Fire Fighting Measures

| | | | | | |
|---|---|---|---|---|---|
| **Autoignition Temperature** | Not Established | **Flash Point** [a)] | >142 °C [>287 °F] | **LFL [LEL]**[b)] **UFL [UEL]** | Not Established |

| | |
|---|---|
| **In case of fire** | P370 |
| **Response** | P378: Use dry chemical, carbon dioxide, or chemical foam to extinguish. Use water spray to cool containers. |
| **Combustion Products** | Produces CO, $CO_2$, silicone oxides, and toxic fumes. |
| **Fire-Fighter** | Wear self-contained breathing apparatus for fire fighting |
| **General Information** | Prevent fire-fighting wash from entering waterway or sewer system. |

*Note:* The GHS codes and the GHS precaution statements are used. The format is *GHS Codes: Statements*.

a) Closed cup value for the alkyl glycidyl ether resin component.

b) LFL = Lower Flammability [or Explosion] Limit (in volume %);
UFL = Upper Flammability [or Explosion] Limit (in volume %)

## Section 6: Accidental Release Measures

**Personal Protection:** See Section 8. Avoid breathing the mist/vapors.

**Containment** Remove all sources of ignition.

**Cleaning** Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe up further residue with paper towel wetted with alcohol (or other suitable organic solvent) and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.

**RECOMMENDATION:** Use a plastic, stainless steel, or carbon steel container.

**Disposal** Dispose of spill waste according to Section 13.

## Section 7: Handling and Storage

**Prevention** P262: Do not get in eye, on skin, or on clothing.

P261 + P271 + P284: Avoid breathing fume/vapors. Use only outdoors or in well ventilated area. In cases of inadequate ventilation wear respiratory protection.

P270: Do not eat, drink, or smoke when using this product.

**Handling** P280: Wear protective gloves/clothing/eye protection.

P264: Wash hands thoroughly after handling.

**Storage** P403 + P233+ P235: Keep Container tightly closed. Store in a well-ventilated area. Keep cool.

**RECOMMENDATION:** Keep in a dry and clean area, away from incompatible substances.

## Section 8: Exposure Controls/Personal Protection

### Routes of Entry

Eyes, ingestion, inhalation, and skin

### Substances with Occupational Exposure Limit Values

| Chemical Name | Country | Long Term Exposure Limits (PEL) | Short Term Exposure Limits (STEL) |
|---|---|---|---|
| Carbon black [a)] | ACGIH<br>U.S.A. OSHA PEL<br>Canada AB<br>Canada BC<br>Canada ON<br>Canada QC | 3.5 mg/m$^3$<br>3.5 mg/m$^3$<br>3.5 mg/m$^3$<br>3 mg/m$^3$<br>3.5 mg/m$^3$<br>3.5 mg/m$^3$ | —<br>—<br>—<br>—<br>—<br>— |

*Note:* Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[2], OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database[1] of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Respirable airborne particles

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## Engineering Controls

**Ventilation**

Keep airborne concentrations below exposure limits. Because carbon black is bound to the liquid mixture; the airborne hazard is present only if the conditions of use result in aerosolization or misting.

**RECOMMENDATION:** If the product is heated at high temperatures or worker has a known allergic reaction, consider using a full mask with organic vapor cartridges.

## Personal Protective Equipment

**Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

**RECOMMENDATION:** Use safety glasses with lateral protection (side shields).

**Skin Protection**

Wear appropriate protective clothing to prevent skin contact.

**RECOMMENDATION:** Use of protective gloves in butyl rubber, latex, neoprene, or other chemically resistant gloves.

**Respiratory Protection**

If exposed to mist, wear respirator such as a half-mask respirator.

**RECOMMENDATION:** Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

## General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

## Section 9: Physical and Chemical Properties

| | | | | | |
|---|---|---|---|---|---|
| **Physical State** | Liquid | **Odor** | Mild | **Odor Threshold** | Not established |
| **Appearance** | Black | **Specific Gravity** | 1.13 | **Freezing Point** | Not established |
| **Boiling Point** | ≥216°C [≥421 °F] | **Vapor Pressure @ 20 °C** | Not established | **Evapora-tion Rate** | Not established |
| **Autoignition Temperature** | Not established | **Flash Point**[a)] | >142°C [>288 °F] | **Vapor Density** | >1 (Air = 1) |
| **Lower Flammability Limit** | Not established | **Upper Flammability Limit** | Not established | **Decompos-ition Temp.** | Not available |
| **Viscosity @25 °C** | 2000 cSt | **Partition Coefficient** | Not established | **Solubility in Water** | Negligible |
| **pH** | Not available | | | | |

a) The closed cup flash point values are based on the alkyl glycidyl ether resin component.

## Section 10: Stability and Reactivity

| | |
|---|---|
| **Stabilities** | Chemically stable at normal temperatures and pressures |
| **Conditions to Avoid** | Ignition sources, excessive heat, and incompatible substances. Do not use in a way that forms a mist or aerosolize the product. |
| **Incompatibilities** | Strong oxidizing agents, strong acids, strong bases, ammonia, ethylene oxide, flax oils, and halogenated compounds.<br>*Note:* React with amines. |
| **Polymerization** | Will not occur |
| **Decomposition** | Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5 |

## Section 11: Toxicological Information

### Routes of Exposure

Eyes, ingestion, inhalation, and skin

| | |
|---|---|
| **Skin corrosion/irritation** | Skin irritant |
| **Serious eye damage/irritation** | Causes serious eye irritation. |
| **Sensitization** (allergic reactions) | The epoxy resin components (CAS# 25068-38-6, 28064-14-4, 68609-97-2) may cause skin sensitization in humans |
| **Carcinogenicity** (risk of cancer) | The carbon black [1333-86-4] is possibly carcinogenic by airborne routes of exposures. Because the carbon black is bound in the epoxy liquid mixture, it is not expected to be available as an airborne hazard (dust, mist, or spray) under normal use.<br>Carbon Black [1333-86-4]<br>IARC Group 2B: Possibly carcinogenic to humans<br>ACGIH A4: Not classified as a human carcinogen<br>CA Prop 65: Listed as a carcinogen<br>NTP: Not listed |
| **Mutagenicity** (risk of heritable genetic effects) | No data available |
| **Reproductive Toxicity** (risk to sex functions) | No data available |
| **Teratogenicity** (risk of fetus malformation) | No data available |
| **STOT-single exposure** | No data available |
| **STOT-repeated exposure** | No data available |
| **Aspiration hazard** | Viscosity at 40 °C is >>20.5 $mm^2/s$, thus not classified as aspiration hazard. |

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## Acute Toxicity (Lethal Exposure Concentrations)

| Chemical Name | LD50 oral | LD50 dermal | LC50 inhalation | TCLo inhalation |
|---|---|---|---|---|
| reaction products: bisphenol-A-(epichlor-hydrin) and epoxy resin | 11,400 mg/kg Rat | Not established | Not established | Not established |
| alkyl glycidyl ether | 19,200 mg/kg Rat | 4,500 mg/kg Rat | Not established | Not established |
| epoxy phenol novolac resin | Not established | Not established | Not established | Not established |
| carbon black | >15 g/kg Rat | >3 g/kg Rabbit | Not established | 1.6 mg/m$^3$ 7 h Rat |

*Note:* Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)[1] data from supplier MSDS were also consulted.

## Section 12: Ecological Information

The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients. The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (http://echa.europa.eu) were used.

Similar epoxy resins with CAS# 25068-38-6, 68609-97-2, and 28064-14-4 are generally classified as category 2 marine pollutant due to LC50 96 h of >1 but ≤10 mg/L.

**Acute Ecotoxicity**

Category 2

*GHS Code: Hazard Statement*

H401: Very toxic to aquatic life

**Chronic Ecotoxicity**

Category 2

*GHS Code: Hazard Statement*

H411: Toxic to aquatic life with long lasting effects

P273: Avoid release to the environment

P391: Collect spillage

**Biodegradability**

The content is not biodegradable.

## Section 13: Disposal Information

P501: Dispose of contents in accordance with all local, regional, national, and international regulations.

## Section 14: Transport Information

### Ground

**Refer to TDG regulations** (Canadian Transportation of Dangerous Goods regulations); **USA CFR 49 Regulations** (Parts 100 to 185). **ADR** (European Agreement Concerning the International Carriage of Dangerous Goods by Road, and **ADN** (Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways).

Sizes 5 liter and under

**Limited Quantity**

**Note:** The 832B-375ML, 832B-3L and 832B-12L are composed of separate containers which meet this inner packaging limit.

All sizes greater than 5 liter

**UN number**: UN3082
**Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S. (Reaction product: bisphenol-A-(epichlorhydrin))
**Class:** 9
**Packing Group**: III
Marine Pollutant: Yes


### Air

**Refer to IATA Dangerous Goods Regulations.**

All sizes

**UN number**: UN3082
**Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S. (Reaction product: bisphenol-A-(epichlorhydrin))
**Class:** 9
**Packing Group**: III
**Marine Pollutant:** Yes
**Pkg Inst:** 964. ERG Code: 9L
Flash Point: >142 °C [>287 °F]


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## Sea

**Refer to IMDG regulations.**

### Sizes 5 liter and under

**Limited Quantity**

**Note:** The 832B-375ML, 832B-3L and 832B-12L are composed of separate containers which meet this inner packaging limit.

### All sizes greater than 5 liter

**UN number**: UN3082
**Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S. (Reaction product: bisphenol-A-(epichlorhydrin))
**Class:** 9
**Packing Group**: III
**Marine Pollutant:** Yes
**EmS#:** F-A, S-F
**Stowage and Segregation:** Category A
Flash Point: >142 °C [>287 °F]


*Note:* Component supplier SDS transportation sections and labeling were consulted. All involved staff of shipper must be appropriately trained before involvement with the transport of this product, or work under direct supervision of a trained person.

## Section 15: Regulatory Information

## Canada

**Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL/NDSL.

**Industry and Science Canada**

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

**Health Canada**

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

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## USA

**CAA** (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

**EPCRA** (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product does not contain substances which are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

**TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, Sept 2, 2011 revision, USA).

This product contains carbon black (airborne, unbound particles of respirable size), which is listed as a carcinogen.

## Europe

**RoHS**

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

**WEEE**

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

## Section 16: Other Information

**MSDS Prepared by** Michel Hachey

**Date of Revision** 26 April 2013

**Supersedes** 27 March 2013

**Reason for Changes:** Corrected environmental hazard statement

**References**

1) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

2) ACGIH *2011 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices*, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2011).

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# BLACK EPOXY ENCAPSULATING AND POTTING COMPOUND 832B-PART A

***Abbreviations***

ACGIH American Conference of Governmental Industrial Hygienists
GHS: Globally Harmonized System of Classification of Labeling of Chemicals
LC50 Lethal Concentration 50%
LCLo Lowest published lethal concentration
LD50 Lethal Dose 50%
N/A Not Applicable
N/E Not Estimated
PEL Permissible Exposure Limit
STEL Short-Term Exposure Limit
TCLo Lowest published toxic concentration
TWA Time Weighted Average
VOC Volatile Organic Content

**Technical Queries** Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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