



Kit Revision Date: 09 March 2020

832HT HIGH TEMPERATURE EPOXY ENCAPSULATING AND POTTING COMPOUND KIT

MG Chemicals Multipart Product Kit

This product is a kit made up of multiple parts. Each part is an independently packaged chemical component and has independent hazard assessments.

Kit Content

| <i>Part</i> | <i>Product Name</i> | <i>Product Use</i> |
|-------------|------------------------|------------------------------------|
| A | High Temperature Epoxy | Epoxy resin for use with hardeners |
| B | Epoxy Hardener | Epoxy hardener for use with resins |

Safety Data Sheets for each part listed above follow this cover sheet.

Transportation Instruction

Before offering this product kit for transport, read Section 14 for all parts listed above.

832HT-A

(PART A)

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 832HT-A**Other Means of Identification:** High Temperature Epoxy: Encapsulating and Potting Compound (Part A)**Related Part #** 832HT-375ML, 832HT-375MLCA, 832HT-3L, 832HT-60L

Recommended Use and Restriction on Use

Use: Epoxy resin for use with hardener**Uses Advised Against:** Not for use as a spray coating

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA**☎** +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** support@mgchemicals.com**WEB** www.mgchemicals.com**☎** +1-905-331-1396**FAX** +1-905-331-2682**E-MAIL** info@mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)**For emergencies involving the transport of dangerous goods;** 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones

832HT-A
(PART A)
Section 2: Hazard(s) Identification
Classification of Hazardous Chemical
GHS Categories

| Criteria | Category | Signal Word | Pictograms |
|--------------------------------------|----------|-------------|-------------|
| Sensitization | Skin | 1 | Warning |
| Eye Irritation | | 2 | Warning |
| Skin Irritation | | 2 | Warning |
| Hazardous to the Aquatic Environment | Chronic | 2 | <i>none</i> |
| | | | Environment |

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

Label Elements

| | |
|---|--|
| Signal Word | WARNING |
| Pictograms | Hazard Statements |
|  | H319: Causes serious eye irritation H315: Causes skin irritation H317: May cause an allergic skin reaction |
|  | H411: Toxic to aquatic life with long lasting effects |
| Prevention | Precautionary Statements |
| P102 | Keep out of reach of children. |
| P261 | Avoid breathing fumes and vapors. |
| P280 | Wear protective gloves, eye protection, and face protection. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P264 | Wash hands thoroughly after handling. |
| P273 | Avoid release to the environment. |

Section continued on the next page

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832HT-A
(PART A)
Continued...

| Response | Precautionary Statements |
|--------------------|--|
| 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 or attention. |
| P302 + P352 | IF ON SKIN: Wash with plenty of water. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice or attention. |
| P362 + P364 | Take off contaminated clothing and wash it before reuse. |
| P391 | Collect spillage. |
| Disposal | Precautionary Statements |
| P501 | Dispose of contents in accordance to local, regional, and international regulations. |

Hazards Not Otherwise Classified

| Other Criteria | Hazard Statements/Precautionary Statement | Signal Word | Pictograms |
|-----------------------|--|--------------------|-------------------|
| None | None | None | None |

Section 3: Composition/Information on Ingredients

| CAS # | Chemical Name | %(weight) |
|--------------|--|------------------|
| 28064-14-4 | phenyl glycidyl ether/formaldehyde copolymer | 98% |
| 25068-38-6 | bisphenol-A epoxy resin (reaction product) ^{a)} | 1% |
| 1333-86-4 | carbon black | 0.4% |

 a) Average molecular weight of ≤ 700

832HT-A
(PART A)
Section 4: First-Aid Measures

| <i>Exposure Condition</i> | <i>GHS Code/Symptoms/Precautionary Statements</i> |
|---------------------------|--|
| IF IN EYES | P305 + P351 + P338, P337 + P313 |
| Immediate Symptoms | <i>redness, severe irritation, pain</i> |
| Response | Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. |
| IF ON SKIN | P302 + P352, P333 + P313, P362 + P364 |
| Immediate Symptoms | <i>redness, irritation, dry skin, allergic contact dermatitis</i> |
| Response | Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. |
| IF INHALED | P304 + P340 |
| Immediate Symptoms | <i>cough, irritation of the respiratory track</i> |
| Response | Remove person to fresh air and keep comfortable for breathing. |
| IF SWALLOWED | P301 + P330, P331 |
| Immediate Symptoms | <i>low toxicity: irritation</i> |
| Response | Rinse mouth. Do NOT induce vomiting. |

Section 5: Fire-Fighting Measures

| | |
|----------------------------|--|
| Extinguishing Media | In case of fire: Use extinguishing media suitable for surrounding materials. |
| Specific Hazards | Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires. Prevent fire-fighting wash from entering waterway or sewer system. |
| Combustion Products | Produces carbon oxides (CO,CO ₂) and toxic fumes. |
| Fire-Fighter | Wear self-contained breathing apparatus and full fire-fighting turn-out gear. |

832HT-A**(PART A)****Section 6: Accidental Release Measures**

| | |
|----------------------------------|---|
| Personal Protection | See personal protection recommendations in Section 8. |
| Precautions for Response | Avoid breathing fumes and vapors. Remove or keep away all sources of extreme heat or open flames. |
| Environmental Precautions | Avoid releasing to the environment. Prevent spill from entering drains and waterways. |
| Containment Methods | Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite). |
| Cleaning Methods | Collect liquid in a sealable, chemical-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe off residues with paper towels and place the used towels in the waste container. Use soap and water to remove the last traces of residue. |
| Disposal Methods | Dispose of spill waste according to Section 13. |

Section 7: Handling and Storage

| | |
|-------------------|---|
| Prevention | Keep out of reach of children. Avoid breathing fumes and vapors. Avoid release to the environment. |
| Handling | Wear protective gloves, eye protection, and face protection. Contaminated work clothing should not be allowed out of the workplace. Contaminated work clothing should not be allowed out of the workplace. Wash hands thoroughly after handling. Collect spillage. |
| Storage | DO NOT FREEZE. Store in a clean and dry area between 5 to 35 °C. |

832HT-A
(PART A)
Section 8: Exposure Controls/Personal Protection
Substances with Occupational Exposure Limit Values

| Chemical Name | Country | Long Term Exposure Limits (PEL) | Short Term Exposure Limits (STEL) |
|----------------------------|-----------------|---------------------------------|-----------------------------------|
| carbon black ^{a)} | ACGIH | 3.5 mg/m ³ | Not established |
| | U.S.A. OSHA PEL | 3.5 mg/m ³ | Not established |
| | Canada AB | 3.5 mg/m ³ | Not established |
| | Canada BC | 3 mg/m ³ | Not established |
| | Canada ON | 3.5 mg/m ³ | Not established |
| | Canada QC | 3.5 mg/m ³ | Not established |

Note: The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS² database and from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Respirable airborne particles

Engineering Controls
Ventilation

Keep airborne concentrations below the occupational exposure limits (OEL).

Because the carbon black is bound to the liquid mixture, it does not present an airborne hazard under normal use. Ensure adequate ventilation if the product is mechanically misted or aerosolized.

Personal Protective Equipment
Eye protection

Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Ensure that glasses have side shields for lateral protection.

Skin Protection

For likely contacts, use of protective butyl rubber or other chemically resistant gloves.

For incidental contacts, use nitrile or other chemically resistant gloves.

Section continued on the next page

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(PART A)

Respiratory Protection For emergencies and exposure above 0.5 mg/m³, use a self-contained breathing apparatus with full face piece operated in a pressure positive mode.

If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be 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 | Lower Flammability Limit | Not available |
| Appearance | Black | Upper Flammability Limit | Not available |
| Odor | Mild | Vapor Pressure @20 °C | Not available |
| Odor Threshold | Not available | Vapor Density | Not available |
| pH | Not available | Relative Density @25 °C | 1.17 |
| Freezing/Melting Point | Not available | Solubility in Water | Insoluble |
| Initial Boiling Point | ≥150 °C [≥302 °F] | Partition Coefficient n-octanol/water | Not available |
| Flash Point | 150 °C [302 °F] | Auto-ignition Temperature | Not available |
| Evaporation Rate | Not available | Decomposition Temperature | Not available |
| Flammability | Non Flammable | Viscosity @25 °C | ≥44 000 mm ² /s |

832HT-A
(PART A)
Section 10: Stability and Reactivity

| | |
|----------------------------|--|
| Reactivity | Reacts exothermically with amines. |
| Chemical Stability | Chemically stable at normal temperatures and pressures |
| Conditions to Avoid | Avoid ignition sources, open flames, and incompatible substances. Do not use in away that forms mist or aerosolizes the product. |
| Incompatibilities | Strong oxidizing agents, strong acids, alkaly |
| Polymerization | Will not occur |
| Decomposition | Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5. |

Section 11: Toxicological Information
Summary of Effects and Symptoms by Routes of Exposure

| | |
|-------------------|--|
| Eyes | Cause redness, severe irritation, or pain. |
| Skin | Cause skin redness, irritation, or allergic contact dermatitis. |
| Inhalation | May cause cough and respiratory irritation. |
| Ingestion | Faible Toxicité—May cause irritation. (See inhalation symptoms.) |
| Chronic | Prolonged and repeated exposure may lead to skin sensitization. |

Acute Toxicity (Lethal Exposure Concentrations)

| Chemical Name | LD50 oral | LD50 dermal | LC50 inhalation |
|--|-------------------------------------|--------------------|-------------------------------------|
| phenyl glycidyl ether/ formaldehyde copolymer | 4 000 mg/kg Rabbit ^{a)} | Not available | 6 000 mg/kg Rabbit ^{a)} |
| reaction products: bisphenol- A-(epichlorhydrin) and epoxy resin ^{b)} | 11 400 mg/kg Rat | Not available | Not available |
| carbon black | >15 g/kg Rat | >3 g/kg Rabbit | Not available |

Note: Toxicity data from the RTECS² and ECHA were consulted. The data from supplier SDS were also consulted.

a) According to supplier safety data sheet.

b) Referred to as bisphenol-A epoxy resin (reaction product)

Section continued on the next page

832HT-A**(PART A)****Other Toxicological Effects****Skin corrosion/irritation**

Based on tests on rabbits, the epoxy resins are moderate skin irritants.

Serious eye damage/irritation

Based on tests on rabbits, the epoxy resins are severe eye irritant.

Sensitization
(allergic reactions)

Skin sensitizer based on animal studies on the epoxy components

Carcinogenicity
(risk of cancer)

Because the carbon black is bound in the epoxy liquid mixture, it is not available as an airborne hazard (dust, mist, or spray) under normal use.

Carbon Black [1333-86-4]

IARC Group 2B: Possibly carcinogenic to humans

ACGIH A4: Not classified as a human carcinogen

CA Prop 65: Listed as a carcinogen (airborne, as unbound particles of respirable size)

NTP: Not listed

Mutagenicity
(risk of heritable genetic effects)

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

Reproductive Toxicity
(risk to sex functions)

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

Teratogenicity (risk of fetus malformation)

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

Based on available data, the classification criteria are not met. There is no category 1 components, and the kinematic viscosity is $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$.

832HT-A**(PART A)****Section 12: Ecological Information**

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

In Europe, similar epoxy resin mixtures with CAS# 28064-14-4 and 25068-38-6 are generally classified as chronic category 2 marine pollutant due to LC50 96 h of >1 mg/L but ≤10 mg/L.

Based on available data, carbon black is not classified as environmental hazards according to GHS criteria.

Acute Ecotoxicity

See chronic ecotoxicity.

Chronic Ecotoxicity

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not readily biodegradable

Bioaccumulation

Not available

Other Effects

See chronic ecotoxicity.

Section 13: Disposal Information

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

832HT-A
(PART A)
Section 14: Transport Information
Ground

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations);
USA DOT 49 CFR (Parts 100 to 185) **Regulations.**

TDG: Sizes under 450 L
Part A of 832HT-375ML, 832HT-375MLCA, 832HT-3L, 832HT-60L kits
NOT REGULATED in TDG
 per Special Provisions 99(2)

49 CFR: Sizes greater than 5 L
Part A of 832HT-60L kit

UN number: UN3082

Shipping Name:
 ENVIRONMENTALLY HAZARDOUS
 SUBSTANCE, LIQUID, N.O.S.
 (phenyl glycidyl ether/ formaldehyde
 copolymer)



49 CFR: Sizes 5 L and under
Part A of 832HT-375ML, 832HT-375MLCA, 832HT-3L kits
NOT REGULATED in 49 CFR
 per exception 171.4 (c)(2)

Class: 9

Packing Group: III

Marine Pollutant: Yes

Special Provision 99 (2): These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

171.4 (c) Exceptions:

(2) Single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in §§ 173.24 and 173.24a. This exception does not apply to marine pollutants that are a hazardous waste or a hazardous substance. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this subchapter relevant to any additional hazards continue to apply.

Temperature sensitive—Keep between 5 °C and 35 °C.

Section continued on the next page

832HT-A

(PART A)

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 5 L and under
Part A of 832HT-375ML, 832HT-375MLCA, 832HT-3L kits

NOT REGULATED

On air waybill write:
"Not Restricted, as per
Special Provisions A197"

Sizes greater than 5 L
Part A of 832HT-60L kit

UN number: UN3082

Shipping Name:
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S.
(propane, 2,2-bis[p-(2,3-
epoxypropoxy)phenyl]-, polymers)

Class: 9

Packing Group: III

Marine Pollutant: Yes



Special Provision A197: These substances when transported in single or combination packagings containing net quantity per single or inner packaging of less than 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Temperature sensitive—Keep between 5 °C and 35 °C.

Section continued on the next page

832HT-A

(PART A)

Sea

Refer to IMDG regulations.

Sizes 5 L and under
Part A of 832HT-375ML, 832HT-375MLCA, 832HT-3L kits

NOT REGULATED
per 2.10.2.7

Sizes greater than 5 L

Part A of 832HT-60L kit

UN number: UN3082

Shipping Name:
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, LIQUID, N.O.S.
(propane, 2,2-bis[p-(2,3-
epoxypropoxy)phenyl]-, polymers)

Class: 9

Packing Group: III

Marine Pollutant: Yes



2.10.2.7: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provision of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

Temperature sensitive—Keep between 5 °C and 35 °C.

Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.

Section 15: Regulatory Information

Canada

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

All hazardous ingredients are listed on the DSL.

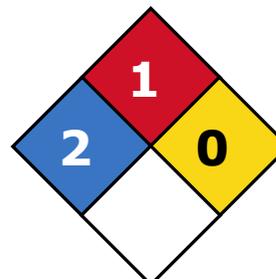
Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

Section continued on the next page

832HT-A**(PART A)****USA****Other Classifications****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)

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, USA)

This product contains carbon black, but it is bound and exposures during normal conditions of uses are below the Safe Harbor Threshold.

Europe**RoHS** (Restriction of Hazardous Substances Directive)

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

WEEE (Waste Electrical and Electronic Equipment Directive)

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

832HT-A**(PART A)****Section 16: Other Information**

| | |
|----------------------------|---|
| Prepared by the | Regulatory Affairs Department |
| Date of Review | 02 March 2020 |
| Supersedes | 28 February 2019 |
| Reason for Changes: | Update to the emergency phone number information. |

Reference

- 1) ACGIH 2017 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 (2017).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

| | |
|-------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists (USA) |
| EC50 | Half maximal effective concentration |
| EL50 | Half maximal effective loading |
| IARC | International Agency for Research on Cancer |
| NOELR | No observable effect loading ratio |
| NTP | National Toxicology Program |
| GHS | Globally Harmonized System of Classification of Labeling of Chemicals |
| LC50 | Lethal Concentration 50% |
| LCLo | Lowest published lethal concentration |
| LD50 | Lethal Dose 50% |
| OEL | Occupational Exposure Limit |
| PEL | Permissible Exposure Limit |
| SDS | Safety Data Sheet |
| STEL | Short-Term Exposure Limit |
| TCLo | Lowest published toxic concentration |
| TWA | Time Weighted Average |
| VOC | Volatile Organic Content |

Section continued on the next page

832HT-A**(PART A)**

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.

Email: support@mgchemicals.com

Phone: +1-905-331-1396

Mailing Addresses *Manufacturing & Support*
1210 Corporate Drive
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9347-193rd Street
Surrey, British Columbia, Canada
V4N 4E7

Disclaimer This safety data sheet is provided as an information resource only. *M.G. Chemicals, Ltd.* believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional, national, and international regulations.

8320

(PART B)

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: Epoxy Hardener (Part B)

Other Means of Identification: 8320-B; 832B-B; 832C-B; 832HT-B

Related Part # 8320-125ML, 8320-150ML, 8320-1L, 8320-12L, 8320-20L
(Used in part B of 832B-375ML, 832B-450ML, 832B-3L, 832B-12L, 832B-60L, 832C-375ML, 832C-450ML, 832C-3L, 832C-60L, 832HT-375ML, and 832HT-3L kits)

Recommended Use and Restriction on Use

Use: Epoxy hardener for use with resins

Uses Advised Against: Not for use as a spray coating

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
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WEB www.mgchemicals.com

TEL +1-905-331-1396

FAX +1-905-331-2682

E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)

For emergencies involving the transport of dangerous goods; 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones

8320
(PART B)
Section 2: Hazard(s) Identification
Classification of the Chemical Material
GHS Categories

| Criteria | | Category | Signal Word | Pictograms |
|--------------------------------------|---------|----------|-------------|-------------|
| Serious Eye Damage | | 1 | Danger | Corrosion |
| Skin Corrosion | | 1B | Danger | Corrosion |
| Sensitization | Skin | 1 | Warning | Exclamation |
| Hazardous to the aquatic Environment | Chronic | 2 | <i>none</i> | Environment |

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

Label Elements

| | |
|---|---|
| Signal Word | DANGER |
| Pictograms | Hazard Statements |
|  | H314: Causes severe skin burns and eye damage |
|  | H317: May cause an allergic skin reaction |
|  | H411: Toxic to aquatic life with long lasting effects |

Section continued on the next page

8320
(PART B)
Continued...

| Prevention | Precautionary Statements |
|--------------------|--|
| P102 | Keep out of reach of children. |
| P260 | Do not breathe fumes, mists, and vapors. |
| P280 | Wear protective gloves, protective clothing, eye protection, and face protection. |
| P264 | Wash hands thoroughly after handling. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P273 | Avoid release to the environment. |
| Response | Precautionary Statements |
| P310 | For all routes of exposure: Immediately call a POISON CENTER or doctor. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice or attention. |
| P363 | Wash contaminated clothing before reuse. |
| P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P391 | Collect spillage. |
| Storage | Precautionary Statements |
| P405 | Store locked up. |
| Disposal | Precautionary Statements |
| P501 | Dispose of contents in accordance to local, regional, national, and international regulations. |

Hazards Not Otherwise Classified

| Other Criteria | Hazard Statements/Precautionary Statement | Signal Word | Pictograms |
|-----------------------|--|--------------------|-------------------|
| None | None | None | None |

8320
(PART B)
Section 3: Composition/Information on Ingredients

| CAS # | Chemical Name | %(weight) |
|------------|---|-----------|
| 68410-23-1 | fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines | 92% |
| 112-24-3 | triethylenetetramine | 8% |

Section 4: First-Aid Measures

| <i>Exposure Condition</i> | <i>GHS Code: Precautionary Statement</i> |
|--------------------------------------|--|
| IF IN EYES | P305 + P351 + P338, P310 |
| Immediate Symptoms | <i>redness, severe irritation, pain, burns</i> |
| Response | Rinse cautiously with water for 30 minutes or more. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. |
| IF ON SKIN (or hair) | P303 + P361+ P352, P310, P333 + P313, P363 |
| Immediate or Delayed Symptoms | <i>redness, irritation, rash (allergic contact dermatitis), pain, chemical burns, blistering</i> |
| Response | Take off immediately all contaminated clothing. Wash with plenty of water or shower. Immediately call a POISON CENTRE or doctor. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse. |
| IF INHALED | P304 + P340, P310 |
| Immediate Symptoms | <i>cough, irritation of the respiratory track, burning sensation</i> |
| Delayed Symptoms | <i>asthma, difficulty breathing</i> |
| Response | Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. |

Section continued on the next page

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| | |
|---------------------------|---|
| IF SWALLOWED | P301 + P330 + P331, P310 |
| Immediate Symptoms | <i>irritation, abdominal pain, nausea, vomiting, burns to the digestive tract</i> |
| Response | Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor. |

Advice to Physicians

In case of exposure to nitrogen oxides (NO_x) combustion products or triethylenetetramine vapors during a fire, the symptoms may be delayed. For significant exposures, the exposed person should be kept under medical surveillance for 48 hours.

Section 5: Fire-Fighting Measures

| | |
|----------------------------|---|
| Extinguishing Media | In case of fire: Use extinguishing media suitable for surrounding materials. |
| Specific Hazards | Not flammable or combustible, but burns if involved in a fire. Produces irritating and toxic fumes in fires or in contact with hot surfaces. Inhalation of toxic smoke during fire may have delayed effects. Exposed person may need to be put under surveillance for 48 h. Toxic for aquatic environment: Prevent fire-fighting wash from entering waterway or sewer system. |
| Combustion Products | Produces carbon oxides (CO, CO ₂) and nitrogen oxides (NO _x). |
| Fire-Fighter | Wear self-contained breathing apparatus and full fire-fighting turn-out gear. |

Section 6: Accidental Release Measures

| | |
|----------------------------------|--|
| Personal Protection | Use personal protection recommended in Section 8. |
| Precautions for Response | Do not breathe fumes, mist, and vapors. Remove or keep away all sources of extreme heat. |
| Environmental Precautions | Avoid releasing to the environment. Prevent spill from entering drains and waterways. Do not flush to sewer. |
| Containment Methods | Contain with inert absorbent (such as soil, sand, vermiculite). |

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Cleaning Methods Collect liquid in a sealable container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe residue with a paper towel, and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.

Disposal Methods Dispose spill waste according to Section 13.

Section 7: Handling and Storage

Prevention Keep out of reach of children.
Do not breathe fumes, mist, and vapors. Avoid contact with skin or eyes.
Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

Handling Wear protective gloves, protective clothing, eye protection, and face protection. Take off contaminated clothing and wash it before reuse.

Wash hands thoroughly after handling.

Collect spillage.

Storage Store locked up.

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

| Chemical Name | Country or Vendor | Long Term Exposure Limits (PEL) | Short Term Exposure Limits (STEL) |
|----------------------|-------------------|--|-----------------------------------|
| triethylenetetramine | ACGIH | Not established | Not established |
| | U.S.A. OSHA PEL | Not established | Not established |
| | U.S.A (WEEL) | 1 ppm | Not established |
| | Canada AB | Not established | Not established |
| | Canada BC | Not established | Not established |
| | Canada ON | 0.5 mg/m ³ (Skin) ^{a)} | Not established |
| Canada QC | Not established | Not established | |

Note: The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS² database and from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

Skin—can be absorbed through the skin.

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Engineering Controls

Ventilation

Keep airborne concentrations below the occupational exposure limits (OEL).

Due to low vapor pressure of the product, general ventilation should be adequate for normal use. If the product is heated at high temperatures or worker is allergic, use local ventilation and 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

For likely contacts, use of protective butyl rubber, neoprene, or other chemically resistant gloves.

For incidental contacts, use nitrile or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of mist, vapors, and spray, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

RECOMMENDATION: Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be 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.

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Section 9: Physical and Chemical Properties

| | | | |
|---------------------------------|------------------------|--|----------------------------|
| Physical State | Liquid | Lower Flammability Limit | Not available |
| Appearance | Clear, amber | Upper Flammability Limit | Not available |
| Odor | Musty and ammonia-like | Vapor Pressure @20 °C^{b)} | <0.001 kPa [<0.01 mmHg] |
| Odor Threshold | Not available | Vapor Density | >5 (Air = 1) |
| pH | Not available | Relative Density @25 °C | 0.96 |
| Freezing/Melting Point | Not available | Solubility in Water | Slightly soluble |
| Initial Boiling Point | Not available | Partition Coefficient n-octanol/water | Not available |
| Flash Point^{a)} | 122 °C [252 °F] | Auto-ignition Temperature | Not available |
| Evaporation Rate | Not available | Decomposition Temperature | Not available |
| Flammability | Not available | Viscosity @25 °C | 6 000 mm ² /s |

a) Component with the lowest closed cup value—triethylenetetramine

b) Literature value for triethylenetetramine

Section 10: Stability and Reactivity

| | |
|----------------------------|---|
| Reactivity | Reacts exothermically with ketones, halogenated hydrocarbons, cyanides, nitriles, and epoxides. May attack metals such as aluminum, zinc, copper, and their alloys. |
| Chemical Stability | Chemically stable at normal temperatures and pressures |
| Conditions to Avoid | Avoid 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 |
| Polymerization | Will not occur |
| Decomposition | Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5. |

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Section 11: Toxicological Information**Summary of Effects and Symptoms by Routes of Exposure**

| | |
|-------------------|--|
| Eyes | May causes redness, severe eye irritation, pain, or corrosive eye damage. |
| Skin | May cause redness, serious skin irritation, allergic contact dermatitis, and chemical burns. Triethylenetetramine can be absorbed through skin leading to toxic effects. When heated, hot triethylenetetramine vapors may also result in itching of the face with skin redness (erythema) and swelling (edema). |
| Inhalation | Inhalation of vapors may cause irritation to the nose, throat and lung (upper respiratory tract). |
| Ingestion | May cause severe irritation or corrosive burns to the mouth, throat, esophagus, and stomach. May cause allergic reactions. (See inhalation symptoms.) |
| Chronic | Prolonged and repeated exposure to uncured epoxy hardener may lead to skin sensitization. |

Acute Toxicity (Lethal Exposure Concentrations)

| Chemical Name | LD50 oral | LD50 dermal | LC50 inhalation |
|---|----------------------------|----------------------------|------------------------|
| fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines | >5 000 mg/kg ^{a)} | >5 000 mg/kg ^{a)} | Not available |
| triethylenetetramine | 2 500 mg/kg Rat | 805 mg/kg Rabbit | Not available |

Note: Toxicity data from the RTECS² and ECHA were consulted. The data from supplier SDSs were also consulted.

a) According to supplier safety data sheet.

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Other Toxicological Effects

| | |
|--|--|
| Skin corrosion/irritation | Triethylenetetramine (CAS# 112-24-3) causes skin burns. |
| Serious eye damage/irritation | Triethylenetetramine (CAS# 112-24-3) causes severe eye damage. |
| Respiratory and skin sensitization (allergic reactions) | The epoxy hardener components (CAS# 68410-23-1, and 112-24-3) may cause skin sensitization according to animal studies. |
| Carcinogenicity (risk of cancer) | None of the ingredients are classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP. |
| Mutagenicity (risk of heritable genetic effects) | Based on available data, the classification criteria are not met. |
| Reproductive Toxicity (risk to sex functions) | Based on available data, the classification criteria are not met. |
| Teratogenicity (risk of fetus malformation) | Based on available data, the classification criteria are not met. |
| STOT-single exposure | Based on available data, the classification criteria are not met. |
| STOT-repeated exposure | Based on available data, the classification criteria are not met. |
| Aspiration hazard | Based on available data, the classification criteria are not met. There is no category 1 components, and the kinematic viscosity is $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$. |

Section 12: Ecological Information

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

The fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (CAS# 68410-23-1) were classified as a chronic category 2 environmental toxicant (not readily biodegradable, LC50 range of 1–10 mg/L for fish; EC0 bacterial >10 and ≤ 100 mg/L).

Literature values for the triethylenetetramine (CAS# 112-24-3) suggest an acute category 3 aquatic toxicity (LC50, IC50, and EC50 values of >100 mg/L for fish and between 10 and 100 mg/L for algae).

Section continued on the next page

8320**(PART B)****Acute Ecotoxicity**

See the chronic ecotoxicity.

Chronic Ecotoxicity

Category 2

Toxic to aquatic life with long lasting effect

Avoid release to the environment. Collect spillage.

Biodegradability

Not readily biodegradable

Bioaccumulation

Not available

Other Effects

Not available

Section 13: Disposal Information

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

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Section 14: Transport Information

Ground

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations); **USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Sizes 1 L and under
Part B of kits 832B-375ML, 832B-450ML, 832B-3L, 832C-375ML, 832C-450ML, 832C-3L, 832HT-375ML, 832HT-3L ^{a)}

Limited Quantity



Sizes greater than 1 L
Part B of kits 8320-12L, 8320-20L, 8320-60L

UN number: UN2735
Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (triethylenetetramine; dimer fatty acid (C18)poly amido amine resin)
Class: 8
Packing Group: II
Marine Pollutant: Yes



a) The kits listed are composed of distinct inner containers that meet the criteria for limited quantity.

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes greater than 0.1 L up to 1 L

Parts B of kits 832B-375ML, 832B-3L, 832B-450ML, 832C-375ML, 832C-3L, 832C-450ML, 832HT-375ML, 832HT-3L, 8320-1L ^{b)}

UN number: UN2735
Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (triethylenetetramine; dimer fatty acid (C18)poly amido amine resin)
Class: 8
Packing Group: II
Marine Pollutant: Yes



b) The kits listed are composed of distinct inner containers that exceed the Y840 packaging instruction size limits for limited quantity.

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Sea

Refer to IMDG regulations.

Sizes 1 L and under

Part B of kits 832B-375ML, 832B-450ML, 832B-3L, 832C-375ML, 832C-450ML, 832C-3L, 832HT-375ML, 832HT-3L ^{a)}

Limited Quantity



Sizes greater than 1 L

Part B of kits 8320-12L, 8320-20L, 8320-60L

UN number: UN2735

Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S.

(triethylenetetramine; dimer fatty acid (C18)poly amido amine resin)

Class: 8

Packing Group: II

Marine Pollutant: Yes



a) The kits listed are composed of distinct inner containers that meet the criteria for limited quantity.

Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.

Section 15: Regulatory Information

Canada

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

All hazardous ingredients are listed on the DSL/NDSL.

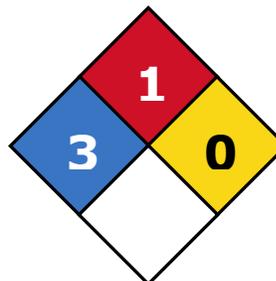
Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

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USA
Other Classifications
HMIS® RATING

| | |
|-----------------------------|------------|
| HEALTH: | * 3 |
| 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)

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 that 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)

This product does not contain any listed substances in California.

Europe
RoHS (Restriction of Hazardous Substances Directive)

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

WEEE (Waste Electrical and Electronic Equipment Directive)

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

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Section 16: Other Information

| | |
|----------------------------|---|
| SDS Prepared by | Regulatory Department |
| Date of Revision | 04 March 2020 |
| Supersedes | 25 February 2019 |
| Reason for Changes: | Update to the emergency phone number information. |

Reference

- 1) ACGIH 2017 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 (2017).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

| | |
|-------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists (USA) |
| EC50 | Half maximal effective concentration |
| EL50 | Half maximal effective loading |
| IARC | International Agency for Research on Cancer |
| NOELR | No observable effect loading ratio |
| NTP | National Toxicology Program |
| GHS | Globally Harmonized System of Classification of Labeling of Chemicals |
| LC50 | Lethal Concentration 50% |
| LCLo | Lowest published lethal concentration |
| LD50 | Lethal Dose 50% |
| OEL | Occupational Exposure Limit |
| PEL | Permissible Exposure Limit |
| SDS | Safety Data Sheet |
| STEL | Short-Term Exposure Limit |
| TCLo | Lowest published toxic concentration |
| TWA | Time Weighted Average |
| VOC | Volatile Organic Content |

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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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