

8320

(PART B)

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** 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  
CANADA

**TEL** +1-800-340-0772

**FAX** +1-800-340-0773

**E-MAIL** [support@mgchemicals.com](mailto:support@mgchemicals.com)

**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)

**TEL** +1-905-331-1396

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**E-MAIL** [info@mgchemicals.com](mailto:info@mgchemicals.com)

**E-MAIL** (Competent Person): [sds@mgchemicals.com](mailto: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**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	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...*

<b>Prevention</b>	<b>Precautionary Statements</b>
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.
<b>Response</b>	<b>Precautionary Statements</b>
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.
<b>Storage</b>	<b>Precautionary Statements</b>
P405	Store locked up.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents in accordance to local, regional, and international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
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>
<b>IF IN EYES</b>	P305 + P351 + P338, P310
<b>Immediate Symptoms</b>	<i>redness, severe irritation, pain, burns</i>
<b>Response</b>	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.
<b>IF ON SKIN (or hair)</b>	P303 + P361+ P352, P310, P333 + P313, P363
<b>Immediate or Delayed Symptoms</b>	<i>redness, irritation, rash (allergic contact dermatitis), pain, chemical burns, blistering</i>
<b>Response</b>	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.
<b>IF INHALED</b>	P304 + P340, P310
<b>Immediate Symptoms</b>	<i>cough, irritation of the respiratory track, burning sensation</i>
<b>Delayed Symptoms</b>	<i>asthma, difficulty breathing</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

*Section continued on the next page*

**8320****(PART B)***Continued...*

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

**Advice to Physicians**

In case of exposure to nitrogen oxides (NO<sub>x</sub>) 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**

<b>Extinguishing Media</b>	In case of fire: Use extinguishing media suitable for surrounding materials.
<b>Specific Hazards</b>	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.
<b>Combustion Products</b>	Produces carbon oxides (CO, CO <sub>2</sub> ) and nitrogen oxides (NO <sub>x</sub> ).
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

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

*Section continued on the next page*

**8320**
**(PART B)**

**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 <sup>3</sup> (Skin) <sup>a)</sup>	Not established
	Canada QC	Not established	Not established

*Note:* The ACGIH<sup>1</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS<sup>2</sup> 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.

*Section continued on the next page*

Page **6** of **16**

Date: 04 March 2020 / Ver. 2.07

8320

(PART B)

### 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.

**8320**
**(PART B)**
**Section 9: Physical and Chemical Properties**

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

a) Component with the lowest closed cup value—triethylenetetramine

b) Literature value for triethylenetetramine

**Section 10: Stability and Reactivity**

<b>Reactivity</b>	Reacts exothermically with ketones, halogenated hydrocarbons, cyanides, nitriles, and epoxides. May attack metals such as aluminum, zinc, copper, and their alloys.
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Avoid excessive heat and incompatible substances. Do not use in a way that forms a mist or aerosolize the product.
<b>Incompatibilities</b>	Strong oxidizing agents, strong acids
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	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**

<b>Eyes</b>	May causes redness, severe eye irritation, pain, or corrosive eye damage.
<b>Skin</b>	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).
<b>Inhalation</b>	Inhalation of vapors may cause irritation to the nose, throat and lung (upper respiratory tract).
<b>Ingestion</b>	May cause severe irritation or corrosive burns to the mouth, throat, esophagus, and stomach. May cause allergic reactions. (See inhalation symptoms.)
<b>Chronic</b>	Prolonged and repeated exposure to uncured epoxy hardener may lead to skin sensitization.

**Acute Toxicity (Lethal Exposure Concentrations)**

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

*Note:* Toxicity data from the RTECS<sup>2</sup> and ECHA were consulted. The data from supplier SDS were also consulted.

a) According to supplier safety data sheet.

*Section continued on the next page*

8320

(PART B)

**Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Triethylenetetramine (CAS# 112-24-3) causes skin burns.
<b>Serious eye damage/irritation</b>	Triethylenetetramine (CAS# 112-24-3) causes severe eye damage.
<b>Respiratory and skin sensitization</b> (allergic reactions)	The epoxy hardener components (CAS# 68410-23-1, and 112-24-3) may cause skin sensitization according to animal studies.
<b>Carcinogenicity</b> (risk of cancer)	None of the ingredients are classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.
<b>Mutagenicity</b> (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
<b>Reproductive Toxicity</b> (risk to sex functions)	Based on available data, the classification criteria are not met.
<b>Teratogenicity</b> (risk of fetus malformation)	Based on available data, the classification criteria are not met.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	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  $\leq 100$  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.

8320


(PART B)

**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* <sup>a)</sup>  
**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* <sup>b)</sup>

**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.

*Section continued on the next page*

**8320**

**(PART B)**

**Sea**

<b>Refer to IMDG regulations.</b>	
<p>Sizes 1 L and under</p> <p><i>Part B of kits 832B-375ML, 832B-450ML, 832B-3L, 832C-375ML, 832C-450ML, 832C-3L, 832HT-375ML, 832HT-3L<sup>a)</sup></i></p> <p><b>Limited Quantity</b></p> 	<p>Sizes greater than 1 L</p> <p><i>Part B of kits 8320-12L, 8320-20L, 8320-60L</i></p> <p><b>UN number:</b> UN2735  <b>Shipping Name:</b> AMINES, LIQUID, CORROSIVE, N.O.S.            (triethylenetetramine; dimer fatty acid (C18)poly amido amine resin)  <b>Class:</b> 8  <b>Packing Group:</b> II  <b>Marine Pollutant:</b> Yes</p>  

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.

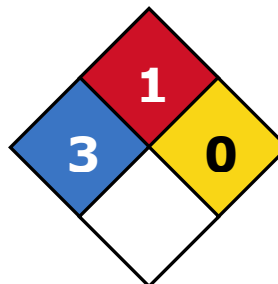
**Hazardous Products Act (R.S.C., 1985, c. H-3)**

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

*Section continued on the next page*

**8320****(PART B)****USA****Other Classifications****HMIS<sup>®</sup> RATING**

<b>HEALTH:</b>	<b>* 3</b>
<b>FLAMMABILITY:</b>	<b>1</b>
<b>PHYSICAL HAZARD:</b>	<b>0</b>
<b>PERSONAL PROTECTION:</b>	

**NFPA<sup>®</sup> 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.

8320

(PART B)

**Section 16: Other Information**

<b>SDS Prepared by</b>	Regulatory Department
<b>Date of Revision</b>	04 March 2020
<b>Supersedes</b>	25 February 2019
<b>Reason for Changes:</b>	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*

**8320****(PART B)**

**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](http://www.mgchemicals.com).

Email: [support@mgchemicals.com](mailto:support@mgchemicals.com)

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9347-193rd Street  
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