

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

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

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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

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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, and international regulations.

Hazards Not Otherwise Classified

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

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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	redness, severe irritation, pain, burns
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	redness, irritation, rash (allergic contact dermatitis), pain, chemical burns, blistering
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	cough, irritation of the respiratory track, burning sensation
Delayed Symptoms	asthma, difficulty breathing
Response	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

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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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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 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 SDS 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).

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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

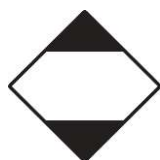
Dispose of contents in accordance with all local, regional, national, and international regulations.

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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

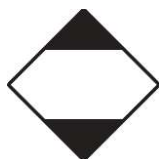
Marine Pollutant: Yes


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.

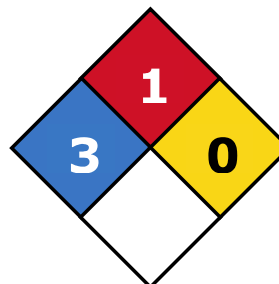
Hazardous Products Act (R.S.C., 1985, c. H-3)

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.

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

Email: support@mgchemicals.com

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