Kit Revision Date: 09/08/2021

832B Black 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

Part	*Product Name*	*Product Use*
A	Black 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.

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

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 832B-A

Other Means of Identification: Black Epoxy Encapsulating and Potting Compound (Part A)

Related Part # 832B-375ML, 832B-375MLCA, 832B-450ML, 832B-3L, 832B-12L, 832B-60L

Recommended Use and Restriction on Use

Use: Epoxy resin for use with hardeners

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

☎	+1-800-340-0772	☎	+1-905-331-1396
FAX	+1-800-340-0773	**FAX**	+1-905-331-2682
E-MAIL	support@mgchemicals.com	**E-MAIL**	info@mgchemicals.com
WEB	www.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

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Sensitization	Skin	1	Warning	Exclamation
Eye Irritation		2	Warning	Exclamation
Skin Irritation		2	Warning	Exclamation
Hazardous to the Aquatic Environment	Chronic	2	*none*	Environment
Hazardous to the Aquatic Environment	Acute	2	*none*	*none*

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

Section continued on the next page

Continued…

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.
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, national, 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)
25085-99-8	propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	88%
68609-97-2	alkyl glycidyl ether	10%
25068-38-6	bisphenol-A epoxy resin (reaction product) [a)]	1.5%
1333-86-4	carbon black	0.4%

a) Average molecular weight of ≤700

Section 4: First-Aid Measures

Exposure Condition	*GHS Code/Symptoms/Precautionary Statements*
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	*redness, irritation, pain*
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	*redness, irritation, dry skin, allergic contact dermatitis*
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, P312
Immediate Symptoms	*cough, irritation of the respiratory track*
Response	Remove person to fresh air and keep comfortable for breathing. If you feel unwell: Get medical advice or attention.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	*low toxicity: irritation*
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.

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing fumes or 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.
	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	Avoid breathing fumes or vapors or contact with skin or eyes.
	Avoid release to the environment.
Handling	Wear protective gloves, protective clothing, and eye protection.
	Take off contaminated clothing and wash it before reuse. 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.

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: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[1], OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS database[2] 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

General ventilation is adequate for normal use; keep overall exposure as low as possible.

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.

Respiratory Protection

For emergencies and exposure above 0.5 mg/m^3, 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**	>1 (Air=1)
pH	Not available	**Relative Density @25 °C**	1.13
Freezing/Melting Point	Not available	**Solubility in Water**	Negligible
Initial Boiling Point [a)]	≥150 °C [≥302 °F]	**Partition Coefficient n-octanol/water**	Not available
Flash Point [b)]	113 °C [235 °F]	**Auto-ignition Temperature** [b)]	≥235 °C [≥455 °F]
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability	Non flammable	**Viscosity @25 °C**	1 800 mm^2/s

a) Component with the lowest value—bisphenol-A epoxy resin (reaction product)
b) Component with the lowest value— alkyl glycidyl ether closed cup

Section 10: Stability and Reactivity

Reactivity	Reacts exothermically with amines.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, open flames, and incompatible substances
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	May cause redness, severe irritation, or pain.
Skin	May cause skin redness, irritation, dry skin, or allergic contact dermatitis.
Inhalation	May cause cough and respiratory irritation.
Ingestion	Low toxicity: 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
propane, 2,2-bis[p-(2,3-epoxypropoxy)phenyl]-, polymers	Not available	23 000 mg/kg Rat	Not available
alkyl glycidyl ether	19 200 mg/kg Rat	4 500 mg/kg Rat	Not available
reaction products: bisphenol-A-(epichlor-hydrin) and epoxy resin [a)]	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 ECHA database were consulted. The data from supplier SDS were also consulted.

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

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)	Based on animal studies on the epoxy components, this product is a skin sensitizer

Section continued on the next page

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 less than 0.2% category 1 components, and the kinematic viscosity is >20.5 mm^2/s at 40 °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.

In Europe, similar epoxy resin mixtures with CAS# 25085-99-8 and 25068-38-6 with average molecular weight of less than 700 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 and alkyl glycidyl ether are 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 effect

Avoid release to the environment. Collect spillage.

Biodegradability

Not available

Bioaccumulation

Not available

Other Effects

Not available

Section 13: Disposal Considerations

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 DOT 49 CFR** (Parts 100 to 185) **Regulations.**

TDG: Sizes under 450 L

Part A of 832B-375ML, 832B-450ML, 832B-3L, 832B-12L, 832B-60L kits
NOT REGULATED in TDG
per Special Provisions 99(2)

49 CFR: Sizes 5 L and under

Part A of 832B-375ML, 832B-450ML, 832B-3L, 832B-12L kits
NOT REGULATED in 49 CFR
per exception 171.4 (c)(2)

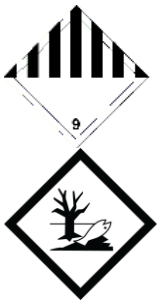
49 CFR: Sizes greater than 5 L

Part A of 832B-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



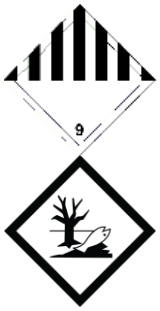
Special Provision 99 (2): These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, 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 next page

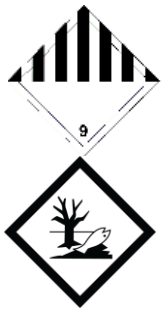
Air

Refer to ICAO-IATA Dangerous Goods Regulations.	
Sizes 5 L and under: *Part A of 832B-375ML, 832-450ML, 832B-3L, 832B-12L kits* **NOT REGULATED** On air waybill write: "Not Restricted, as per Special Provisions A197"	Sizes greater than 5 L: *Part A of 832B-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.

Sea

Refer to IMDG regulations.

Sizes 5 L and under	Sizes greater than 5 L
Part A of 832B-375ML, 832B-450ML, 832B-3L, 832B-12L kits **NOT REGULATED** per 2.10.2.7	*Part A of 832B-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 <u>trained and certified</u> 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

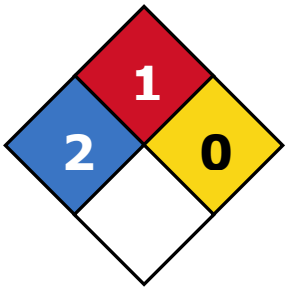
USA

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.

Section 16: Other Information

SDS Prepared by	MG Chemicals' Regulatory Department
Date of Review	10 December 2023
Supersedes	28 February 2020
Reason for Changes:	Minor update

Reference

1) ACGIH *2023 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 (2023).

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

832B-A BLACK EPOXY ENCAPSULATING AND POTTING COMPOUND

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
Burlington, Ontario, Canada
L7L 5R6

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

☎	+1-800-340-0772	☎	+1-905-331-1396
FAX	+1-800-340-0773	**FAX**	+1-905-331-2682
E-MAIL	support@mgchemicals.com		
WEB	www.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

Section 2: Hazard(s) Identification

Classification of the Chemical Material

GHS Categories

Criteria		Category	Signal Word	Pictograms
Serious Eye Damage Skin Corrosion		1 1B	Danger Danger	Corrosion Corrosion
Sensitization	Skin	1	Warning	Exclamation
Hazardous to the aquatic Environment	Chronic	2	*none*	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

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

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

Exposure Condition	*GHS Code: Precautionary Statement*
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.

Section continued on the next page

Continued…

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

Advice to Physicians

In case of exposure to nitrogen oxides (NOx) 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 ACGIH[1], OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits 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

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.

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.

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 ECHA was consulted. The data from supplier SDSs were also consulted.

a) According to supplier safety data sheet.

Section continued on the next page

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 mm^2/s at 40 °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

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.

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	Sizes greater than 1 L
Part B of kits 832B-375ML, 832B-450ML, 832B-3L, 832C-375ML, 832C-450ML, 832C-3L, 832HT-375ML, 832HT-3L [a]	*Part B of kits 8320-12L, 8320-20L, 8320-60L*
Limited Quantity 	**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.

Section continued on the next page

Sea

Refer to IMDG regulations.

Sizes 1 L and under	Sizes greater than 1 L
Part B of kits 832B-375ML, 832B-450ML, 832B-3L, 832C-375ML, 832C-450ML, 832C-3L, 832HT-375ML, 832HT-3L [a)] **Limited Quantity** 	*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 <u>trained and certified</u> 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

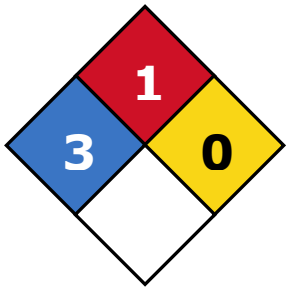
USA

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.

Section 16: Other Information

SDS Prepared by	Regulatory Department
Date of Revision	13 June 2023
Supersedes	04 March 2020
Reason for Changes:	General update to SDS.

Reference

1) ACGIH *2023 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 (2023).

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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