

834BLV-B

FLAME RETARDANT EPOXY (PART B)

Safety Data Sheet

Section 1: Identification



Product Identifier and Other Means of Identification

Product Name: 834BLV-B**Other Means of Identification:** Flame Retardant Epoxy (Part B)**Related Part #** 834BLV-450ML, 834BLV-3L, 834BLV-60L

Recommended Use and Restriction on Use

Use: Hardener for use with epoxy resin**Uses Advised Against:** Not for use as spray coating

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
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** (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



ISO 9001:2015 Quality Management System

SAI Global File #004008

Burlington, Ontario, Canada

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Section 2: Hazard(s) Identification




Classification of the Chemical Material

GHS Categories

Criteria		Category	Signal Word	Pictograms
Skin Corrosion		1	Danger	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

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P260	Do not breathe fumes, vapors, or mist.
P280	Wear protective gloves, protective clothing, and eye protection or 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
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P361 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of water.
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.
P310	Immediately call a POISON CENTER or doctor.
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

834BLV-B**FLAME RETARDANT EPOXY (PART B)****Section 3: Composition/Information on Ingredients**

CAS #	Chemical Name	%(weight)
68082-29-1	reaction product of Fatty acids, C18-unsatd., dimers and trimers with amines, polyethylenepoly-, triethylenetetramine fraction	40%
21645-51-2	aluminum trihydrate	23%
68333-79-9	ammonium polyphosphate	16%
112-24-3	triethylenetetramine	4%
112-57-2	3,6,9-triazaundecamethylenediamine	2%
108-65-6	2-methoxy-1-methylethyl acetate	0.9%
1333-86-4	carbon black	0.8%
8052-41-3	Stoddard solvent	0.4%
162627-21-6	polyphosphoric acids, reaction products with 2-oxepanone and polyethylene glycol monomethylether	0.3%
64742-95-6	solvent naphtha (petroleum), light aromatic	0.1%

834BLV-B**FLAME RETARDANT EPOXY (PART B)****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 at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor
IF ON SKIN (or hair)	P302 + P361 + P352, P310, P333 + P313
Immediate Symptoms	<i>redness, irritation, rash, pain, burns, blistering</i>
Response	Take off immediately all contaminated clothing. Wash with plenty of water. Immediately call a POISON CENTRE or doctor. If skin irritation or rash occurs: Get medical advice or attention.
IF INHALED	P304 + P340, P310
Immediate Symptoms	<i>cough, irritation of the respiratory track, burning sensation</i>
Response	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
IF SWALLOWED	P301 + P330 + P331, P310
Immediate Symptoms	<i>burns to mouth, throat, stomach, abdominal pain, nausea, vomiting, diarrhea</i>
Response	Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTRE or doctor.

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Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use water fog or fine spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific Hazards	Not flammable or combustible but will burn if involved in a fire. It should self-extinguish when removed from external flame sources. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), and toxic fumes.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

834BLV-B**FLAME RETARDANT EPOXY (PART B)****Section 6: Accidental Release Measures**

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Do not breathe the fumes, vapors or mist. 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 absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Collect liquid in a sealable, solvent-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. Wash spill area with 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. Do not breathe fumes, vapors or mist. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.
Handling	Wear protective gloves, protective clothing, and eye protection or face protection. Take off contaminated clothing and wash it before reuse. Collect spillage.
Storage	Store locked up.

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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)
aluminium metal and insoluble compounds	ACGIH	1 mg/m ³	Not established
	U.S.A. OSHA PEL	15 mg/m ³	Not established
	U.S.A (WEEL)	10 mg/m ³	Not established
	Canada AB	1 mg/m ³	Not established
	Canada BC	1 mg/m ³	Not established
	Canada ON	10 mg/m ³	Not established
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)	Not established
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	3.0 mg/m ³	Not established
	Canada ON	3.5 mg/m ³	Not established
	Canada QC	3.5 mg/m ³	Not established
Stoddard solvent	ACGIH	100 ppm	Not established
	U.S.A. OSHA PEL	500 ppm	Not established
	Canada AB	100 ppm	Not established
	Canada BC	290 mg/m ³	50 mg/m ³
	Canada ON	100 ppm	Not established
	Canada QC	100 ppm	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, 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.

a) Respirable airborne particles

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834BLV-B**FLAME RETARDANT EPOXY (PART B)****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: 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

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.

Generally, 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.

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	1.17%
Appearance	Black	Upper Flammability Limit	6.62%
Odor	Mild, amine like	Vapor Pressure @25 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	1.30
Freezing/Melting Point	Not available	Solubility in Water	Practically insoluble
Initial Boiling Point	>110 °C [>230 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point	Not available	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non flammable	Viscosity @25 °C	2 495 cP

Section 10: Stability and Reactivity

Reactivity	Will not react violently.
Chemical Stability	Chemically stable.
Conditions to Avoid	Avoid all sources of ignition: heat, sparks, open flame. Avoid electrostatic discharge. Do not heat over: 290 °C.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, and strong oxidants.
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

834BLV-B**FLAME RETARDANT EPOXY (PART B)****Section 11: Toxicological Information****Summary of Effects and Symptoms by Routes of Exposure**

Eyes	May cause chemical burns or severe eye irritation, redness, and pain.
Skin	May cause chemical burns and serious skin irritation. May cause skin sensitization. Triethylenetetramine can be absorbed through skin.
Inhalation	Cough. Sore throat. Burning sensation. Shortness of breath. Labored breathing.
Ingestion	Single dose oral toxicity is low. It may cause burns or severe irritation to the digestive tract.
Chronic	Prolonged and repeated exposure may lead to skin sensitization reactions.

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Lethal Exposure Concentrations

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
reaction product of Fatty acids, C18-unsatd., dimers and trimers with amines, polyethylenepoly-, triethylenetetramine fraction	>2 000 mg/kg Rat	>2 000 mg/kg Rat	Not available
aluminum trihydrate	79 000 mg/kg Rat	Not available	Not available
ammonium polyphosphate	500 mg/kg Rat	Not available	Not available
triethylenetetramine	2 500 mg/kg Rat	805 mg/kg Rabbit	Not available
3,6,9-triazaundecamethylenediamine	3 990 mg/kg Rat	659 mg/kg Rabbit	Not available
2-methoxy-1-methylethyl acetate	>5 000 mg/kg Rat	5 000 mg/kg Rabbit	Not available
carbon black	>5 000 mg/kg Rat	3 000 mg/kg Rabbit	Not available
Stoddard solvent	>5 000 mg/kg Rat	>3 000 mg/kg Rabbit	>5.5 mg/L 4hr Rat
polyphosphoric acids, reaction products with 2-oxepanone and polyethylene glycol monomethylether	Not available	Not available	Not available
solvent naphtha (petroleum), light aromatic	>5 000 mg/kg Rat	>2 000 mg/kg Rabbit	Not available
xylene	3 523 mg/kg Rat	1 100 mg/kg Rabbit	>11 mg/L 4hr Rat
Mixture ATE	waived corrosive	3 429 mg/kg	>1 000mg/L

Note: Toxicity data from ECHA was consulted. The data from supplier SDS were also consulted.

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834BLV-B**FLAME RETARDANT EPOXY (PART B)****Other Toxicological Effects****Skin corrosion/irritation**

Triethylenetetramine (CAS# 112-24-3) and 3,6,9-triazaundecamethylenediamine (CAS# 112-57-2) can cause skin burns.

Serious eye damage/irritation

Triethylenetetramine (CAS# 112-24-3) and 3,6,9-triazaundecamethylenediamine (CAS# 112-57-2) can cause severe eye damage.

Respiratory and skin sensitization (allergic reactions)

The epoxy hardener components (CAS# 68082-29-1, 112-24-3, and 112-57-2) may cause skin sensitization in humans.

Carcinogenicity
(risk of cancer)

The carbon black is a possible carcinogen by airborne routes of exposures. Because carbon black is bound in the epoxy liquid mixture, it is not expected to be available as an airborne hazard (dust, mist, or spray) under normal use.

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. The kinematic viscosity is $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$.

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834BLV-B**FLAME RETARDANT EPOXY (PART B)****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 Reaction product of Fatty acids, C18-unsatd., dimers and trimers with amines, polyethylenepoly-, triethylenetetramine fraction (CAS# 68082-29-1) was classified as a chronic category 2 environmental toxicant.

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

Based on available data, carbon black is not classified as environmental hazard 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 available

Bioaccumulation

Not available

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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.**

Sizes 1 L and under
Part B of 834BLV-450ML, 834BLV-3L kits
Limited Quantity



Sizes greater than 1 L (Cargo only)

Part B of 834BLV-60L kit

UN number: UN2735

Shipping Name: AMINES,
LIQUID, CORROSIVE, N.O.S.
(triethylenetetramine)



Class: 8

Packing Group: II

Marine Pollutant: Yes



Note: The 834BLV-450ML and 834BLV-3L kits are composed of separate containers which meet this inner packaging limit.

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 0.5 L and under
Part B of 834BLV-450ML



Limited Quantity

Sizes greater than 0.5 L up to 1 L

Part B of 834BLV-3L,
834BLV-60L kit

UN number: UN2735

Shipping Name: AMINES,
LIQUID, CORROSIVE, N.O.S.
(triethylenetetramine)



Class: 8

Packing Group: II

Marine Pollutant: Yes



Note: The 834BLV-450ML kit are composed of separate containers which meet this inner packaging limit.

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Sea

Refer to IMDG regulations.

Sizes 1 L and under
Part B of 834BLV-450ML,
834BLV-3L kits
Limited Quantity



Sizes greater than 1 L
Part B of 834BLV-60L kit
UN number: UN2735
Shipping Name: AMINES,
LIQUID, CORROSIVE, N.O.S.
(triethylenetetramine)
Class: 8
Packing Group: II
Marine Pollutant: Yes



Note: The 834BLV-450ML and 834BLV-3L kits are composed of separate containers which meet this inner packaging limit.

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.

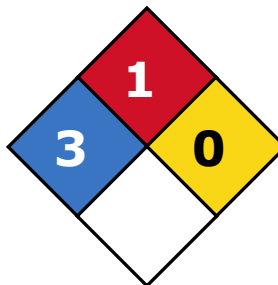
Hazardous Products Act (R.S.C., 1985, c. H-3)

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

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834BLV-B**FLAME RETARDANT EPOXY (PART B)****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 contain an "antimony compound", which is listed as hazardous air pollutants.

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

This product is EPCRA compliant.

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.

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834BLV-B**FLAME RETARDANT EPOXY (PART B)****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

MSDS Prepared by Regulatory Department

Date of Revision 25 May 2023

Supersedes Not applicable.

Reason for Changes: First version of 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).

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834BLV-B**FLAME RETARDANT EPOXY (PART B)****Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
NOELR	No observable effect loading ratio
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

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

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