

ATH FLAME RETARDANT EPOXY

834ATH-PART A

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** ATH Flame Retardant Epoxy: Encapsulating and Potting Compound**SDS Code:** 834ATH-Part A**Related Part #** 834ATH-375ML, 834ATH-3L, 834ATH-60L

### Recommended Use and Restriction on Use

**Use:** Epoxy resin for use with hardeners to pot devices or encapsulate components**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  
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](mailto:support@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)**☎** +1-905-331-1396**FAX** +1-905-331-2682**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 accidentsUSA or CANADA: Call CHEMTREC ☎: **+1-800-424-9300****For emergencies involving dangerous goods;** Collect 24/7CANADA: Call CANUTEC ☎: **+1-613-996-6666** or **\*666** on cellular phones

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### Section 2: Hazard(s) Identification




#### Classification of Hazardous Chemical

#### GHS Categories

Criteria	Category	Signal Word	Pictograms
Sensitization	Skin	1	Warning
Eye Irritation		2	Warning
Skin Irritation		2	Warning
Carcinogenicity		2	Warning
Hazardous to the Aquatic Environment	Chronic	2	<i>none</i>
			Exclamation
			Exclamation
			Exclamation
			Health
			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>WARNING</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H319: Causes serious eye irritation H315: Causes skin irritation H317: May cause an allergic skin reaction
	H351: Suspected of causing cancer
	H411: Toxic to aquatic life with long lasting effects

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<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing fumes/vapors.
P280	Wear protective gloves/eye protection/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.
<b>Response</b>	<b>Precautionary Statements</b>
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/attention.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P332 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
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/container in accordance to local/regional/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

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**Section 3: Composition/Information on Ingredients**

CAS #	Chemical Name	%(weight)
25068-38-6	bisphenol-A epoxy resin (reaction product)	50%
21645-51-2	aluminum trihydrate	17%
84852-53-9	1,1'-(1,2-ethanediyl) bis[2,3,4,5,6-pentabromo-benzene	14%
68609-97-2	alkyl glycidyl ether	8%
138265-88-0	zinc borate, hydrated <sup>a)</sup>	6%
1309-64-4	antimony trioxide	3%
64741-65-7	naphtha, petroleum, heavy alkylate	1%
1333-86-4	carbon black	0.6%

a) The anhydrous inorganic salt is listed under the CAS# 1332-07-6

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>redness, irritation, pain</i>
<b>Response</b>	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/attention.
<b>IF ON SKIN</b>	P302 + P352, P332 + P313, P362 + P364
<b>Immediate Symptoms</b>	<i>redness, irritation, dry skin, allergic contact dermatitis</i>
<b>Response</b>	Wash with plenty of water.  If skin irritation or rash occurs: Get medical advice/attention.  Take off contaminated clothing and wash it before reuse.
<b>IF INHALED</b>	P304 + P340, P308 + P313
<b>Immediate Symptoms</b>	<i>cough, irritation of the respiratory track</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing.  IF exposed or concerned: Get medical advice/attention.
<b>IF SWALLOWED</b>	P301 + P330 + P331
<b>Immediate Symptoms</b>	<i>irritation</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting.

**ATH FLAME RETARDANT EPOXY****834ATH-PART A****Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
<b>Specific Hazards</b>	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.
<b>Combustion Products</b>	Produces carbon oxides (CO,CO <sub>2</sub> ) and toxic fumes.
<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>	See personal protection recommendations in Section 8.
<b>Precautions for Response</b>	Avoid breathing fumes/vapors. Remove or keep away all sources of extreme heat or open flames.
<b>Environmental Precautions</b>	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
<b>Containment Methods</b>	Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite).
<b>Cleaning Methods</b>	Collect liquid in a sealable, chemical-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash residue with a paper towel wetted with alcohol, ethyl lactate, or another suitable organic solvent; and place dirty towels in container. Use soap and water to remove the last traces of residue.
<b>Disposal Methods</b>	Dispose of spill waste according to Section 13.

**Section 7: Handling and Storage**

<b>Prevention</b>	Keep out of reach of children.  Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.  Avoid breathing fumes/vapors or contact with skin or eyes.  Avoid release to the environment.
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### Handling

Wear protective gloves/clothing/eye protection.

Contaminated work clothing should not be allowed out of the workplace.

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	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
aluminum metal and insoluble compounds <sup>a)</sup>	ACGIH	1 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	15 mg/m <sup>3</sup>	Not established
	Canada AB	10 mg/m <sup>3</sup>	Not established
	Canada BC	1 mg/m <sup>3</sup>	Not established
	Canada ON	1 mg/m <sup>3</sup>	Not established
	Canada QC	10 mg/m <sup>3</sup>	Not established
antimony trioxide <sup>a)</sup>	ACGIH	0.5 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	0.5 mg/m <sup>3</sup>	Not established
	Canada AB	0.5 mg/m <sup>3</sup>	Not established
	Canada BC	0.5 mg/m <sup>3</sup>	Not established
	Canada ON	0.5 mg/m <sup>3</sup> <sup>b)</sup>	Not established
	Canada QC	0.5 mg/m <sup>3</sup>	Not established
naphtha, petroleum, heavy distillate	ACGIH	100 ppm (525 mg/m <sup>3</sup> )	Not established
	U.S.A. OSHA PEL	500 ppm (2 900 mg/m <sup>3</sup> )	Not established
	Canada AB	572 mg/m <sup>3</sup>	Not established
	Canada BC	290 mg/m <sup>3</sup>	580 mg/m <sup>3</sup>
	Canada ON	100 ppm	Not established
	Canada QC	525 mg/m <sup>3</sup>	Not established

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

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

b) Keep airborne concentration as low as possible

### Engineering Controls

#### Ventilation

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

Because the carbon black and antimony trioxide are 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.

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**Respiratory Protection** For over-exposures up to 10 x OEL of mist/vapors/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.

**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**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b>	Not available
<b>Appearance</b>	Black	<b>Upper Flammability Limit</b>	Not available
<b>Odor</b>	Mild	<b>Vapor Pressure @20 °C</b>	Not available
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	Not available
<b>pH</b>	Not available	<b>Specific Gravity @25 °C</b>	1.4
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Insoluble
<b>Boiling Point <sup>a)</sup></b>	>150 °C [>302 °F]	<b>Partition Coefficient</b>	Not available
<b>Flash Point <sup>a)</sup></b>	150 °C [302 °F]	<b>Auto-ignition Temperature</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Flammability (solid, gas)</b>	Not available	<b>Viscosity @25 °C</b>	3 300 cSt

a) The closed cup flash point and boiling point for component with the lowest reported value.



**ATH FLAME RETARDANT EPOXY****834ATH-PART A****Section 10: Stability and Reactivity**

<b>Reactivity</b>	Reacts exothermically with amines.
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Excessive heat (especially above 320 °C [608 °F]), and incompatible substances. Do not use in a way that forms a mist or aerosolize the product.
<b>Incompatibilities</b>	Strong oxidizing agents, strong bases, 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****Routes of Exposure**

Skin contact, Ingestion, Inhalation, and Eye contact

**Symptoms Summary**

<b>Eyes</b>	Causes serious eye irritation. May also cause eye redness or pain.
<b>Skin</b>	May cause skin redness, irritation, dry skin, or allergic contact dermatitis.
<b>Inhalation</b>	<i>Not a likely route of exposure due to low volatility.</i> Inhalation of vapors or mist may cause irritation to the nose, throat and lung (upper respiratory tract).
<b>Ingestion</b>	<i>Not a likely route of exposure.</i> No acute toxicity effect known. See skin and inhalation symptoms.
<b>Chronic</b>	Prolonged or repeated exposure to the uncured epoxy resins used may cause dermatitis and sensitization.  Inhalation of dust or mist may lead to cancer.

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**ATH FLAME RETARDANT EPOXY**
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**Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
bisphenol-A epoxy resin (reaction product)	11 400 mg/kg Rat	100 pph 7 h Rabbit <sup>a)</sup>	Not established
aluminum trihydrate	Not established	Not established	Not established
1,1'-(1,2-ethanediyl) bis[2,3,4,5,6-pentabromo-benzene	>5 000 mg/kg Rat <sup>a)</sup>	>2 000 mg/kg Rabbit <sup>a)</sup>	Not established
alkyl glycidyl ether	19 200 mg/kg Rat <sup>a)</sup>	4 500 mg/kg Rat <sup>a)</sup>	Not established
zinc borate, hydrated	>10 000 mg/kg Rat <sup>a)</sup>	>10 000 mg/kg Rabbit <sup>a)</sup>	Not established
antimony trioxide	>34 600 mg/kg Rat	>2 000 mg/kg Rabbit	Not established
naphtha, petroleum, heavy alkylate	Not established	Not established	Not established
carbon black	>15 g/kg Rat	>3 g/kg Rabbit	Not established

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

a) Supplier MSDS

**Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/irritation</b>	Causes serious eye irritation.
<b>Sensitization (allergic reactions)</b>	Skin sensitizer based on animal studies on the epoxy components

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**ATH FLAME RETARDANT EPOXY****834ATH-PART A****Carcinogenicity**

(risk of cancer)

The carbon black and antimony trioxide are possibly carcinogenic by airborne routes of exposures. Because they are both bound in the epoxy liquid mixture, it is not expected to be available as an airborne hazard (dust, mist, or spray) under normal use.

**Antimony Trioxide [1309-64-4]**

IARC Group 2B: Possibly carcinogenic to humans. This finding is based on a long term dust inhalation study for female rats.

ACGIH A2: Suspected human carcinogen causing lung cancer

CA Prop 65: Listed as a carcinogen

NTP: Not listed

**Carbon Black [1333-86-4]**

IARC Group 2B: Possibly carcinogenic to humans

ACGIH A4: Not classified as a human carcinogen

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

NTP: Not listed

**Mutagenicity**

(risk of heritable genetic effects)

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

**Reproductive Toxicity**

(risk to sex functions)

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

**Teratogenicity** (risk of fetus malformation)

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**ATH FLAME RETARDANT EPOXY****834ATH-PART A****Section 12: Ecological Information**

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

In Europe, similar epoxy resin mixtures with CAS# 25068-38-6 and 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.

Zinc borate is a category 1 chronic marine pollutant (with a LC50 96h 2.4 mg/L for *Oncorhynchus mykiss* (rainbow trout); 76 mg/L 48 h *Daphnia magna* (water flea).

Antimony trioxide (CAS#1309-64-4) is not classifiable under GHS because it has a LC50 of 833 mg/L for flathead minnow (*pimpehales promelas*) 96 h.

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

**Acute Ecotoxicity**

Category 2

Toxic to aquatic life

**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

**ATH FLAME RETARDANT EPOXY**

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**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 5 L and under

**Limited Quantity**



Sizes greater than 5 L

**UN number:** UN3082

**Shipping Name:**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(Reaction product: Bisphenol-A, Zinc borate, naphtha petroleum)

**Class:** 9

**Packing Group:** III

**Marine Pollutant:** Yes



**Air**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Sizes 5 L and under

**Limited Quantity**



Sizes greater than 5 L

**UN number:** UN3082

**Shipping Name:**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(Reaction product: Bisphenol-A, Zinc borate, naphtha petroleum)

**Class:** 9

**Packing Group:** III

**Marine Pollutant:** Yes



**Excepted Quantity E2 ≤30 mL**

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**Sea**

**Refer to IMDG regulations.**

Sizes 5 L and under

**Limited Quantity**



Sizes greater than 5 L

**UN number:** UN3082

**Shipping Name:**

ENVIRONMENTALLY HAZARDOUS  
SUBSTANCE, LIQUID, N.O.S.

(Reaction product: Bisphenol-A,  
Zinc borate, naphtha petroleum)

**Class:** 9

**Packing Group:** III

**Marine Pollutant:** Yes



*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.

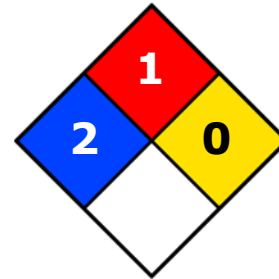
**Industry and Science Canada**

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

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**ATH FLAME RETARDANT EPOXY****834ATH-PART A****USA****Other Classifications****HMIS® RATING**

<b>HEALTH:</b>	<b>*</b>	<b>2</b>
<b>FLAMMABILITY:</b>		<b>1</b>
<b>PHYSICAL HAZARD:</b>		<b>0</b>
<b>PERSONAL PROTECTION:</b>		

**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 does not contain antimony trioxide (CAS# 1309-64-4) and zinc borate (CAS# 138265-88-0), which have a 1 000 lb reporting quantity requirements in 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, June 06, 2014 revision, USA).

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

This product contains antimony trioxide (airborne, unbound particles of respirable size), which is listed as a carcinogen.

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

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, 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.

**ATH FLAME RETARDANT EPOXY****834ATH-PART A****Section 16: Other Information****SDS Prepared by** Michel Hachey**Date of Review** 15 November 2016**Supersedes** 01 December 2015**Reason for Changes:** Change to California Proposition 65 statement in section 15.**Reference**

1) ACGIH *2013 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 (2013).

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

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

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