

842ER-B

SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 842ER-B**Other Means of Identification:** Super Shield Silver Epoxy Conductive Paint**Related Part #** 842ER-60ML, 842ER-250ML, 842ER-900ML, 842ER-4.25L

Recommended Use and Restriction on Use

Use: Silver conductive epoxy hardener**Uses Advised Against:** Not applicable

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

T +1-800-340-0772
Fax +1-800-340-0773
E-mail support@mgchemicals.com
Web www.mgchemicals.com

T +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

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Section 2: Hazard(s) Identification
Classification of Hazardous Chemical
GHS Categories

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame
Serious Eye Damage	1	Danger	Corrosion
Sensitization Skin	1	Warning	Exclamation
Skin Irritation	2	Warning	Exclamation
Specific Target Organ Toxicity Single Exposure	3	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
	H225: Highly flammable liquid and vapor
	H318: Causes serious eye damage
	H317: May cause an allergic skin reaction H315: Causes skin irritation H336: May cause dizziness or drowsiness

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Pictograms	Hazard Statements
	H411: Toxic to aquatic life with long lasting effects
Prevention	Precautionary Statements
P201	Keep out of reach of Children
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P243	Take action to prevent static discharges.
P261	Avoid breathing mist, vapors, and spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
Response	Precautionary Statements
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of water or shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P363	Wash contaminated clothing before reuse.
P305 + P351 + P338, P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P304 + P340, P319	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.
P391	Collect spillage.

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Continued...

Storage	Precautionary Statements
P403 + P235	Store in a well-ventilated place. Keep cool.
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
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
110-19-0	isobutyl acetate	48%
68410-23-1	fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	34%
71-36-3	1-butanol	8%
67-64-1	acetone	6%
112-24-3	triethylenetetramine	3%

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF IN EYES	P305 + P351 + P338, P310
Immediate Symptoms	<i>irritation, redness, pain, burn, eye damage</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.

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IF ON SKIN (or hair)	P303 + P361 + P352, P333 + P317, P363
Immediate Symptoms	<i>redness, irritation, rash, dry skin</i>
Response	Take off immediately all contaminated clothing. Wash with plenty of water or shower. If skin irritation or rash occurs: Get medical help. Wash contaminated clothing before reuse.
IF INHALED	P304 + P340, P319
Immediate Symptoms	<i>cough, shortness of breath, dizziness, drowsiness, headaches</i>
Response	Remove person to fresh air and keep comfortable for breathing. Get medical help if you feel unwell.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	<i>abdominal pain, nausea, headaches, dizziness, drowsiness, vomiting</i>
Response	Rinse mouth. Do NOT induce vomiting.

Section 5: Fire-Fighting Measures

Response	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.
Specific Hazards	The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion. 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 turnout gear.

842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****Section 6: Accidental Release Measures**

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing mist, spray or vapors. Remove or keep away all sources of extreme heat or open flames.
Environmental Precautions	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. 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	<p>Keep out of reach of children.</p> <p>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>Ground and bond container and receiving equipment. Use explosion-proof equipment. Take action to prevent static discharges.</p> <p>Keep container tightly closed. Avoid breathing mist, vapors or spray.</p> <p>Contaminated work clothing should not be allowed out of the workplace.</p> <p>Avoid release to the environment.</p>
Handling	<p>Wear protective gloves and eye protection.</p> <p>Take off contaminated clothing and wash it before reuse.</p> <p>Use only outdoors or in a well-ventilated area.</p> <p>Wash hands thoroughly after handling.</p> <p>Collect spillage.</p>
Storage	<p>Store in a well-ventilated place. Keep cool.</p> <p>Store locked up.</p>

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Section 8: Exposure Controls/Personal Protection
Substances with Occupational Exposure Limit Values

Chemical Name	Country/ Provinces	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
isobutyl acetate	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	150 ppm 150 ppm 150 ppm 150 ppm 150 ppm 150 ppm	Not established Not established Not established Not established 187 ppm Not established
acetone	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 ppm 1 000 ppm 500 ppm 250 ppm 500 ppm 750 ppm	750 ppm Not established 750 ppm 500 ppm 750 ppm 1 000 ppm
butan-1-ol	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	20 ppm 100 ppm 20 ppm 15 ppm 20 ppm 50 ppm (Ceiling)	Not established Not established Not established 30 ppm (Ceiling) Not established Not established
triethylenetetramine	ACGIH U.S.A. OSHA PEL U.S.A (WEEL) Canada AB Canada BC Canada ON	Not established Not established 1 ppm Not established Not established 0.5 mg/m ³ (Skin) ^{a)}	Not established Not established Not established Not established Not established 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) Skin—can be absorbed through the skin.

Engineering Controls
Ventilation

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

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842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****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 disposable natural rubber or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of mist, vapors or 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.

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Section 9: Physical and Chemical Properties

Physical State	Liquid	Lower Flammability Limit ^{b)}	2%
Appearance	Pale yellow	Upper Flammability Limit ^{b)}	12%
Odor	Amine-like	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	>2.01
pH	Not available	Relative Density @25 °C	0.90
Freezing/Melting Point	Not available	Solubility in Water	Partially miscible
Initial Boiling Point ^{a)}	56 °C [132 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	-17 °C [1.4 °F]	Auto-ignition Temperature	>330 °C [626 °F]
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Highly Flammable	Viscosity @25°C	22 cP

a) Values based on acetone component.

b) Values calculated using Raoult's Law and Le Chatelier principle for solvent components.

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures.
Conditions to Avoid	Ignition sources, open flames, excessive heat, and incompatible substances. Low lying vapors may form explosive mixture with air.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****Section 11: Toxicological Information****Summary of Effects and Symptoms by Routes of Exposure**

Eyes	Causes severe irritation, redness, pain, burns and/or eye damage.
Skin	Causes skin irritation, redness, rash, or dry skin.
Inhalation	May cause cough, shortness of breath, dizziness, drowsiness, or headaches.
Ingestion	May cause nausea, sore throat, abdominal pain, and diarrhea (also see inhalation symptoms).
Chronic	None known

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
isobutyl acetate	13 431 mg/kg Rat	>17 400 mg/kg Rat	Not available
Fatty acids, C18-unsatd., dimers,...	>5 000 mg/kg	>5 000 mg/kg	Not available
butan-1-ol	790 mg/kg Rat	3 400 mg/kg Rabbit	Not available
acetone	5 800 mg/kg Rat	20 mL/kg Rabbit ^{a)}	16 000 ppm 4 h Rat ^{a)}
triethylenetetramine	2 500 mg/kg Rat	805 mg/kg Rabbit	Not available

Note: Toxicity data from the ECHA database was consulted. The data from supplier SDSs' were also consulted.

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842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****Other Toxicological Effects**

Skin corrosion/irritation	The mixture of triethylenetetramine and fatty acids, C18-unsatd., dimers causes skin irritation.
Serious eye damage/irritation	The mixture of triethylenetetramine and fatty acids, C18-unsatd., dimers causes eye damage.
Sensitization (allergic reactions)	The mixture of triethylenetetramine and fatty acids, C18-unsatd., dimers may cause allergic skin reaction.
Carcinogenicity (risk of cancer)	Based on available data, the classification criteria are not met.
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	The isobutyl acetate, 1-butan-1-ol, and acetone components can affect the central nervous system by inhalation causing drowsiness or dizziness.
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 are no cat 1 ingredients present.

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).

Isobutyl acetate, 1-butanol, acetone, and triethylenetetramine are not classifiable as an environmental toxicant (with minimal LC50 of >100 mg/L).

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842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****Acute Ecotoxicity**

The component substances are not classifiable as an environmental toxicant.

Chronic Ecotoxicity

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not readily biodegradable

Other Effects

VOC (Volatile Organic Content) = 56% [510 g/L]

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 CFR 49 Regulations (Parts 100 to 185).

Sizes 5 L and under

842ER-60ML, 842ER-250ML, 842ER-900ML, 842ER-4.25L

Limited Quantity



FOR REFERENCE ONLY

UN number: UN1263

Shipping Name: PAINT

Class: 3

Packing Group: II

Marine Pollutant: Yes

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842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****Air****Refer to ICAO-IATA Dangerous Goods Regulations.**Sizes 0.5 L and under
842ER-60ML, 842ER-250ML**Limited Quantity**Total Net QTY per
package 1 LSizes up to 5 L (passenger), 60 L (cargo)
842ER-900ML, 842ER-4.25L**UN number:** UN1263**Shipping Name:** PAINT**Class:** 3**Packing Group:** II**Marine Pollutant:** Yes**Sea****Refer to IMDG regulations.**Sizes 5 L and under
842ER-60ML, 842ER-900ML,
842ER-4.25L**Limited Quantity***FOR REFERENCE ONLY***UN number:** UN1263**Shipping Name:** PAINT**Class:** 3**Packing Group:** II**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/NDSL.

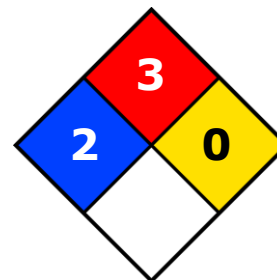
Hazardous Products Act (R.S.C., 1985, c. H-3)

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:	* 2
FLAMMABILITY:	3
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 contains isobutyl acetate (CAS# 110-19-0), which are subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

This product contains acetone (CAS# 67-64-1), which are subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

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 does not contain any of the listed substances.

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842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT****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 Creation	03 October 2023
Supersedes	11 June 2020
Reason for Changes:	Minor changes.

References

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
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

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842ER-B**SUPER SHIELD SILVER EPOXY CONDUCTIVE PAINT**

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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