

842WB

SUPER SHIELD™ WATER BASED SILVER CONDUCTIVE COATING
WATER BASED SILVER CONDUCTIVE PRINT

Safety Data Sheet

Section 1: Identification



Product Identifier and Other Means of Identification

Product Identifier: 842WB**Other Means of Identification:** Super Shield™ Water Based Silver Conductive Coating /
Water Based Silver Conductive Print**Related Part #** 842WB-15ML, 842WB-150ML, 842WB-850ML, 842WB-3.78L

Recommended Use and Restriction on Use

Use: Silver filled, electrically conductive coating**Uses Advised Against:** Not available

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** support@mgchemicals.com**WEB** www.mgchemicals.com +1-905-331-1396**FAX** +1-905-331-2682**E-MAIL** info@mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number



For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)**For emergencies involving the transport of dangerous goods;** 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones

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**SUPER SHIELD™ WATER BASED SILVER CONDUCTIVE COATING
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Section 2: Hazard(s) Identification
Classification of Hazardous Chemical
GHS Categories

Criteria	Category	Signal Word	Pictograms
Reproductive Toxicity	1	Danger	Health
Hazardous to the Aquatic Environment Chronic	1	Warning	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
	H360: May damage fertility or the unborn child
	H410: Very toxic to aquatic life with long lasting effects
Prevention	Precautionary Statements
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves, protective clothing, and eye protection.
P273	Avoid release to the environment.

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Response	Precautionary Statements
P308 + P313	IF exposed or concerned: Get medical advice or attention.
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
Argyria	Long term exposure to silver powder or compounds can lead to an irreversible blue-grey discoloration of the skin.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
7440-22-4	silver	48%
14807-96-6	talc	2%
126-33-0	sulfolane	1%

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<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF INHALED	P304 + P340, P308 + P313
Immediate Symptoms	<i>cough, shortness of breath, headache</i>
Response	Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice or attention.
IF ON SKIN	P302 + P352, P308 + P313
Immediate Symptoms	<i>dry skin, redness, mild irritation</i>
Response	Wash with plenty of water. IF exposed or concerned: Get medical advice or attention.
IF IN EYES	P305 + P351 + P338, P308 + P313
Immediate Symptoms	<i>redness, mild irritation</i>
Response	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice or attention.
IF SWALLOWED	P301 + P330, P331, P308 + P313
Immediate Symptoms	<i>low toxicity: no symptoms known or expected</i>
Response	Rinse mouth. Do NOT induce vomiting. IF exposed or concerned: Get medical advice or attention.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use extinguishing media suitable for surrounding material.
Specific Hazards	Produces irritating and toxic fumes in fires or in contact with hot surfaces.
Combustion Products	Produces carbon oxides (CO, CO ₂), silver oxides fumes, and nitrogen oxides (NO _x).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

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Personal Protection	Use personal protection recommended in Section 8.
Precautions for Response	Avoid breathing the mist/spray/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, waste 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	Keep out of reach of children. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Handling	Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling. Avoid release to the environment. Collect spillage.
Storage	Store locked up. Keep away from incompatible substances.

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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)
silver (metal dust, mist) (metal) (Ag and its compounds) (metal, dust, fumes)	ACGIH	0.1 mg/m ³	Not established
	U.S.A. OSHA PEL	0.01 mg/m ³	Not established
	Canada AB	0.1 mg/m ³	Not established
	Canada BC	0.01 mg/m ³	0.03 mg/m ³
	Canada ON	0.1 mg/m ³	Not established
	Canada QC	0.1 mg/m ³	Not established
talc (non-asbestos fiber)	ACGIH	2 mg/m ³	Not established
	U.S.A. OSHA PEL	20 mppcf ^{a)}	Not established
	Canada AB	2 mg/m ³	Not established
	Canada BC	2 mg/m ³	Not established
	Canada ON	2 mg/m ³	Not established
	Canada QC	3 mg/m ³	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 RTECS database² 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) Million particles per cubic foot of air, based on impinge samples counted by light-field technique.

Engineering Controls
Ventilation

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

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 or incidental contacts, use nitrile, neoprene, 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 and particulate filter.

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

Physical State	Liquid	Lower Flammability Limit	Not applicable
Appearance	Dark grey	Upper Flammability Limit	Not applicable
Odor	Musty	Vapor Pressure ^{a)}	23 hPa [17 mmHg]
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	1.5
Freezing/Melting Point	Not available	Solubility in Water	Miscible
Initial Boiling Point	≥100 °C [≥212 °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 @40 °C	Not available

a) Calculated using from volatile components parameters and Raoult's Law.

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Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures.
Conditions to Avoid	Ignition sources, open flames, excessive heat, and incompatible substances
Incompatibilities	Oxidizing agents, strong acids, peroxides, acetylenic compounds
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 eye redness, mild irritation, and/or pain.
Skin	May cause dry skin, redness and/or mild irritation.
Inhalation	May cause cough, shortness of breath and/or headaches.
Ingestion	Low toxicity: no symptoms known or expected
Chronic	Exposure to silver powder may also cause argyria, an irreversible blue-grey discoloration of the skin. Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.

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Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
silver	>2 000 mg/kg Rat	>2 000 mg/kg Rat	5.16 mg/m ³ 4 h Rat (dust)
talc	Not available	Not available	Not available
sulpholane	2 130 mg/kg Rat	2 000 mg/kg Rat	12 000 mg/L 4 h Rat

Note: Toxicity data from the RTECS² and ECHA databases were consulted. The data from supplier SDS were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
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)	Sulpholane may cause damage to the reproductive system.
Teratogenicity (risk of fetus malformation)	Sulpholane may cause damage to the unborn child.
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 are no category 1 components.

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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.

Silver powder less than 1 mm diameter is classified as an acute category 1 and chronic 1 aquatic pollutant by ECHA registrants.

Acute Ecotoxicity

Category 1

Very toxic to aquatic life

Chronic Ecotoxicity

Category 1

Very toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

The silver content is not biodegradable.

Other Effects

Actual VOC (Volatile Organic Compounds) content according to the US (EPA) and Canadian (CEPA) authorities.

Actual VOC = 2.4% [37 g/L]; Regulated VOC = 51 g/L

Section 13: Disposal Information

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

842WB**SUPER SHIELD™ WATER BASED SILVER CONDUCTIVE COATING
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USA DOT 49 CFR (Parts 100 to 185) **Regulations.**

Sizes under 450 L

*Cat. No. 842WB-15ML, 842WB-150ML,
842WB-850ML, 842WB-3.78L***NOT REGULATED** in TDG
per Special Provisions 99*FOR REFERENCE ONLY***UN number:** UN3082
Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(silver particles <1 mm)

Sizes 5 L and under

NOT REGULATED in 49 CFR
per exception 171.4 (c)(2)**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.*Section continued on the next page*

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Sizes 5 L and under

*Cat. No. 842WB-15ML, 842WB-150ML, 842WB-850ML, 842WB-3.78L***NOT REGULATED**

On air waybill, write:

"Not Restricted, as per Special
Provisions A197"**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.**Sea****Refer to IMDG regulations.**

Sizes 5 L and under

*Cat. No. 842WB-15ML, 842WB-150ML, 842WB-850ML, 842WB-3.78L***NOT REGULATED**

per 2.10.2.7

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.**Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.**

842WB**SUPER SHIELD™ WATER BASED SILVER CONDUCTIVE COATING
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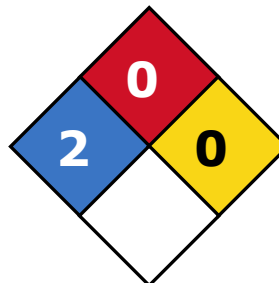
All hazardous ingredients are listed on the DSL.

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.

USA**Other Classifications****HMIS® RATING**

HEALTH:	*	2
FLAMMABILITY:		0
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 products that are listed as hazardous air pollutants.

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

This product contains silver (CAS# 7440-22-4, reportable quantity = 1 000 lb), which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

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842WB**SUPER SHIELD™ WATER BASED SILVER CONDUCTIVE COATING
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All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, USA).

This product does not contain any substances on the California Proposition 65 list.

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

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	03 March 2020
Supersedes	25 March 2019
Reason for Changes:	Update to the emergency phone number information.

Reference

1) ACGIH 2017 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2017).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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842WB**SUPER SHIELD™ WATER BASED SILVER CONDUCTIVE COATING
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ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ECHA	European Chemicals Agency
EU	European Union
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

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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Disclaimer

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