

**SP-60+**

**WATER BASED SILVER CONDUCTIVE COATING  
WATER BASED SILVER CONDUCTIVE PRINT**

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** SP-60+

**Other Means of Identification:** Water Based Silver Conductive Coating /  
Water Based Silver Conductive Print

**Related Part #** SP-40, SP-20

### Recommended Use and Restriction on Use

**Use:** Silver filled, electrically conductive coating

**Uses Advised Against:** Not available

### Details of Manufacturer or Importer

#### Importer

M.E. Taylor Engr, Inc.  
15817 Crabbs Branch Way  
Rockville, Maryland, USA  
20855

M.E. Taylor Engr, Inc. (Head Office)  
21604 Gentry Lane  
Brookeville, Maryland, USA  
20833

 **+1 301-975-9798**

**E-MAIL** [support@semicro.org](mailto:support@semicro.org)

**WEB** [www.semicro.org](http://www.semicro.org)

**E-MAIL (Competent Person):** [support@semicro.org](mailto:support@semicro.org)

### Emergency Phone Number

**For hazardous material incidents ONLY** (leaks, spills, fires, exposures or accidents)  
USA or CANADA—Call CHEMTREC at **+1-800-424-9300**

**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
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**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H360: May damage fertility or the unborn child
	H410: Very toxic to aquatic life with long lasting effects
<b>Prevention</b>	<b>Precautionary Statements</b>
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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<b>Response</b>	<b>Precautionary Statements</b>
P308 + P313	IF exposed or concerned: Get medical advice or 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 in accordance to local, regional, national, and international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
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**

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

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**Section 4: First-Aid Measures**

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

**Section 5: Fire-Fighting Measures**

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

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**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	Use personal protection recommended in Section 8.
<b>Precautions for Response</b>	Avoid breathing the mist/spray/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, 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.
<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.
<b>Handling</b>	Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling. Avoid release to the environment. Collect spillage.
<b>Storage</b>	Store locked up. Keep away from incompatible substances.

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**Section 8: Exposure Controls/Personal Protection**

**Substances with Occupational Exposure Limit Values**

<b>Chemical Name</b>	<b>Country/ Provinces</b>	<b>Long Term Exposure Limits (PEL)</b>	<b>Short Term Exposure Limits (STEL)</b>
silver (metal dust, mist) (metal) (Aq and its compounds) (metal, dust, fumes)	ACGIH	0.1 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	0.01 mg/m <sup>3</sup>	Not established
	Canada AB	0.1 mg/m <sup>3</sup>	Not established
	Canada BC	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>
	Canada ON	0.1 mg/m <sup>3</sup>	Not established
	Canada QC	0.1 mg/m <sup>3</sup>	Not established
talc (non-asbestos fiber)	ACGIH	2 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	20 mppcf <sup>a)</sup>	Not established
	Canada AB	2 mg/m <sup>3</sup>	Not established
	Canada BC	2 mg/m <sup>3</sup>	Not established
	Canada ON	2 mg/m <sup>3</sup>	Not established
	Canada QC	3 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 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) 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).

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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.

**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.

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**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b>	Not applicable
<b>Appearance</b>	Dark grey	<b>Upper Flammability Limit</b>	Not applicable
<b>Odor</b>	Musty	<b>Vapor Pressure</b> <sup>a)</sup>	23 hPa [17 mmHg]
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	Not available
<b>pH</b>	Not available	<b>Relative Density @25 °C</b>	1.5
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Miscible
<b>Initial Boiling Point</b>	≥100 °C [≥212 °F]	<b>Partition Coefficient n-octanol/water</b>	Not available
<b>Flash Point</b>	Not available	<b>Auto-ignition Temperature</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Flammability</b>	Non flammable	<b>Viscosity @40 °C</b>	Not available

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

**Section 10: Stability and Reactivity**

<b>Reactivity</b>	Not available
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures.
<b>Conditions to Avoid</b>	Ignition sources, open flames, excessive heat, and incompatible substances
<b>Incompatibilities</b>	Oxidizing agents, strong acids, peroxides, acetylenic compounds
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.



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**Section 11: Toxicological Information**

**Summary of Effects and Symptoms by Routes of Exposure**

<b>Eyes</b>	May cause eye redness, mild irritation, and/or pain.
<b>Skin</b>	May cause dry skin, redness and/or mild irritation.
<b>Inhalation</b>	May cause cough, shortness of breath and/or headaches.
<b>Ingestion</b>	Low toxicity: no symptoms known or expected
<b>Chronic</b>	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.

**Acute Toxicity (Lethal Exposure Concentrations)**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
silver	>2 000 mg/kg Rat	>2 000 mg/kg Rat	5.16 mg/m <sup>3</sup> 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 RTECS<sup>2</sup> and ECHA databases were consulted. The data from supplier SDS were also consulted.

**Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/irritation</b>	Based on available data, the classification criteria are not met.
<b>Sensitization</b> (allergic reactions)	Based on available data, the classification criteria are not met.

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<b>Carcinogenicity</b> (risk of cancer)	Based on available data, the classification criteria are not met.
<b>Mutagenicity</b> (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
<b>Reproductive Toxicity</b> (risk to sex functions)	Sulpholane may cause damage to the reproductive system.
<b>Teratogenicity</b> (risk of fetus malformation)	Sulpholane may cause damage to the unborn child.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met. There are no category 1 components.

**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.

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.

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**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.

**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 under 450 L

*Cat. No. 842WB-15ML, 842WB-150ML,  
842WB-850ML, 842WB-3.78L*

**NOT REGULATED** in TDG  
per Special Provisions 99

Sizes 5 L and under

**NOT REGULATED** in 49 CFR  
per exception 171.4 (c)(2)

*FOR REFERENCE ONLY*

**UN number:** UN3082

**Shipping Name:** ENVIRONMENTALLY  
HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(silver particles <1 mm)

**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.

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**Air**

**Refer to ICAO-IATA regulations.**

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.**

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**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.

**USA**

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	<b>* 2</b>
<b>FLAMMABILITY:</b>	<b>0</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 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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**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 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

<b>SDS Prepared by</b>	Regulatory Department
<b>Date of Review</b>	25 March 2019
<b>Supersedes</b>	19 June 2018
<b>Reason for Changes:</b>	Product name change.

### 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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**Abbreviations**

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.semico.org](http://www.semico.org)  
Email: [support@semico.org](mailto:support@semico.org)

**Mailing Addresses** *Manufacturing & Support*  
15817 Crabbs Branch Way  
Rockville, Maryland, USA  
20855

*Head Office*  
21604 Gentry Lane  
Brookeville, Maryland, USA  
20833

**Disclaimer** This safety data sheet is provided as an information resource only. *M.E. Taylor Engr, Inc.* 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.