

# Super Shield Conductive Coating



841

## Reduce or Eliminate EMI / RFI Interference

A general purpose EMI / RFI shielding spray for use on plastic electronics enclosures. Consists of a tough, durable acrylic base pigmented with a high purity nickel flake.

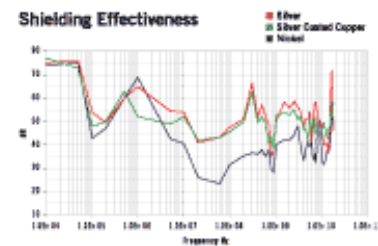
- [UL Recognized](#)
- Shielding effectiveness: One to two mil coating provides 40dB - 50dB shielding across a frequency range of 5 to 1800MHz.
- Surface Resistance approx. 0.7 Ohms
- Dry time: 10 minutes at room temperature
- Recoat time: 5 minutes
- Excellent adhesion to most plastics
- Available in both liquid and aerosol
- Tested as per IEEE Std. 299-1997
- Underwriters Laboratories Recognized File No.: E202609
- Liquid version available for dipping, brushing or spray gun applications.
- Thinner is available for adjusting the viscosity
- Thin or clean with [M.G. Thinner Cleaner](#) (Cat. No. 435-1L)
- NO CFC 'S, NO HCFC'S, Ozone Friendly



## Specifications

Shielding Effectiveness	<a href="#">See Chart</a>
<b>Aerosol Specifications</b>	
Percent Solids	27%
Percent Nickel	19%
Approximate coverage (841-340G)	1600 sq. in.
<b>Liquid Specifications</b>	
Percent Solids	71%
Percent Nickel	59.5%
Approximate coverage (841-900ML)	8300 sq. in.
Viscosity (Brookfield #2 @ 22°C)	13250 cps

▶ Super Shield Effectiveness



## Available Sizes

Catalog Number	Sizes Available	Description
841-340G	340g (12 oz)	Aerosol
841-900ML	900ml (1.65 kg)	Liquid
841-1G	1 gal (6.75 kg)	Liquid

# Material Safety Data Sheet

## Section 1: Product Identification

**MSDS Code: 841 - liquid****Name: Super Shield****Related Part Numbers: 841-900ML; 841-1G**

Use: For reducing EMI / RFI interference.

## Section 2: Hazardous Ingredients

CAS#	Chemical Name	Percentage by weight	ACGIH TWA	Osha Pel	Osha Stel
7440-02-0	Nickel	47-51%	1mg/m <sup>3</sup>	1mg/m <sup>3</sup>	N/E
108-88-3	Toluene	12-14%	50ppm	100ppm	150ppm
67-64-1	Acetone	7-8%	750ppm	1000ppm	1000ppm
110-19-0	2-methylpropyl ester acetic acid	3-4%	N/E	N/E	N/E
110-43-0	2-heptanone	3-4%	50ppm	100ppm	N/E
141-78-6	Ethyl acetate	1-2%	400ppm	400ppm	N/E
64-17-5	Ethyl alcohol	1-2%	200ppm	200ppm	250ppm

## Section 3: Hazards Identification

- Eyes:** Liquid in contact with eyes may cause permanent eye damage.
- Skin:** May cause skin irritation and possible pain and stinging if the skin is abraded.
- Inhalation:** Solvents may cause respiratory tract irritation, headache, and possible dizziness.
- Ingestion:** May cause respiratory and digestive tract irritation.
- Chronic:** Prolonged and repeated exposure may cause dermatitis, defatting of the skin, liver and kidney damage, and adverse central nervous system effects.

## Section 4: First Aid Measure

- Eyes:** Remove contact lenses. Flush with water .Get medical aid.
- Skin:** Wash skin with soap and water. Get medical aid if symptoms persist.
- Inhalation:** Immediately remove from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
- Ingestion:** Do not induce vomiting. If conscious, give 1-2 glasses of water. Get medical aid.

## Section 5: Fire Fighting Measures

- Autoignition Temperature:** 465°C      **Flash Point:** -18°C      **LEL / UEL:** 1 / 36
- Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.
- General Information:** Will burn if involved in a fire. Flash back along vapor trail is possible.

## Section 6: Accidental Release Measures

**Spill Procedure:** Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection. Sprinkle absorbent compound onto spill, then sweep into a plastic or metal container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water.

## Section 7: Handling and Storage

**Handling:** Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Do not expose container to heat or flame.

**Storage:** Keep away from sources of ignition. Store in a cool, dry, well-ventilated area, away from incompatible substances. Keep from freezing.

## Section 8: Exposure Controls

**Routes of entry:** Eyes, ingestion, inhalation, and skin.

**Ventilation:** Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

**Personal Protection:** Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

## Section 9: Physical and Chemical Properties

<b>Physical State:</b>	Liquid	<b>Odor:</b> Ethereal	<b>Solubility in water:</b> Partial	<b>Evaporation Rate:</b> Fast
<b>Boiling Point:</b>	59°C	<b>Specific Gravity:</b> 1.79@25°C	<b>Vapor Pressure:</b> 1PSI @21°C	<b>Vapor Density:</b> 4.1 (Air=1) <b>pH:</b> 7

## Section 10: Stability and Reactivity

**Stability:** Stable at normal temperatures and pressures.

**Conditions to avoid:** Temperatures over 40°C, ignition sources, and incompatible substances.

**Incompatibilities:** Alkali and alkaline earth metals, powdered aluminum, zinc, magnesium, and beryllium, lithium aluminum hydride, potassium tert-butoxide, nitrates, strong acids, strong oxidizers, chlorosulphonic acid, hydrogen peroxide.

**Polymerization:** Will not occur.

**Decomposition:** Carbon monoxide, carbon dioxide, nitrogen oxides

## Section 11: Toxicological Information

**Sensitization:** (effects of repeated exposure) Prolonged or repeated skin contact may cause dermatitis.

**Carcinogenicity:** (risk of cancer) Nickel: IARC-2B. Possibly a Carcinogenic to humans.

**Teratogenicity:** (risk of malformation in an unborn fetus) No

**Reproductive Toxicity:** (risk of sterility) No

**Mutagenicity:** (risk of heritable genetic effects) No

<b>Lethal Exposure Concentrations:</b>	<b>Ingestion (LD50):</b>	<b>Inhalation (LC50):</b>	<b>Skin (LD50):</b>	<b>Inhalation (TCLo):</b>
Polyglycol dimethacrylate	N/a	N/a	N/a	N/a
Polyglycol Oleate	>25 gm/kg Mouse	N/a	N/a	N/a
Propylene glycol	20 gm/kg Rat	N/a	20800 mg/kg Rabbit	2180 mg/m/6H/90D (Intermittent) Rat

**USA**

**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 any chemicals listed as hazardous air pollutants.

**SARA** (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

This product contains Toluene (CAS# 108-88-3, 13%) and Nickel (CAS #7440-02-0 (45%), toxic chemicals subject to the reporting requirements of section 313 of Title III of the superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372

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

This product contains the following chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372: Toluene CAS# 108-88-3, (13%) and Nickel (CAS #7440-02-0 (45%)

**TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

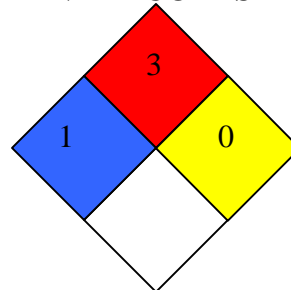
**California Proposition 65** (Chemicals know to cause cancer or reproductive toxicity, May 1, 1997 revision, USA)

This product contains toluene and nickel listed under chemicals known to the state to cause reproductive toxicity and cancer.

**HMIS RATING**

<b>HEALTH:</b>	1
<b>FLAMMABILITY:</b>	3
<b>PHYSICAL HAZARD:</b>	0
<b>PERSONAL PROTECTION:</b>	

**NFPA CODES**



**EUROPE**

**RoHS**

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

**WEEE**

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

**Section 16: Other Information**

**Definitions:** N/A = not applicable, N/E = not established

**Disclaimer:** This material safety data sheet is provided as an information resource only. M.G. Chemicals believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.

# Material Safety Data Sheet

## Section 1: Product Identification

**MSDS Code: 841 - aerosol**

**Name: Super Shield**

**Related Part Numbers: 841-340G**

Use: For reducing EMI / RFI interference.

## Section 2: Hazardous Ingredients

CAS#	Chemical Name	Percentage by weight	ACGIH TWA	Osha PeI	Osha Stel
811-97-2	1,1,1,2 - tetrafluoroethane	15 – 40	1000ppm	n/e	n/e
67-64-1	2-propanone	15 – 40	750ppm	1000ppm	1000ppm
7440-02-0	nickel	15 – 40	1mg/m <sup>3</sup>	1mg/m <sup>3</sup>	n/e
108-88-3	toluene	1 – 5	50ppm	100ppm	150ppm
110-43-0	2-heptanone	1 – 5	50ppm	100ppm	n/e
110-19-0	2-methylpropyl ester acetic acid	1 – 5	150ppm	150ppm	n/e
64-17-5	ethyl alcohol	1 – 5	200ppm	200ppm	250ppm
141-78-6	ethyl acetate	0.1 – 1	400ppm	400ppm	n/e

## Section 3: Hazards Identification

**WHMIS Codes:** A, B5, D2A

**NFPA Ratings:** Health 1 Flammability 3 Reactivity 0

**HMIS Ratings:** Health 1 Flammability 3 Reactivity 0

**Eyes:** Liquid in contact with the eyes may cause permanent eye damage.

**Skin:** May cause skin irritation and possible pain and stinging if the skin is abraded.

**Inhalation:** Solvents may cause respiratory tract irritation, headaches and possible dizziness.

**Ingestion:** May cause aspiration and respiratory and digestive tract irritation.

**Chronic:** Prolonged or repeated exposure may cause dermatitis, defatting of the skin, liver and kidney damage, and adverse central nervous system effects.

## Section 4: First Aid Measure

**Eyes:** Remove contact lenses. Flush with water or saline for 20 minutes. Get medical aid.

**Skin:** Wash skin with large quantities of soap and water. Get medical aid if symptoms persist.

**Inhalation:** Immediately remove from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Ingestion:** Do not induce vomiting. If conscious, give 1-2 glasses of water. Get medical aid.

### Section 5: Fire Fighting Measures

<b>Autoignition Temperature:</b>	465°C	<b>Flash Point:</b>	-18°C	<b>LEL / UEL:</b>	1 / 36
<b>Extinguishing Media:</b>	Use water spray, dry chemical, carbon dioxide, or chemical foam.				
<b>General Information:</b>	Will burn if involved in a fire. Containers may explode in the heat of a fire. Flash back along vapor trail is possible.				

### Section 6: Accidental Release Measures

<b>Spill Procedure:</b>	Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection. Sprinkle absorbent compound onto spill, then sweep into a plastic or metal container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water.
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### Section 7: Handling and Storage

<b>Handling:</b>	Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Do not expose container to heat or flame.
<b>Storage:</b>	Keep away from sources of ignition. Store in a cool, dry, well ventilated area, away from incompatible substances. Keep from freezing.

### Section 8: Exposure Controls

<b>Routes of entry:</b>	Eyes, ingestion, inhalation, and skin.
<b>Ventilation:</b>	Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.
<b>Personal Protection:</b>	Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

### Section 9: Physical and Chemical Properties

<b>Physical State:</b>	Aerosol	<b>Odor:</b>	ethereal	<b>Solubility:</b>	partial	<b>Evaporation Rate:</b>	fast		
<b>Boiling Point:</b>	n/a	<b>Specific Gravity:</b>	1.85	<b>Vapor Pressure:</b>	48 PSI @21°C	<b>Vapor Density:</b>	4.1 (Air=1)	<b>pH:</b>	7

### Section 10: Stability and Reactivity

<b>Stability:</b>	Stable at normal temperatures and pressures.
<b>Conditions to avoid:</b>	Temperatures over 40°C, ignition sources, and incompatible substances.
<b>Incompatibilities:</b>	Alkali and alkaline earth metals, powdered aluminum, zinc, magnesium, and beryllium, lithium aluminum hydride, potassium tert-butoxide, nitrates, strong acids, strong oxidizers, chlorosulphonic acid, hydrogen peroxide.
<b>Polymerization:</b>	Will not occur.
<b>Decomposition:</b>	Halogens, halogen acids, possibly carbonyl halides, carbon dioxide, and carbon monoxide, nitrogen oxides

## Section 11: Toxicological Information

<b>Sensitization:</b> (effects of repeated exposure)	Prolonged or repeated skin contact may cause dermatitis.		
<b>Carcinogenicity:</b> (risk of cancer)	No		
<b>Teratogenicity:</b> (risk of malformation in an unborn fetus)	This product contains zylene, a known embryotoxin. Pregnant women must avoid all contact with this product.		
<b>Reproductive Toxicity:</b> (risk of sterility)	Toluene is listed under <b>California Proposition 65</b> under chemicals known to cause reproductive toxicity.		
<b>Mutagenicity:</b> (risk of heritable genetic effects)	No		
<b>Lethal Exposure Concentrations:</b>	<b>Ingestion(LD50):</b> 7400 mg/kg (rat)	<b>Inhalation (LC50):</b> 16000 ppm/4h (rat)	<b>Skin (LD50):</b> n/e

## Section 12: Ecological Information

**General Information:** Avoid runoff into storms and sewers which lead into waterways. Water runoff can cause environmental damage.

**Environmental Impact Data:** (percentage by weight)

**CFC:** 0      **HFC:** 45      **Cl.Solv.:** 0      **VOC:** 41      **HCFC:** 0      **ODP:** 0

## Section 13: Disposal Information

**General Information:** Dispose of in accordance with all local, provincial, state, and federal regulations. Water runoff can cause environmental damage.

## Section 14: Transportation Information

**Ground:**

Consumer Commodity, ORM-D

**Air:**

Shipper must be trained and certified. Refer to IATA regulations. Must be shipped through a dangerous goods consultant.

**Sea:**

Limited quantity, UN#1950, Class 2.1. Shipper must be trained and certified. Refer to IMDG regulations.

## Section 15: Regulatory Information

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.**

**SARA** (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR 372.4)

None of the chemicals in this product have a reportable quantity.

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

This product contains the following chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372: Methanol (CAS #67-56-1, <1% by weight).

**TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.