

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID

Safety Data Sheet

Section 1: Identification**Product Identifier and Other Means of Identification****Product Name:** Super Shield™ Water Based Nickel Conductive Coating**SDS Code:** 841WB-Liquid**Related Part #** 841WB-15ML, 841WB-150ML, 841WB-900ML, 841WB-3.78L**Recommended Use and Restriction on Use****Use:** Nickel filled, electrically conductive coating**Uses Advised Against:** Not available**Details of Manufacturer or Importer****Manufacturer**MG Chemicals
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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 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

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID

Section 2: Hazard(s) Identification



Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Specific Target Organ Toxicity Repeated Exposure	1	Danger	Health
Carcinogenicity	2	Warning	Health
Sensitization Skin	1	Warning	Exclamation
Environmental Hazard Chronic Aqua. Tox.	3	<i>none</i>	<i>none</i>

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
	H372: Causes damages to organs (lungs) through prolonged or repeated exposure by inhalation H351: Suspected of causing cancer
	H317: May cause allergic skin reaction
<i>None</i>	H412: Harmful to aquatic life with long lasting effects

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Prevention	Precautionary Statements
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.
P260	Do not breathe mist/spray.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye 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.
Response	Precautionary Statements
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P314	Get medical attention/advice if you feel unwell.
Storage	Precautionary Statements
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>

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Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
7440-02-0	nickel	47%
1569-01-3	1-propoxy-2-propanol	2%
14807-96-6	talc	2%

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
IF ON SKIN	P302 + P352, P333 + P313, P362 + P364, P308 + P313
Immediate Symptoms	<i>mild irritation, allergic rash</i>
Response	Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF exposed or concerned: Get medical advice/attention.
IF INHALED	P304 + P340, P308 + P313
Immediate Symptoms	<i>cough, shortness of breath</i>
Response	Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention.
IF IN EYES	P305 + P351 + P338
Immediate Symptoms	<i>eye redness, mild irritation</i>
Response	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED	P301 + P330 + P331, P308 + P313
Immediate Symptoms	<i>not available</i>
Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention.

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**Section 5: Fire-Fighting Measures**

Extinguishing Media	Use extinguishing media suitable for surrounding material.
Specific Hazards	Produces irritating and toxic fumes in fires or in contact with hot surfaces. May produce very toxic nickel carbonyl gas in the presence of carbon monoxide in a reducing atmosphere.
Combustion Products	Produces carbon oxides (CO,CO ₂), nickel oxides fumes, and nitrogen oxides (NO _x).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Do not breathe 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. Do not breathe mist/vapors/spray. Do not eat, drink, or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace.
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- Handling** Wear protective gloves/protective clothing/eye protection.
 Take off contaminated clothing and wash it before reuse.
 Wash hands thoroughly after handling.
 Avoid release to the environment.
- Storage** Store locked up.

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)
nickel	ACGIH	1.5 mg/m ³	Not established
	U.S.A. OSHA PEL	1 mg/m ³	Not established
	Canada AB	1.5 mg/m ³	Not established
	Canada BC	0.05 mg/m ³	Not established
	Canada ON	1 mg/m ³	Not established
	Canada QC	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 by RTECS database² and data 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.

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SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**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.

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 your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the respirator is fitted to the employee by a professional.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID
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	Specific Gravity @25 °C	1.76
Freezing/Melting Point	Not available	Solubility in Water	Miscible
Boiling Point	≥100 °C [≥212 °F]	Partition Coefficient	Not available
Flash Point	Not available	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability (solid, gas)	Not available	Viscosity @40 °C	Not available

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

Section 10: Stability and Reactivity

Reactivity	<p>The nickel can react vigorously with acids and liberate hydrogen, which can form an explosive mixture in air.</p> <p>Nickel may react with carbon monoxide in a reducing atmosphere to form a very toxic nickel carbonyl gas.</p>
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, acid anhydrides
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**Section 11: Toxicological Information****Routes of Exposure**

Eye contact, Ingestion, Inhalation, and Skin contact

Symptoms Summary

Eyes	Cause eye redness and mild irritation.
Skin	May causes mild irritation or allergic rash.
Inhalation	May cause cough and shortness of breath.
Ingestion	No effects are known (see inhalation symptoms).
Chronic	Chronic inhalation exposure to nickel dust, mist, or spray may affect the central nervous system, damage lungs. Nickel is suspected of being a carcinogen.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
nickel	5 000 mg/kg Rat	Not available	10.2 mg/L 1 h Rat
1-propoxy-2-propanol	2 504 mg/kg Rat	3 550 mg/kg Rabbit	1 500 ppm 6h Rat
talc	Not available	Not available	Not available

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

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SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**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. Contains mechanically abrasive particles.
Sensitization (allergic reactions)	Exposure to nickel may cause allergic skin reaction.
Carcinogenicity (risk of cancer)	Nickel is classified as a suspect carcinogen based on animal intratracheal instillation (intubation) or interperitoneal (in body cavity) injection studies. A reliable 2008 study by Oller et al. shows no carcinogenicity for the nickel metal via normal inhalation route. Nickel [7440-02-0] IARC Group 2B: Possibly carcinogenic to humans ACGIH A5: Not suspected as a human carcinogen CA Prop 65: Listed as a carcinogen NTP: Reasonably anticipated to be human carcinogen
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	Nickel particles can damage the respiratory tract leading to inflammation, lung fibrosis, and accumulation of nickel particles in a rat study.
Aspiration hazard	Based on available data, the classification criteria are not met. There is no category 1 components.

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**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.

Nickel powder less than 1 mm diameter is classified as a chronic category 3 aquatic pollutant by ECHA registrants.

The 1-propoxy-2-propanol component is not classifiable as an environmental toxicant (with minimal LC50 of >100 mg/L).

- 1-propoxy-2-propanol is readily biodegradable and as a minimal LC50 96 h of >100 mg/L for *Oncorhynchus mykiss* (rainbow trout) and LC50 48 h of >100 mg/L for *Daphnia magna* (water flea), and an ErC50 96 h of 1466 mg/L for *Pseudokirchneriella subcapitata* (green algae).

Acute Ecotoxicity

Category 3

Harmful to aquatic life

Chronic Ecotoxicity

Category 3

Harmful to aquatic life with long lasting effects.

Avoid release to the environment. Collect spillage.

Biodegradability

The nickel content is not biodegradable.

Other Effects

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

Actual VOC = 3% [59 g/L]; Regulated VOC = 184 g/L

Note: Nickel can be recovered from the waste to reclaim the value of the nickel.

Section 13: Disposal Information

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

SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**Section 14: Transport Information****Ground**

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations) and **US DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Not Regulated

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Not Regulated

Sea

Refer to IMDG Dangerous Goods Regulations.

Not Regulated

Section 15: Regulatory Information**Canada****WHMIS 1988 Classification**

D2A - Very Toxic (Carcinogenicity);

D2B - Toxic Other (Skin sensitization)

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SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL.

Industry and Science Canada

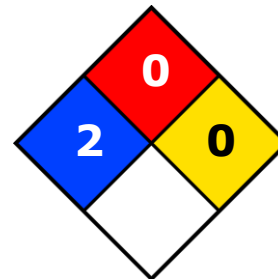
MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

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 nickel (CAS# 7440-02-0, reportable quantity = 100 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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SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**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 nickel, 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.

Section 16: Other Information

SDS Prepared by	Michel Hachey
Date of Review	02 October 2015
Supersedes	20 November 2015
Reason for Changes:	Added new part numbers.

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®)

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SUPER SHIELD WATER BASED NICKEL CONDUCTIVE COATING 841WB-LIQUID**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.mgchemicals.com.

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