



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

Section 1: Identification

Product Name **EMCoat Waterborne Conductive Paint**
Product Code **4PA067**
Manufacturer Conductive Composites
 375 West 910 South
 Heber City, Utah 84032
 info@conductive.com
Telephone (General) +1 (435) 654-3683

Section 2: Hazard(s) Identification

Classification of the Substance or Mixture:

Carcinogenicity – Category 2 (based on polymer base chemistry)
 Toxic to Reproduction (Unborn child) – Category 1B

GHS Label Elements:

Hazard Pictogram:



GHS08: Health Hazard

Signal Word: Danger
Hazard Statement: May damage unborn child
 Suspected of causing cancer

Precautionary statements:

General: Read label before use.
Prevention: Use proper “personal protective equipment” (PPE); gloves, eye and face protection, protective clothing. Do not breathe vapor.
Response: If you feel unwell following exposure seek medical attention.
Storage: Store in dry location at temperatures between 50 °F – 90 °F (10 °C – 33 °C).
Disposal: Dispose of contents and container in accordance with all local, regional, national, and international regulations.

Supplemental label elements: This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Please carefully review the contents of the Safety Data Sheet for additional information.

Hazards not otherwise classified: None known.

Section 3: Composition/Information on Ingredients

Substance / mixture: Mixture.

Ingredient Name	Typical Composition	C.A.S. Number	EINECS Number
Nickel (Ni)	0-50 %	7440-02-0	2311114
1-Methoxy-2-propanol	<2.0	107-98-2	
2-Methoxymethylethoxypropanol	<2.0	34590-94-8	
Propylene Glycol	<2.0	57-55-6	
1-Methyl-2-Pyrrolidone	<2.0	872-50-4	
1,2,4-Trimethylbenzene	<2.0	95-63-6	
Cumene	<0.5	98-82-8	

Based on product and formula knowledge of the manufacturer there are no additional ingredients present which are classified as hazardous to health and thereby are not required to be reported in this section.



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

Section 4: First-Aid Measures

- INHALATION:** Remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Qualified personnel may give oxygen if breathing is difficult. Seek medical attention.
- INGESTION:** Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.
- SKIN:** Remove contaminated clothing, wash affected area with soap and warm water. To avoid further irritation, do not rub or scratch the irritated areas. Seek medical attention if symptoms develop or persist.
- EYES:** Immediately flush eyes with lukewarm water, including under eyelids, for at least 15 minutes. Seek medical attention.
- MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED:** May cause skin irritation. See section 11 for more information.
- INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NECESSARY:** In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5: Fire-Fighting Measures

- FLAMMABILITY OF THE PRODUCT:** No specific fire or explosion hazard.
- EXTINGUISHING MEDIA:** Use extinguishing agent suitable for surrounding material and type of fire.
- UNSUITABLE EXTINGUISHING MEDIA:** No information available.
- SPECIFIC HAZARDS ARISING FROM THE MATERIAL:** May emit toxic metal oxide fumes under fire conditions.
- SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:** Use full face, self-contained breathing apparatus and full protective clothing when necessary.

Section 6: Accidental Release Measures

- PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES:** Avoid contact with skin, eyes, or clothing. Wear appropriate NIOSH-approved respirators if collection and disposal of dust is likely. Clean up material and put into a suitable container and dispose in accordance with applicable regulations.

Section 7: Handling and Storage

PRECAUTIONS FOR SAFE HANDLING:

- PROTECTIVE MEASURES:** Wear appropriate personal protective equipment (see Section 8). Avoid exposure to the liquid material during pregnancy. Do not allow contact with eyes or mucous membranes. The dry form of this material contains fibers and is electrically conductive. User generated airborne particulates are electrically conductive and may create electrical short circuits that could result in damage to and malfunction of electrical equipment and/or personal injury.

Store in the original supplied container, with the lid firmly closed, when not in use. Do not store near acids. Store at temperatures between 50 °F – 90 °F (10 °C – 33 °C).



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

If ventilation alone cannot control exposure to vapor and dust, use respirators approved for the purpose.

Avoid repeated or continuous skin contact. Wear suitable disposable gloves. Wash skin thoroughly after handling.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored, applied, or processed. After exposure to the material, workers should wash hands and face before eating, drinking, or smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on other hygiene measures.

Section 8: Exposure Controls/Personal Protection

1-Methoxy-2-propanol	ACGIH TLV (United States, 3/2016)
	TWA: 50 ppm 8 hours.
	TWA: 184 mg/m ³ 8 hours.
	STEL: 100 ppm 15 minutes.
	STEL: 369 mg/m ³ 15 minutes.
2-Methoxymethylethoxypropanol	ACGIH TLV (United States, 3/2016)
Absorbed through skin.	TWA: 100 ppm 8 hours.
	TWA: 606 mg/m ³ 8 hours.
	STEL: 150 ppm 15 minutes.
	STEL: 909 mg/m ³ 15 minutes.
Absorbed through skin.	OSHA PEL (United States, 6/2016)
	TWA: 100 ppm 8 hours.
	TWA: 600 mg/m ³ 8 hours.
Propylene Glycol	AIHA WEEL (United States, 10/2011).
	TWA: 10 mg/m ³ 8 hours.
1-Methyl-2-Pyrrolidone	AIHA WEEL (United States, 10/2011)
Absorbed through skin.	TWA: 10 ppm 8 hours.
1,2,4-Trimethylbenzene	ACGIH TLV (United States, 3/2016)
	TWA: 25 ppm 8 hours.
	TWA: 123 mg/m ³ 8 hours.
Cumene	ACGIH TLV (United States, 3/2016)
Absorbed through skin.	TWA: 50 ppm 8 hours.
	TWA: 245 mg/m ³ 8 hours.

EYE/FACE PROTECTION: Avoid eye contact. Wear coverall goggles, as necessary.



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

SKIN PROTECTION: Wear chemical resistant, impervious, disposable gloves to protect hands. Wear protective clothing such as a loose fitting long sleeved shirt that covers the arms and neck, long pants, and shoes that cover the entire foot.

RESPIRATORY PROTECTION: Not ordinarily required. If sufficient vapor or fumes are generated during application, use a NIOSH approved organic vapor respirator or a nuisance dust mask.

VENTILATION: Use local exhaust sufficient to control vapor, particulates, or dust, to below acceptable exposure limits. If exhaust ventilation is not available or is inadequate, use a NIOSH approved respirator, as appropriate. Discharge from the ventilation system should comply with applicable air pollution control regulations. Electrical systems, in areas where the product is handled, must be suitable for operation in an environment containing electrically conductive dust, fibers or particulate.

GENERAL HYGIENE RECOMMENDATIONS: Before eating, drinking, smoking, or using toilet facilities, wash face and hands thoroughly with soap and water. Use vacuum equipment to remove dry product, dust, fibers, or particulate from clothing and work areas. Use of compressed air is not recommended.

Section 9: Physical and Chemical Properties

Physical state:	Liquid
Color:	Light to medium gray when liquid. Off-white to light gray when dry.
Odor:	Not available
pH:	< 8.5
Viscosity:	N/A
Melting point Ni	1453 °C
Melting point of coating:	n/a
Boiling point Ni	2732 °C
Boiling point of coating	100 °C
Flash Point	Closed cup: >93.3 °C (>199.9 °F)
Evaporation Rate:	<0.8 (butyl acetate = 1)
Flammability:	n/a
Auto-ignition temperature:	n/a
Decomposition temperature:	n/a
Lower explosive limit:	~1.1 %
Upper explosive limit:	~14 %
Vapor pressure:	2.3 kPa (at 20 °C)
Vapor density:	1
Relative density:	n/a
Solubility	n/a
Partition coefficient:	n/a
Viscosity:	not determined
Molecular weight:	not determined



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

Section 10: Stability and Reactivity

Reactivity: This product is stable.

Chemical Stability: This product is stable, however, the nickel present in the formula may react vigorously with acids to liberate hydrogen which can form explosive mixtures with air.

Possibility of Hazardous Reactions: Under normal conditions of storage and use, no hazardous reactions are anticipated.

Conditions to Avoid: Under special conditions the nickel present in this formula can react with carbon monoxide in reducing atmospheres to form nickel carbonyl, Ni(CO)₄, a toxic gas. This is a very unlikely possibility.

Hazardous Decomposition: The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Burning will produce oxides and other unidentified gases and vapors that may be toxic. Avoid inhalation of decomposition products.

Section 11: Toxicological Information

Nickel LD50 ORAL RAT >9000 mg/kg

Under special conditions nickel can react with carbon monoxide in reducing atmospheres to form nickel carbonyl, Ni(CO)₄, a toxic gas. If exposure to nickel carbonyl is suspected, seek medical attention immediately.

Evidence for the association of nickel compound exposures and cancer risk comes mainly from workers in now obsolete nickel refining operations where very high concentrations of airborne nickel, mostly present as oxidic or sub-sulphidic species at up to 100 mg/m³ or more, were associated with excess nasal and lung cancers. The inhalation of nickel powder has not resulted in an increased incidence of malignant lung tumors in rodents. Repeated intratracheal instillation of nickel powder produced an increased incidence of malignant lung tumors in rats. Repeated intratracheal instillation of nickel powder did not produce an increased incidence of malignant lung tumors in hamsters when administered at the maximum tolerated dose. Single intratracheal instillations of nickel powder in hamsters at doses near the LD50 produced an increased incidence of fibrosarcomas, mesotheliomas and rhabdomyosarcomas. Inhalation of nickel powder at concentrations 15 times the TLV irritated the respiratory tract in rodents.

Animal experiments indicate that soluble nickel ingestion causes adverse effects on fetal development at a threshold oral exposure of 2.2 mg/ Ni/kg/day by pregnant rats. Data are insufficient to determine if this effect occurs in humans and no regulatory agency has classified soluble forms of nickel as reproductive risks for humans. No soluble nickel is found in this product as formulated.

Section 12: Ecological Information

No ecological data has been determined on the total product.

Section 13: Disposal Considerations

Material for disposal should be placed in appropriate sealed containers to avoid potential human and environmental exposure. It is the responsibility of the generator to comply with all federal, state, and local laws and regulations. We recommend that you contact an appropriate waste disposal contractor and environmental agency for relevant laws and regulations. Under the U.S., Resource Conservation and Recovery Act (RCRA), it is



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

Nickel-containing waste can be collected to recover nickel values. Should nickel recovery be implemented, follow EPA and local regulations.

The generation of waste should be minimized or avoided wherever possible.

Section 14: Transport Information

International Maritime Dangerous Goods Code

Not regulated.

International Civil Aviation Organization Technical Instructions for the Carriage of Dangerous Goods by Air

Not regulated.

U.S. Dept. of Transportation Regulations

Not regulated.

Canadian Transportation of Dangerous Goods Act

Not regulated.

European Agreement Concerning the International Carriage of Dangerous Goods by Road

Not regulated.

Section 15: Regulatory Information

TSCA Listed: Nickel is listed on the TSCA inventory.

HMIS Ratings: Health: 1 Flammability: 1 Physical: 0

SARA Title III: This product contains metallic nickel which is subject to the reporting requirements of SARA Title III Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

California Prop. 65: This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. As indicated in Title 22 of the California Code of Regulations Section 12707(b)(5), for purposes of Proposition 65, nickel and nickel compounds present no significant risk of cancer by the route of ingestion.

Refer to the Composition section (Section 3) of this SDS for appropriate CAS numbers and percent by weight.

Section 16: Other Information

Explanation and Disclaimer: Wherever such words or phrases as "hazardous," "toxic," "carcinogen," etc. appear herein, they are used as defined or described under state employee right-to-know laws, Federal OSHA laws or the direct sources for these laws such as the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful. Any exposure can only be understood within the entire context of its occurrence, which includes such factors as the substance's characteristics as defined in the SDS, amount and duration of exposures, other chemicals present and preexisting individual differences in response to the exposure.

The data provided in this SDS is based on the information received from our raw material suppliers and other sources believed to be reliable. We are supplying you this data solely in compliance with the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200 and other Federal and state laws as described in Section 15: Regulatory Information. This SDS and the information in it are not to be used for purposes other than compliance with the Federal OSHA Hazard Communication Standard.



SDS-004 EMCoat WATERBORNE POLYURETHANE SAFETY DATA SHEET

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Revision History – Q013 - Nickel CVD Coated Carbon Fiber Safety Data Sheet		
Revision	Effective Date	Summary of Changes
0	2/19/2018	Initial version