SAFETY DATA SHEET

SECTION 1 ◆ IDENTIFICATION

Webco Industries, Inc. 9101 W 21st Street Sand Springs, OK. 74063	**FOR EMERGENCY SOURCE INFORMATION CONTACT:** ✦ Phone: (918) 241-1000

GHS PRODUCT IDENTIFIERS: Carbon Steel Oil Dipped Tubing	**CHEMICAL FAMILY:** Metals	**PRODUCT USES:** Used as a base product in many steel tubing applications

SECTION 2 ✷ HAZARDS IDENTIFICATION

Note: Steel products as sold by Webco Industries are not hazardous per OSHA GHS 29 CFR 1910.1200. However, individual customer processes, (such as welding, sawing, brazing, grinding, abrasive blasting, and machining) may result in the formation of fumes, dust (combustible or otherwise), and/or particulate that may present the following hazards

GHS CLASSIFICATIONS

Carcinogenicity - Category 2	Reproductive Toxicity – 2	STOT Repeated Exposure - 1
Eye Irritation – 2B	Acute Toxicity – Oral – 4	Skin Sensitization – 1

GHS LABEL ELEMENTS

CARBON STEEL OIL DIPPED TUBING

GHS PICTOGRAMS		SIGNAL WORD
		**DANGER**

HAZARD STATEMENTS

Dust/fumes Suspected of causing cancer via inhalation.	Dust/fumes suspected of damaging fertility or the unborn child.	Dust/fumes Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.

Dust/particulates may cause eye irritation.	Inhalation of dust/fumes may cause respiratory irritation.
Harmful if swallowed.	Dust/fumes may cause an allergic skin reaction.

PRECAUTIONARY STATEMENTS

Prevention

Do not eat, drink or smoke when using this product.	Protection / face protection.	Avoid breathing dusts/fume.

Do not handle until all safety precautions have been read and understood.	Wear protective gloves / protective clothing / eye

Response

If on skin: Wash with plenty of water. If irritation or rash occurs: Get medical attention. Take off and wash contaminated clothing before reuse.	If swallowed: Call a poison center or physician if you feel unwell. Rinse mouth.
If in eyes: Rinse cautiously with water for several minutes.	Remove contact lenses, if present and easy to do. Continue Rinsing. If eye irritation persists: Get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.	If exposed, concerned or feel unwell: Get medical advice/attention.

Storage/Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

SUPPLIER INFORMATION

Webco Industries, Inc.	P.O. Box 100	Sand Springs, OK. 74063

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Iron	1309-37-1	±93
Copper	7440-50-8	0.50 max
Manganese	7439-96-5	0.25-1.5
Nickel	7440-02-0	0.25 max
Chromium	7440-47-3	0.25 max
Carbon	7440-40-0	0.01-0.50
Silicon	7440-21-3	0.00-0.50
Phosphorus	7723-14-0	0.00-0.15
Aluminum	7429-90-5	0.00-0.08
Antimony	7440-36-0	<0.9
Selenium	7782-49-2	<0.9
Vanadium	7440-62-2	<0.9
Arsenic	7440-38-2	<0.09
Beryllium	7440-41-7	<0.09
Zinc	7440-66-6	<0.05
Lead	7439-92-1	<0.01 max

Notes

- All concentrations are in percent by weight. Percentages are expressed as typical ranges or maximum concentrations of trace elements for the purpose of communicating the potential hazards of the finished product.
- Commercial steel products contain small amounts of various elements in addition to those specified. These small quantities frequently referred to as “trace” or “residual” elements, generally originate in the raw materials used and/or are alloying metals. Individual trace elements vary in concentration by weight, and may additionally include: boron, calcium, columbium (niobium), molybdenum, sulfur, titanium, and vanadium.
- Product surfaces are treated with chemicals which are inherent to the manufacturing process. For the Webco-02 product the following products are used in the production process: Gardolube 5770 and 5771, Charcool 2200, Quench 9010, Tech Cool, Kinkelder 2000, K-Kool Pink, Rust Veto 2186 and FB-20. Refer to the manufacturer’s SDS for hazards associated with this product.
- Steel products as provided contain chromium metal in the zero-valence state. As such, chromium metal does not present any unusual health hazard. Hence, the most applicable exposure limits relative to chromium in these products are those established for the metal, itself. However, welding, torch cutting, brazing or perhaps grinding of the chromium metal in steel products may generate airborne concentrations of hexavalent chromium, (CrVI), a confirmed human carcinogen. Therefore, should the user perform any of these tasks, the hexavalent chromium exposure limits would apply.

SECTION 4 ✚ FIRST AID MEASURES

EYES: For contact with dusts, fumes or particulate, flush eyes with water for 15 minutes. Eye injuries from solid particles should be treated by a physician immediately.

SKIN: Not anticipated to pose a significant skin hazard. For skin contact with dusts or powders, wash immediately with soap and water. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

INGESTION: This product is not considered to be an ingestion hazard, however if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. IF SWALLOWED: Call a poison center or Doctor/physician if you feel unwell. Rinse mouth.

INHALATION: Remove from excessive exposure levels. If large amounts of dusts, fumes, or particulate are generated, move person to fresh air. If symptoms develop, seek medical attention.

NOTE TO PHYSICIAN: Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytosis. Treatment is symptomatic, and condition is self-limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

SECTION 5 ⌘ FIRE-FIGHTING MEASURES

SEE SECTION 9 FOR FLAMMABILITY PROPERTIES

NONFLAMMABLE Steel products do not present fire or explosion hazards under normal conditions.

SUITABLE EXTINGUISHING MEDIA: For mineral oil coating: carbon dioxide , foam, dry chemical
For molten metal: use dry powder or sand. For steel dust use dry sand, water, foam, argon or nitrogen

HAZARDOUS REACTIONS/DECOMPOSITION: Steel products do not present fire or explosion hazards under normal conditions. Any non-oxidized fine metal particles/dust generated by grinding, sawing, abrasive blasting, or individual customer processes may produce materials that the customer should test for combustibility and other hazards in accordance with applicable regulations. High concentrations of combustible metallic fines in the air may present an explosion hazard. Temperatures above the melting point may liberate fumes of iron, nickel and zinc, etc.

SPECIAL PROTECTIVE ACTIONS FOR FIREFIGHTERS: Steel products in the solid state present no fire or explosion hazards. Do not use water on molten metal. Do not use carbon dioxide.

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Emergency response is unlikely unless in the form of combustible dust. Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this SDS (see Section 8). Fine turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Keep fine dust or powder away from sources of ignition. Scrap should be reclaimed for recycling. Prevent materials from entering drains, swearers, or waterways.
ENVIRONMENTAL PRECAUTIONS	Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information
METHODS FOR CLEANING UP	Emergency response is unlikely unless in the form of combustible dust.
OTHER INFORMATION	Some customer processes may generate combustible dust that may require specific precautions when cleaning spills or releases of dust.

SECTION 7 ✂ HANDLING AND STORAGE

Prior to working with this product workers should be trained on its proper handling, use and storage

PRECAUTIONS FOR SAFETY HANDLING	✦ None given
STORAGE PROCEDURES	✦ Webco Industries, Inc. Disclaims any responsibility for harm to persons or property resulting from conditions arising from storage or handling of this material or article by individuals beyond the control of Webco Industries, Inc., or resulting from use of the material or article in a manner inconsistent with its normal commercial use.
INCOMPATIBILITIES	✦ None given

SECTION 8 ⌗ EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH TLV (2022)	OSHA PEL	NIOSH IDLH
Aluminum	TWA:1 mg/M^3 (respirable fraction)	TWA: 5 mg/M^3 (respirable fraction)	None Determined
Antimony	TWA: 0.5 mg/M^3	TWA: 0.5 mg/M^3	50 mg/M^3
Arsenic	TWA: 0.01 mg/M^3	TWA: 0.01 mg/M^3	5 mg/M^3
Beryllium	TWA: 0.00005 mg/M^3	TWA: 0.0002 mg/M^3	4 mg/M^3
Carbon	None Determined	None Determined	None Determined
Chromium	TWA: 0.5 mg/M^3	TWA: 1 mg/M^3	250 mg/M^3
Copper (fume)	TWA: 0.2 mg/M^3	TWA: 0.1 mg/M^3	100 mg/M^3
Iron (Oxide fume)	TWA: 5 mg/M^3	TWA: 10 mg/M^3	2,500 mg/M^3
Lead	TWA: 0.05 mg/M^3	TWA: 0.05 mg/M^3	100 mg/M^3
Manganese	TWA: 0.1 mg/M^3	TWA: 5 mg/M^3	500 mg/M^3

		(ceiling limit)	
Nickel	TWA: 1.5 mg/M^3	TWA: 1 mg/M^3	10 mg/M^3
Phosphorus	None Determined	None Determined	None Determined
Selenium	TWA: 0.2 mg/M^3	TWA: 0.2 mg/M^3	1 mg/M^3
Silicon	TWA: 3 mg/M^3 (respirable fraction)	TWA: 5 mg/M^3 (respirable fraction)	None Determined
Vanadium (Pentoxide fume)	TWA: 0.05 mg/M^3	TWA: 0.1 mg/M^3 (ceiling limit)	35 mg/M^3
Zinc (fume)	TWA: 2 mg/M^3	TWA: 5 mg/M^3	500 mg/M^3

ENGINEERING CONTROLS: Use adequate ventilation to keep dust/fume concentrations of this product below occupational exposure limits particularly in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

- **EYES:** Safety glasses or goggles as needed for welding, burning, grinding or machine operations (ANSI Z87.1 approved).
- **SKIN/BODY:** Chemical protective clothing is recommended based on a thorough PPE hazard assessment. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for specific information.
- **HAND/CLOTHING PROTECTION:** Protective Gloves: Should be worn as required for welding, burning or handling operations. Clothing: Flame/heat protective garments required for safe burning, welding, or grinding.
- **RESPIRATORY PROTECTION:** A NIOSH approved air purifying respirator (APR) with properly selected cartridges may be permissible under certain circumstances where airborne concentrations may exceed exposure limits. Protection provided by APRs is limited, calculate the maximum use concentration for the exposure situation. Use a positive pressure atmosphere supplied (Grade D air) respirator if there is any potential for exposure levels are not known or any other circumstances where APRs may not provide adequate protection.

SECTION 9 ϟ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG)**:** Not applicable	**PERCENT VOLATILE BY VOLUME:** Not applicable	
SPECIFIC GRAVITY (H_2O = 1): Not applicable	**VISCOSITY UNITS, TEMP:** Not applicable	
EVAPORATION RATE (BuAc = 1): Not applicable	**VAPOR DENSITY (AIR =1):** Not applicable	
VAPOR PRESSURE AT 25 °C**:** Not applicable	**MELTING POINT:** 2,750 °C	
APPEARANCE AND ODOR: Gray to silver / no odor.	**AUTOIGNITION TEMPERATURE:** Not applicable	
FLASH POINT: (Method Used) Not applicable	**FLAMMABLE LIMITS:**	Not applicable

SECTION 10 ¤ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures

HAZARDOUS REACTION POTENTIAL: Will not occur

CONDITIONS TO AVOID: Stable under normal conditions of use, storage & transport. Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume.

INCOMPATIBLE PRODUCTS AND MATERIALS TO AVOID: Not Applicable

HAZARDOUS DECOMPOSITION PRODUCTS: Combusted mineral oil may contain polynuclear aromatic hydrocarbons.

HAZARDOUS POLYMERIZATION: Not Applicable

SECTION 11 ֍ TOXICOLOGICAL INFORMATION

METAL FUMES

When this product is welded or involved in a high temperature operation, fumes are generated. Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. The signs and symptoms are generally flu-like. They include fever, chills, nausea, headache, fatigue, muscle aches, joint pains, lack of appetite, shortness of breath, pneumonia, chest pain, change in blood pressure, dizziness, and coughing. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese,

tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic. The most common agents involved are zinc and copper.

IRON

The primary component of this product is iron. Long-term exposure to iron dusts or fumes can result in a condition called siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin or eye may cause an exogenous or ocular siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver.

Toxicity

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{lo\ (oral)}$	Dog	30 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (5 minutes)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC/NTP	Not Listed		
California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not classifiable as a human carcinogen	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: Not expected to cause effects
Reproductive toxicity: Not expected to cause effects	Teratogenicity: No data available
Skin Corrosion/irritation: Causes skin irritation and repeated exposure caused dryness and cracking	Serious eye damage, irritation: may cause serious eye irritation
Synergistic effects: No data available	Aspiration hazard: May be fatal if aspirated and enters airway

RTECS #: NO7400000

ANTIMONY

Acute overexposures to antimony are associated with gastrointestinal tract symptoms (loss of appetite, pain), cough, skin problems and mucous membrane irritation. Chronic exposures can cause headaches, sleepiness, dizziness, ulcers, weight loss, nausea, vomiting, diarrhea and chest pain and tightness.

Toxicity

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(Intra)}$	Rat	100 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC/NTP	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation: No data available
Synergistic effects: No data available	Aspiration hazard: No data available

RTECS #: CC4025000

ARSENIC

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Mouse	144 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Group 1: Carcinogenic to humans
NTP	Listed

California (Prop 65): Listed	**NIOSH:** Listed	**ACGIH:** A1: Confirmed human carcinogen	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: CG0525000	

BERYLLIUM

Inhaling or contacting beryllium can cause an immune response that results in an individual becoming sensitized to beryllium. Individuals with beryllium sensitization are at risk for developing a debilitating disease of the lungs called chronic beryllium disease (CBD). Beryllium may also cause cancer.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(Intra)}$	Rat	51 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Group 1: Carcinogenic to humans
NTP	Listed

California (Prop 65): Listed	**NIOSH:** Listed	**ACGIH:** A1: Confirmed human carcinogen	**OSHA:** Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: DS1750000	

COPPER

Copper can cause alterations in taste. It can also be an irritant to the mucous membranes.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Mouse	413 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: No data available		Specific organ toxicity, repeated exposure: No data available	
CARCINOGENICITY			
IARC/NTP	Not Listed		
California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed
MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS			
Respiratory or Skin sensitization: No data available		Germ cell mutagenicity: No data available	
Reproductive toxicity: No data available		Teratogenicity: No data available	
Skin Corrosion/irritation: No data available		Serious eye damage, irritation: No data available	
Synergistic effects: No data available		Aspiration hazard: No data available	
RTECS #: GL5325000			

NICKEL

The health effects of nickel exposures include contact dermatitis in sensitized individual, eye irritation, asthma, pulmonary fibrosis, and edema.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(Intra)}$	Rat	250 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	2B: Possibly carcinogenic to humans		
NTP	Listed		
California (Prop 65): Listed as carcinogen	**NIOSH:** Listed	**ACGIH:** A5: Not Suspected as a Human Carcinogen	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: test performed on rats showed negative results
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation -rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: QR5950000	

MANGANESE

Acute effects of exposure to manganese include irritation, lung damage, and pneumonia. Chronic exposure results in central nervous system effects.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	9 gm/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC/NTP	Not Listed		
California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** A4: Not Classifiable as a Human Carcinogen	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: test performed on rats showed negative results
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation -rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: OO9275000	

CHROMIUM

Acute effects of exposure to chromium include irritation, lung damage, and pneumonia.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	27.5 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: May cause respiratory irritation	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Group 3: Not classifiable as to its carcinogenicity to humans
NTP	Not Listed

California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: Testing showed no sensitization	Germ cell mutagenicity: test performed on rats showed negative results
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-Testing showed no irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: GB4200000	

LEAD

Overexposure to lead can cause a variety of health problems including anemia, abdominal symptoms (colic, anorexia, constipation, pain), tremors, insomnia, lassitude and reproductive effects.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$TD_{50(oral)}$	Rabbit	50 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	No Data

Specific organ toxicity, single exposure: May cause drowsiness or dizziness	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Group 2B: Possibly carcinogenic to humans
NTP	Listed

California (Prop 65): Listed as carcinogen	**NIOSH:** Not Listed	**ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: OF7525000	

SELENIUM

Selenium can cause stomach discomfort, headache, and rash.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	490 mg/kg	$LD_{50(dermal)}$	Rabbit	>20 g/kg	$LC_{50(inh)}$	Rat (1 hour)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Group 3: Not classifiable as to its carcinogenicity to humans
NTP	Not Listed

California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: QJ0525000	

ALUMINUM

Exposure to aluminum is usually not harmful, but inhalation of high levels can affect the lungs.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Rat	2.65 g/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (1 hour)	11.8 g/M^3

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Not Listed
NTP	Not Listed

California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** A4: Not Classifiable as a Human Carcinogen	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: Lab experiments have shown mutagenic effects.
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: WL3675000	

ZINC

Freshly formed zinc fume (e.g., welding) can cause metal fume fever, a condition characterized by chills, fever, muscular pain, nausea, and vomiting. Shortness of breath and chest pains may also occur.

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result	Type of Dose	Specie	Result
$LD_{50(oral)}$	Mouse	222 mg/kg	$LD_{50(dermal)}$	Rabbit	No Data	$LC_{50(inh)}$	Rat (4 hours)	103 g/M^3

Specific organ toxicity, single exposure: May cause drowsiness	Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC/NTP	Not Listed

California (Prop 65): Not Listed	**NIOSH:** Not Listed	**ACGIH:** Not Listed	**OSHA:** Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: MI7700000	

SECTION 12 ✹ ECOLOGICAL INFORMATION

No Data Available for this product as sold/shipped. However, individual components of the product when processed have been found to be potentially hazardous to the environment.

IRON

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Striped bass	13.6 mg/L 96 hour	EC_{50}	----------	No Data

Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data

COPPER

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Fathead Minnow 96 hours	0.0068-0.0156 mg/L	EC_{50}	Water Flea 48 hours	0.03 mg/L

Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data

MANGANESE

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Rainbow Trout 96 hours	> 3.6 mg/L	EC_{50}	----------	No Data

Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data

NICKEL

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Rainbow Trout 96 hour	15.3 mg/L	EC_{50}	Water Flea 48 hours	0.074 mg/l

Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data

CHROMIUM

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Carp 96 hours	14.3 mg/L	EC_{50}	Water Flea 48 hours	0.07 mg/l

Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data

Not applicable or no data

PHOSPHORUS

TOXICITY

Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	----------	No Data	EC_{50}	----------	No Data
Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data					
ALUMINUM					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	----------	No Data	EC_{50}	----------	No Data
Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data					
ANTIMONY					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Fathead Minnow 96 hours	14.4 mg/l	EC_{50}	Water Flea 48 hours	423.45 mg/l
Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data					
SELENIUM					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Rainbow Trout 96 hour	100 mg/L	EC_{50}	----------	No Data
Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data					
VANADIUM					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Golden orfe 96 hour	0.693 mg/L	EC_{50}	----------	No Data
Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data					
BERYLLIUM					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Fathead Minnow 96 hours	1.9 mg/l	EC_{50}	----------	No Data
Persistence and Degradability/ Bioaccumulative Potential/Mobility in Soil: Not applicable or no data					
ARSENIC					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Water Flea 24 hours	9.9 mg/l	EC_{50}	Water Flea 48 hours	3.8 mg/l
PERSISTENCE AND DEGRADABILITY					
Very toxic to aquatic life with long lasting effects.					
Bioaccumulative Potential and Mobility in Soil: No data					
ZINC					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Fathead Minnow 96 hours	0.439 mg/l	EC_{50}	Water Flea 48 hours	0.155 mg/l
PERSISTENCE AND DEGRADABILITY					
Very toxic to aquatic life with long lasting effects.					
Bioaccumulative Potential and Mobility in Soil: No data					

LEAD					
TOXICITY					
Type of Dose	Specie	Result	Type of Dose	Specie	Result
LC_{50}	Fathead Minnow 96 hours	2.8 mg/l	EC_{50}	Water Flea 48 hours	4.46 mg/l

PERSISTENCE AND DEGRADABILITY

Very toxic to aquatic life with long lasting effects.

Bioaccumulative Potential and Mobility in Soil: No data

No data

SECTION 13 ✱ DISPOSAL CONSIDERATIONS

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations

Waste Disposal Method: Metals may be reclaimed. Dispose of in a landfill in accordance with all local, state, and federal regulations.

SECTION 14 ▣ TRANSPORTATION INFORMATION

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations: Not Regulated

SECTION 15 ☽ REGULATORY INFORMATION

Agency	Listing: Guidance only, consult specific regulations			
OSHA: This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be combustible or hazardous and require protection to comply with applicable Federal, state and local laws and regulations.				
CERCLA RQ's	Steel is not reportable, however, it contains hazardous substances that may be reportable if released in pieces with diameters less than or equal to 0.004 inches (RQ marked with an "*").			
	Antimony	5000 pounds*	Arsenic	1 pound *
	Beryllium	10 pounds *	Cadmium	10 pounds *
	Chromium	5000 pounds *	Copper	5000 pounds *
	Lead	10 pounds *	Nickel	100 pounds *
	Phosphorus	1 pound *	Selenium	100*
	Zinc		1000*	
EPCRA 313 (*De minimis*)	Nickel Beryllium Arsenic Cadmium: 0.1%			
	Aluminum, Copper, Zinc, Antimony, Selenium, Vanadium, Manganese and Chromium: 1%			
CAA 112(r) TQ	None Listed			
Section 304 EHS RQ	Phosphorus	1		
Section 302 (EHS) TPQ	Phosphorus	100		
RCRA Code	Beryllium-P015, Chromium-D007, Selenium-D010, Arsenic-D004 and Cadmium-D006			
TSCA: Components of this product are listed on the TSCA Inventory				
SARA (40 CFR Part 355) TPQ's: None of the ingredients are listed				
SARA 302/304/311/312 extremely hazardous substances and emergency planning: None of the ingredients are listed				
New Jersey	Arsenic Copper, Chromium, Manganese, Nickel, Selenium			
Pennsylvania	Arsenic, Manganese, Molybdenum, Silicon, Nickel, Selenium			
Massachusetts	Arsenic, Copper, Chromium, Manganese, Molybdenum, Nickel, Selenium			
California Prop. 65:This product may contain chemicals (arsenic, beryllium, cadmium, lead and nickel) known to the state of California to cause cancer and chemicals (cadmium and lead) known to the state of California to cause birth defects or other reproductive harm.				
SARA 311/312 SDS distribution - chemical inventory: Antimony, Arsenic, Beryllium and Lead: Acute Health Hazard, Chronic Health Hazard.				

Clean Water Act (CWA) 307: Arsenic, Antimony, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, and Zinc

Clean Water Act (CWA) 311 and Clean Air Act Section 602 Class I and II Substances: None listed

SECTION 16 ⌘ OTHER INFORMATION

NFPA LABEL

HMIS III LABEL

Personal Protection Index

NPCA recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.

Acronym List

°F=degrees Fahrenheit	°C=degrees Celsius	ACGIH= American Conference of Industrial Hygienists
APR=Air Purifying Respirator	BCF= Bioconcentration Factor	BuAc=Butyl Acetate
CAS=Chemical Abstract Service	CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act	CHEMTREC= Chemical Transportation Emergency Center
CNS=Central Nervous System	CWA=Clean Water Act	DOT=Department of Transportation
EC_{50}= Effective Concentration Fifty	EPA=Environmental Protection Agency	g/Kg=Grams per Kilogram
g/M^3=Grams per Cubic Meter	GHS=Global Harmonization System	H_2O=Water
HAP=Hazardous Air Pollutants	HMIS= Hazardous Materials Identification System	IARC= International Agency for Research on Cancer
LC_{50}=Lethal Concentration Fifty	LD_{50}=Lethal Dose Fifty	LEL=Lower Explosive Limit
Log P_{ow} =Octanol/water partition coefficient	mg/Kg=Milligrams per Kilogram	mg/L=Milligrams per Liter
mL/Kg=Milliliters per Kilogram	mm HG=millimeters of mercury	N.O.S=Not Otherwise Specified
NFPA=National Fire Protection Association	NIOSH= National Institute for Occupational Safety and Health	NTP=National Toxicology Program
OSHA=Occupational Safety and Health Administration	PEL=Permissible Exposure Limit	ppm=Parts per Million
RCRA=Resource Conservation and Recovery Act	RQ=Reportable Quantities	RTECS=Registry of Toxic Effects of Chemical Substances
SARA= Superfund Amendments and Reauthorization Act	SDS=Safety Data Sheet	STEL=Short Term Exposure Limit
STOT=Single Target Organ Toxicity	TLV=Threshold Limit Value	TPQ=Threshold Planning Quantity
TSCA=Toxic Substance and Control Act	TWA=Time Weighted Average	UEL=Upper Explosive Limit

SDS REVISIONS: Reviewed and updated all Sections

SDS CREATION DATE: 06/16/15 **REVISION #1:** 10/11/22

DISCLAIMER

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SDS DEVELOPER: Cass Willard

Cass Willard, CIH

DATE: 10/11/22