

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Steel Wire Products

Intended Use of the Product

Use Of The Substance/Mixture: For professional use only.

Name, Address, and Telephone of the Responsible Party

Company

National Standard	National Standard
1631 Lake Street	3602 North Perkins Road
Niles, MI 49120	Stillwater, OK 74075
(269) 683-8100	(405) 377-5050

Emergency Telephone Number

Emergency Number : (269) 683-8100 (405) 377-5050

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS-US/CA Classification

Not classified

Label Elements

GHS-US/CA Labeling

No labeling applicable

Other Hazards

This product is present in its massive form as a wire alloy. It does not present the same hazards when the individual components are in their powdered forms, or when the material is processed, heated, or welded. The materials present in this product in their powdered forms presents various physical and health hazards. Exposure to dust generated from processing (based upon the individual materials) may be sensitizing, cause organ damage, cause cancer, and be irritating to the skin, eyes, and respiratory system. In powdered form the individual ingredients within this material are harmful to the aquatic environment. When processed or where dust is generated a combustible dust hazard may be present. Avoid generating dust. Under normal conditions of use and handling in the wire form, harmful quantities are not expected to be released, nor is the wire considered flammable. Much of the information provided in this SDS is for situations of use in which hazardous exposures may occur, such as downstream processing, or for metals in powdered form.

Unknown Acute Toxicity (GHS-US/CA)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% *	GHS Ingredient Classification
Iron	(CAS No) 7439-89-6	99	Comb. Dust
Manganese	(CAS No) 7439-96-5	< 1	Comb. Dust
Nickel	(CAS No) 7440-02-0	< 0.1	Comb. Dust Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

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SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Wash with plenty of soap and water. Obtain medical attention if irritation develops or persists. In molten form: Cool skin rapidly with cold water after contact with molten product. Removal of solidified molten material from skin requires medical assistance.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention. In molten form: Removal of solidified molten material from the eyes requires medical assistance.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Under normal conditions of use, not expected to present a significant hazard. During processing or physical alteration, flakes or powder cause irritation of the respiratory tract, eyes, skin, and are harmful. Molten material may release toxic, and irritating fumes.

Inhalation: Not expected to present a significant inhalation hazard under anticipated conditions of normal use.

Skin Contact: Prolonged exposure may cause skin irritation. May cause an allergic reaction in sensitive individuals.

Eye Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Ingestion: Ingestion is not considered a potential route of exposure.

Chronic Symptoms: None expected under normal conditions of use. Repeated inhalation of iron oxide dust can cause siderosis a benign condition. Manganese: Chronic exposure can cause inflammation of the lung tissue, scarring the lungs (pulmonary fibrosis). Chronic exposure to excessive manganese levels can lead to a variety of psychiatric and motor disturbances, termed manganism. Nickel metal powder, when respirable, is a suspected human carcinogen, and is known to cause damage to the lungs through inhalation.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire. Do not use water when molten material is involved, may react violently or explosively on contact with water.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable. Dust, chips, or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp.

Explosion Hazard: Product is not explosive. However, it may release explosive hydrogen gas upon thermal decomposition. Dust from processing could create a combustible dust hazard.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

Firefighting Instructions: Do not breathe fumes from fires or vapors from decomposition. Use water stream to cool containers. Keep upwind.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Thermal decomposition generates: Carbon oxides (CO, CO₂). Oxides of manganese. Oxides of nickel.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not handle until all safety precautions have been read and understood.

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For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Recover the product by vacuuming, shoveling or sweeping. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Avoid generation of dust during clean-up of spills.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Use care during processing to minimize generation of dust. Welding, cutting, or processing this material may release dust or fumes that are hazardous. This product in its wire form presents a minimal hazard. Under processing conditions fumes and dust can be formed that cause irritation to the eye, skin, and respiratory tract. Inhalation of dusts and fumes from processing can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath. Dusts generated from processing can present a combustible dust hazard when dust clouds are dispersed in air with an ignition source. Also molten material may present a thermal burn hazard and may react violently with moisture/water. Avoid generation of dust and fumes and follow applicable regulations.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool place. Store away from incompatible materials.

Incompatible Materials: Mineral acids. Strong acids. Strong bases. Strong oxidizers. Corrosive substances in contact with metals may produce flammable hydrogen gas. When molten or in dust form: water.

Specific End Use(s)

For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Manganese (7439-96-5)		
Mexico	OEL TWA (mg/m ³)	0.2 mg/m ³ 1 mg/m ³ (fume)
Mexico	OEL STEL (mg/m ³)	3 mg/m ³ (fume)
USA ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	5 mg/m ³ (fume)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³ (fume)
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	3 mg/m ³

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USA IDLH	US IDLH (mg/m ³)	500 mg/m ³
Alberta	OEL TWA (mg/m ³)	0.2 mg/m ³
British Columbia	OEL TWA (mg/m ³)	0.2 mg/m ³
Manitoba	OEL TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
New Brunswick	OEL TWA (mg/m ³)	0.2 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
Nunavut	OEL Ceiling (mg/m ³)	5 mg/m ³
Nunavut	OEL STEL (mg/m ³)	3 mg/m ³ (fume)
Nunavut	OEL TWA (mg/m ³)	1 mg/m ³ (fume)
Northwest Territories	OEL STEL (mg/m ³)	0.6 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	0.2 mg/m ³
Ontario	OEL TWA (mg/m ³)	0.2 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
Québec	VEMP (mg/m ³)	0.2 mg/m ³ (total dust and fume)
Saskatchewan	OEL STEL (mg/m ³)	0.6 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	0.2 mg/m ³
Yukon	OEL Ceiling (mg/m ³)	5 mg/m ³
Nickel (7440-02-0)		
Mexico	OEL TWA (mg/m ³)	1 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Suspected as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.015 mg/m ³
USA IDLH	US IDLH (mg/m ³)	10 mg/m ³
Alberta	OEL TWA (mg/m ³)	1.5 mg/m ³
British Columbia	OEL TWA (mg/m ³)	0.05 mg/m ³
Manitoba	OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
New Brunswick	OEL TWA (mg/m ³)	1 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
Nunavut	OEL STEL (mg/m ³)	2 mg/m ³
Nunavut	OEL TWA (mg/m ³)	1 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	3 mg/m ³ (inhalable fraction)
Northwest Territories	OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
Ontario	OEL TWA (mg/m ³)	1 mg/m ³ (inhalable)
Prince Edward Island	OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
Québec	VEMP (mg/m ³)	1 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	3 mg/m ³ (inhalable fraction)
Saskatchewan	OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
Yukon	OEL STEL (mg/m ³)	3 mg/m ³
Yukon	OEL TWA (mg/m ³)	1 mg/m ³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Avoid dust production. Avoid creating or spreading dust. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

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Materials for Protective Clothing: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Wear suitable protective clothing.

Hand Protection: Wear protective gloves. If material is hot, wear thermally resistant protective gloves.

Eye Protection: Safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental Exposure Controls: Do not allow dust, chips, or ribbons to be released into the environment.

Other Information: When using, do not eat, drink or smoke

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Steel Wire Products are solid metal, shaped as wire of various diameters.
Odor	: Not available
Odor Threshold	: Not applicable
pH	: Not applicable
Evaporation Rate	: Not applicable
Melting Point	: 2700 °F (1482.22 °C)
Freezing Point	: Not applicable
Boiling Point	: Not applicable
Flash Point	: Not applicable
Auto-ignition Temperature	: Not applicable
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not applicable
Upper Flammable Limit	: Not applicable
Vapor Pressure	: Not applicable
Relative Vapor Density at 20°C	: Not applicable
Relative Density	: Not available
Specific Gravity / Density	: 489.6 lb/ft ³
Specific Gravity	: Not available
Solubility	: Not applicable
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight, extremely high or low temperatures, and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Mineral acids. Corrosive substances in contact with metals may produce flammable hydrogen gas. When molten or in dust form: water.

Hazardous Decomposition Products: Under normal conditions of storage and use, hazardous decomposition products will not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

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Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Not expected to present a significant inhalation hazard under anticipated conditions of normal use.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation. May cause an allergic reaction in sensitive individuals.

Symptoms/Injuries After Eye Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure.

Chronic Symptoms: None expected under normal conditions of use. Repeated inhalation of iron oxide dust can cause siderosis a benign condition. Manganese: Chronic exposure can cause inflammation of the lung tissue, scarring the lungs (pulmonary fibrosis). Chronic exposure to excessive manganese levels can lead to a variety of psychiatric and motor disturbances, termed manganism. Nickel metal powder, when respirable, is a suspected human carcinogen, and is known to cause damage to the lungs through inhalation.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Manganese (7439-96-5)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.14 mg/l/4h
Nickel (7440-02-0)	
LD50 Oral Rat	> 9000 mg/kg
Nickel (7440-02-0)	
IARC Group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Not classified.

Manganese (7439-96-5)	
NOEC Chronic Fish	3.6 mg/l (Exposure time: 96h; Species: Oncorhynchus mykiss)
Nickel (7440-02-0)	
LC50 Fish 1	100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	121.6 µg/l (Exposure time: 48h - Species: Ceriodaphnia dubia [static])
LC50 Fish 2	15.3 mg/l
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 2	0.174 (0.174 - 0.311) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

Persistence and Degradability

Steel Wire Products	
Persistence and Degradability	Not established.

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Bioaccumulative Potential

Steel Wire Products	
Bioaccumulative Potential	Not established.

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations

Additional Information: Recycle where possible and/or dispose of spent material such as metals & metal-bearing waste and submerged arc welding (SAW) flux/slag appropriately.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

In Accordance with DOT Not regulated for transport

In Accordance with IMDG Not regulated for transport

In Accordance with IATA Not regulated for transport

In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Iron (7439-89-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %
Nickel (7440-02-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb (only applicable if particles are < 100 µm)
SARA Section 313 - Emission Reporting	0.1 %

US State Regulations

Nickel (7440-02-0)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Manganese (7439-96-5)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Nickel (7440-02-0)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances	
U.S. - Pennsylvania - RTK (Right to Know) List	

Canadian Regulations

Iron (7439-89-6)	
Listed on the Canadian DSL (Domestic Substances List)	

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Manganese (7439-96-5)

Listed on the Canadian DSL (Domestic Substances List)

Nickel (7440-02-0)

Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 09/09/2016

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
Comb. Dust	May form combustible dust concentrations in air
H317	May cause an allergic skin reaction
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

NA GHS SDS 2015 (US, Can, Mex)