

**1. Identification**

Product Identifier: **Mill Galvanized Steel Wire Products**

Manufacturer:

Hohmann & Barnard, Inc.  
30 Rasons Court  
Hauppauge, NY 11788  
(631) 234-0600  
www.h-b.com

Telephone Numbers

During normal business hours call: (800) 645-0616  
24-hour emergency call Chemtrec: (800) 255-3924

Recommended use: Various mill galvanized steel wire rod products for masonry construction projects.

Recommended restrictions: None known.

**2. Hazards Identification**

Signal Word: DANGER



GHS Label Statements:

- Suspected of causing cancer.
- Suspected of damaging fertility or the unborn child.
- Causes damage to lungs through prolonged or repeated inhalation exposure.
- Harmful if swallowed.
- May cause an allergic skin reaction.
- May cause respiratory irritation.
- Causes eye irritation.

GHS Classifications:

- This product is considered hazardous by The 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Carcinogenicity-2
- Single Target Organ
- Acute Toxicity-Oral 4
- STOT Single Exposure - 3
- Toxic to Reproduction - 2
- Toxicity (STOT) Repeat Exposure - 1
- Skin Sensitization - 1
- Eye Irritation - 2B

Steel products in their sold state present no inhalation, ingestion, or contact hazard. Operations such as burning, welding, sawing, brazing, grinding, and machining, which result in the generation of airborne particulates, may present hazards to the respiratory system.

**SHORT-TERM (ACUTE) EXPOSURE:** Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose and throat. High concentrations of fumes of iron-oxide, zinc, lead and manganese may result in metal fume fever. Metal Fume Fever is characterized by chills, fever, vomiting, irritation of throat, upset stomach, and body aches and siderosis.

**LONG-TERM (CHRONIC) EXPOSURE:** Chronic and prolonged inhalation of high concentration of fumes or dust may lead to the following conditions:

- Iron-Oxide = Benign pneumoconiosis with X-ray shadows indistinguishable from fibrotic pneumoconiosis (siderosis).
- Lead = Anemia, urinary dysfunction, weakness, constipation, nausea, nervous disorder. Lead is listed as a Group 2B possible human carcinogen by IARC.
- Zinc Oxide= May cause metal fume fever. Gastrointestinal inflammation reported in animal studies. Manganese = Bronchitis, pneumonitis, and lack of coordination.
- Nickel = Lesions of the skin and mucos membranes, possible cancer of the nose and lungs-Bronchogenic Carcinoma. Nickel is listed as a Group 2B possible human carcinogen by IARC.

**PRECAUTIONARY STATEMENTS:**

- Do not breathe dusts / fume / spray.
- Wear protective gloves / protective clothing / eye protection / face protection.
- Contaminated work clothing must not be allowed out of the workplace.
- Use only outdoors or in well ventilated areas.

Wash thoroughly after handling.  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Do not eat, drink or smoke when using this product.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 If exposed, concerned or feel unwell: Get medical advice/attention.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If on skin: Wash with plenty of water. If irritation or rash occurs:  
 Get medical advice/attention. Take off contaminated clothing and wash before reuse.  
 Dispose of contents in accordance with federal, state and local regulations.

Hazards Not Otherwise Classified: None Known  
 Unknown Acute Toxicity Statement (mixture): None Known

### 3. Composition/Information on Ingredients

Component	CAS #	% Composition
Iron	7439-89-6	Balance
Zinc	7440-66-6	0-8.0
Manganese	7439-96-5	0-1.00
Nickel	7440-02-0	0-0.10
Lead	7439-92-1	0-0.10
	7439-89-6	≤0.75

### 4. First-Aid Measures

Eye Exposure: Flush eyes with plenty of water or saline for at least 15 minutes. SEEK MEDICAL ATTENTION.  
Skin Exposure: Wash skin with soap and water for at least 15 minutes. If irritation develops, SEEK MEDICAL ATTENTION.  
Inhalation: Move to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, give oxygen. SEEK MEDICAL ATTENTION.  
Ingestion:  
 Never give fluids or induce vomiting if the victim is unconscious or having convulsions. SEEK MEDICAL ATTENTION.

### 5. Fire-fighting measures

#### Fire Hazard Data:

##### *Flammable Properties*

This product does not present fire or explosion hazards as shipped. Small chips, turnings, dust, and fines from processing may be readily ignitable.

##### *Fire/Explosion*

May be potential hazard under the following conditions:

Dust or fines dispersed in the air can be explosive. Even a minor dust cloud can explode violently. Chips, dust or fines in contact with water can generate flammable/explosive hydrogen gas. Hydrogen gas could present an explosion hazard in confined or poorly ventilated spaces. Fines and dust in contact with certain metal oxides (e.g., rust), molten metal in contact with water/moisture or other metal oxides (e.g., rust) and moisture entrapped by molten metal can be explosive.

#### Extinguishing Media:

Use Class D extinguishing agents on dusts, fines, or molten metal. Use coarse water spray on chips and turnings.

#### Special Fire Fighting Procedures:

Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus, and full protective clothing when appropriate. Avoid breathing metal oxide fumes, which may cause metal fume fever.

#### Unusual Fire and Explosion Hazards:

When heated beyond melting point, metal vapor burns in the air with a bright greenish-yellow flame to produce zinc oxide fumes.

### 6. Accidental release measures

#### Cleanup and Disposal of Spill:

Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this MSDS (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, sewers, or waterways. Discard any product, residue, disposable container, or liner in full compliance with federal, state, and local regulations.

### 7. Handling and storage

Product should be kept dry. Avoid generating dust. Avoid contact with sharp edges or heated metal.

PACKAGES OF THIS MATERIAL MAY CONTAIN EXTREME INTERNAL STRESSES AND STORED MECHANICAL ENERGY. USE STANDARD INDUSTRY PRACTICES AND/OR CONSULT YOUR COMPANY'S SAFETY DEPARTMENT FOR PROPER PROCEDURES FOR HANDLING, OPENING, AND CUTTING.

Requirements for Processes, Which Generate Dusts or Fumes

If processing of these products includes operations where dust or extremely fine particulate is generated, obtain and follow the safety procedures and equipment guides contained in National Fire Protection Association (NFPA) brochure listed in Section 16. Cover and reseal partially empty containers. Use non-sparking handling equipment. Provide grounding and bonding where necessary to prevent accumulation of static charges during dust handling and transfer operations (See Section 16). Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used. Avoid all ignition sources. Good housekeeping practices must be maintained.

**8. Exposure controls/personal protection**

Engineering Controls

Use with adequate explosion-proof ventilation to meet the limits listed in Section 8.

Personal Protective Equipment

Respiratory Protection: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8.

Eye Protection: Wear safety glasses/goggles to avoid eye contact.

Skin Protection: Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils and to avoid any skin injury.

General

Personnel who handle and work with molten metal should utilize primary protective clothing like face shields, fire resistant tapper's jackets, leggings, spats, and similar equipment to prevent burn injuries. In addition to primary protection, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal.

Minimize breathing oil vapors and mist from those products coated with oil. Remove oil-contaminated clothing; launder or dry-clean before reuse. Remove oil contaminated shoes and thoroughly clean and dry before reuse.

Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work period. Oil coating is readily removed from skin with waterless hand cleaners followed by a thorough washing with soap and water.

Component	ACGIH	NIOSH	OSHA-PELs
Iron	ND	ND	ND
Manganese	TWA 0.2 mg/m3	ND	Ceiling 5 mg/m3
Nickel	TWA 1.5 mg/m3	ND	1 mg/m3
Zinc Oxide	TWA 10 mg/m3; (Inhalable particulate matter containing no asbestos and <1% crystalline silica) TWA 5 mg/m3: STEL 10mg/m3	(fume): 5 mg/m3 TWA, 10 mg/m3 STEL REL (total dust): 5 mg/m3 TWA, 15 mg/m3 TWA ceiling (15-min)	Total dust: 15 mg/m3; Respirable fraction: 5.0 mg/m3

**9. Physical and chemical properties**

Appearance (physical state, color, etc.): Metallic Gray, Odorless

Odor: NA

Odor Threshold: NA

pH: NA

Melting Point: 2800°F / 621.37 °F lead

Partition Coefficient n-octanol/water: ND

Auto-ignition Temperature: NA

Decomposition Temperature: ND

Viscosity: NA

Upper/lower Flammability or Explosive Limits: NA

Vapor Pressure: NA

Vapor Density (Air = 1): NA

Relative Density: 7.85 g/cc Coating: 7.14 g/cc

Solubility(ies): Insoluble

Flash Point: NA

Evaporation Rate: NA

Flammability (solid, gas): Non-flammable, non-combustible

NA - Not Applicable

ND - Not Determined for product as a whole

**10. Stability and reactivity**

Stability: Stable under normal conditions of use, storage, and transportation as shipped.

Conditions to Avoid : Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume.

Hazardous Polymerization: Will not occur

Incompatibility/Materials to Avoid: Reacts with strong acids to form hydrogen gas. Hydrogen peroxide will react violently in contact

with lead. (Water reacts violently with molten metals).

Hazardous Decomposition Products: Fumes and certain noxious gases, such as CO, may be produced from welding or burning operations. Lead oxide fumes can result if temperatures exceed the melting point for lead, 621.37 °F.

## **11. Toxicological information**

### Health Effects of Ingredients

#### A: General Product Information

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 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 effected area. Ingestion overexposure to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron oxide, has been listed as potentially carcinogenic by IARC.

When this product is welded, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals (see above), and welding fumes as a general category have been listed by IARC as a carcinogen (Group B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects. Evidence is stronger where welding materials contain known reproductive toxins, e.g., lead which may be present in the coating material of this product.

Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides.

These oxides are produced by heating various metals including manganese, zinc and iron. Prolonged exposure to manganese dusts or fumes is associated with "manganism," a Parkinson-like syndrome characterized by a variety of neurological symptoms including muscle spasms, gait disturbances, tremors, and psychoses.

#### B: Component Analysis – LD50/LC50

Manganese (7439-96-5)

Oral LD50 Rat: 9gm/kg

### Carcinogenicity

#### A. General Product Information

No information available for product.

## **12. Ecological Information**

#### A: General Product Information

No information available for product.

#### B: Component Analysis – Ecotoxicity – Aquatic Toxicity

No ecotoxicity data was found for this product's components.

#### Environmental Fate

No information found for product.

## **13. Disposal Considerations**

### Disposal Instructions

Reuse or recycle material whenever possible. Material may be disposed of at an industrial landfill.

### US EPA Waste Number & Descriptions

#### A. General Product Information

RCRA Status: Must be determined at time material is disposed. If material is disposed as waste, it must be characterized under RCRA according to 40 CFR, Part 261, or state equivalent in the U.S.

#### B. Component Waste Numbers

RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalent in the U.S.

## **14. Transport information**

US Department of Transportation Shipping Name: Not regulated

**15. Regulatory Information**

US Federal Regulations

Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4)

Manganese (7439-96-5)

SARA 313: form R reporting required for 1.0% de minimis concentration

Nickel (7440-47-3)

SARA 313: form R reporting required for 0.1% de minimis concentration

Zinc (7440-66-6)

SARA 313: form R reporting required for 1.0% de minimis concentration

Lead (7439-92-1)

SARA 313: form R reporting required for 100 pound processing, manufacturing, and otherwise used threshold

SARA 311/312 Physical and Health Hazard Categories:

Immediate (acute) Health Hazard: Yes, if particulates/fumes generated during processing.

Delayed (chronic) Health Hazard: Yes, if particulates/fumes generated during processing.

Fire Hazard: No

Sudden Release of Pressure: No

Reactive: Yes, if molten

State Regulations

Component Analysis – State

The following components appear on one or more of the following state hazardous substances list:

Component	CA	MA	MI	NJ	PA
Iron	No	No	No	No	No
Manganese	No	Yes	No	Yes	Yes
Nickel	No	Yes	Yes	Yes	Yes
Zinc	No	Yes	Yes	Yes	Yes
Lead	Yes	Yes	Yes	Yes	Yes

The following statement is provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Other Regulations

A: General Product Information

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

B: Components Analysis – WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component CAS # Minimum Concentration

Manganese 7439-96-5 1% item 974(1077)

**16. Other information**

Issue Date: May 31, 2015

Revision Date: May 31, 2015

Disclaimer: All information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, Hohmann & Barnard extends no warranties or guarantees, express or implied, makes no representations, and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. Since the actual use of the product described herein is beyond our control, POSCO assumes no liability arising out of the use of the product by others. It is the user's responsibility to determine the suitability of the information presented herein, to assess the safety and toxicity of the product under their own conditions of use, and to comply with all applicable laws and regulations. Appropriate warnings and safe handling procedures should be provided to handlers and users.

