

# SAFETY DATA SHEET

Revision Date – May 2024

## 1. Product and Company Information

Trade Name: Carbon Steel Wire, PC Strand, and Welded Wire Reinforcement

Product Use: Primarily concrete reinforcement; other applications may also apply

Manufacturer List & Emergency Phone Number:

Insteel Wire Products – AZ  
4750 Olympic Way  
Kingman, Arizona 86402  
928-692-1001

Insteel Wire Products – FLW  
3050 Melson Avenue  
Jacksonville, Florida 32254  
904-354-8552

Insteel Wire Products – FLS  
1 Wiremil Road  
Sanderson, Florida 32087  
904-275-2100

Insteel Wire Products – KY  
3325 State Road 1099  
Hickman, Kentucky 42050  
270-236-2325

Insteel Wire Products – MO  
810 Atchison Street  
St. Joseph, Missouri 64503  
816-233-1177

Insteel Wire Products – NC  
1510 Carter Street  
Mount Airy, NC 27030  
336-719-9000

Insteel Wire Products – PA  
501 Forest Drive  
Hazle Township, PA 18202  
570-450-2090

Insteel Wire Products – TN  
630 National Drive  
Gallatin, Tennessee 37066  
615-451-6330

Insteel Wire Products – TXW  
500 Klemp Road  
Dayton, Texas 77535  
936-258-7625

Insteel Wire Products – TXS  
11020 Tanner Road  
Houston, TX 77041  
713-937-7178

## 2. Hazard Identification

Under normal handling and use, exposure to steel wire, welded wire reinforcement or PC strand presents few health hazards. Thermal cutting and welding may produce fumes or dust which could be inhaled and be potentially hazardous. The exposure levels in Section 3 and hazard statements in section 2 b) relate to acute fume and dust exposure.

- a) GHS classification
  - Carcinogenicity (Category 2)
  - Skin Sensitization (Category 1)
  - Specific Target Organ Toxicity-Repeated Exposure (Category 1)

- b) GHS label elements



Symbol names: “Health hazard”, “Irritant”

Note: the following hazard statements may apply to acute fume/dust exposure:

H317: May cause an allergic skin reaction.

H351: Suspected of causing cancer via inhalation.

H372: Causes damage to respiratory tract through prolonged or repeated exposure

Note: the following precautionary statements may apply to acute fume/dust exposure:

P202: Do not handle until all safety precautions have been read and understood.

P261: Avoid breathing dust/fumes.

P281: Use personal protective equipment as required.

P308 + P313: If exposed or concerned get medical advice/attention.

### 3. Composition

a) Chemical identity:

| Principal Hazardous Components | CAS #     | Percent | TLV                                     | OSHA PEL               | Levels Referring To              |
|--------------------------------|-----------|---------|---|------------------------|----------------------------------|
| Iron                           | 1309-37-1 | 93 – 99 | 5 Mg/m <sup>3</sup><br>(Respirable)     | 10 Mg/m <sup>3</sup>   | As dust or welding fumes         |
| Manganese                      | 7439-96-5 | 0 – 2.5 | 5 Mg/m <sup>3</sup>                     | 5 Mg/m <sup>3</sup>    | As total dust                    |
| Silicon                        | 7440-21-3 | 0 – 1.5 | 10 Mg/m <sup>3</sup>                    | 10 Mg/m <sup>3</sup>   | As total dust                    |
| Chromium                       | 7440-47-3 | 0 – 1.0 | 0.5 Mg/m <sup>3</sup>                   | 1 Mg/m <sup>3</sup>    | As chromium metal (Cr)           |
| Molybdenum                     | 7439-98-7 | 0 – 1.0 | 5 Mg/m <sup>3</sup>                     | 5 Mg/m <sup>3</sup>    | As soluble Mo                    |
| Carbon                         | 7440-44-0 | 0 – 1.0 | 3.5 Mg/m <sup>3</sup> (as carbon black) | 15 Mg/m <sup>3</sup>   | As graphite                      |
| Lead                           | 7439-92-1 | 0 – 1.0 | 0.05 Mg/m <sup>3</sup>                  | 0.05 Mg/m <sup>3</sup> | As dust/fume                     |
| Nickel                         | 7440-02-0 | 0 – 1.0 | 1.5 Mg/m <sup>3</sup>                   | 1 Mg/m <sup>3</sup>    | As metal and insoluble compounds |

All commercial steel products contain small amounts of various elements in addition to those listed. These small quantities are frequently referred to as “trace” or “residual” elements that generally originate in the raw materials used. Steel products may contain the following trace or residual elements: antimony, arsenic, beryllium, cadmium, cobalt and sulfur.

b) Synonyms or common product names:

Wire: Bright Basic Wire, Formed Wire, Spiral Wire;

Welded Wire Reinforcement: Mesh; Wire Mesh; Welded Wire Mesh; Welded Wire Fabric; Welded Wire Cloth

PC Strand: Prestressing Steel Strand; Prestressed Concrete Strand; Uncoated Seven-Wire Strand for Prestressed Concrete

### 4. First Aid Measures

a) Description of necessary measures

Eye Contact - Flush thoroughly with running water to remove particulate.

Skin Contact - Brush off excess dust and wash area thoroughly with soap and water.

Inhalation - Remove to fresh air.

Ingestion - Seek medical attention.

b) Significant symptoms/effects, acute and delayed.

Eye Contact

Dust, particulates, or fumes may cause irritation including pain and redness. Rubbing of the eye may result in scratching of the cornea. Contact with heated material may cause thermal burns.

Skin Contact

Dust or particulates may cause mechanical irritation due to abrasion. Some components in this product are capable of causing an allergic reaction, possibly resulting in burning, itching, and skin eruptions. Contact with heated material may cause thermal burns.

#### Inhalation

Dust may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dust may result in metal fume fever, an influenza-like illness characterized by a sweet or metallic taste in the mouth accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever, and chills. Typical symptoms last from 12 to 48 hours.

#### Ingestion

Not expected to be acutely toxic via ingestion based on the physical and chemical properties of the product. Swallowing excessive amounts of dust may cause irritation, nausea, and diarrhea.

#### Chronic or Special Toxic Effects

Repeated exposure to fine dust may inflame the nasal mucosa and cause changes to the lung. In addition, a red-brown pigmentation of the eye and/or skin may occur. Welding fumes have been associated with adverse health effects. Product contains suspected carcinogens.

#### Target Organs

Overexposure to dust or fumes may cause adverse effects to the following organs or systems: eyes, skin, liver, kidney, central nervous system, cardiovascular system, respiratory system.

#### Medical Conditions Aggravated by Exposure

Exposure may aggravate skin diseases such as eczema or respiratory disorders including asthma, bronchitis, and emphysema. Long-term inhalation exposure to agents that cause pneumoconiosis (e.g. dust) may act synergistically with inhalation of oxide fumes/dust from this product.

- c) Indication of immediate medical attention and special treatment needed, if necessary.  
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 fumes/dust may result in pneumoconiosis of mixed type.

### 5. Fire-Fighting Measures

- a) Extinguishing Media – Use dry powder or sand for molten metal; for steel dust use dry sand, water, foam, argon or nitrogen. Do not use water as extinguishing media for molten metal; do not use carbon dioxide for molten metal or dust.
- b) Unusual Fire or Explosion Hazards - Steel products do not present fire or explosion hazards under normal conditions. Any non-oxidized fine metal particles/dust generated by grinding or other related processes may produce materials that should be tested for combustibility by the customer. High concentrations of combustible metallic fines in the air may present an explosion hazard.
- c) Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

### 6. Accidental Release Measures

Precautions if Material is Spilled or Released - 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 section 8. Keep fine dust or powder away from sources of ignition. Heavy concentrations of airborne dust may be minimized by vacuuming or wet-sweeping dusty areas. Clean-up personnel should wear respirators and protective clothing.

Fire and Explosion Hazards - Some customer processes may generate combustible dust that may require specific precautions when cleaning spills or releases of dust.

Environmental Precautions – Prevent dust or particulates from entering drains, sewers, or waterways. Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information.

Waste Disposal Methods - Dispose used or unused product in accordance with applicable Federal, State, and Local regulations.

## 7. Handling and Storage

Precautions for Safe Handling - Exercise care during grinding, welding and cutting operations to minimize airborne particles and fumes. Wear respirators; avoid breathing dust or fumes. Use good housekeeping practices to prevent accumulations of dust. Dust and/or particulates may form explosive mixtures with air. Applicable Federal, state and local laws and regulations may require testing dust generated from processing of steel products to determine if it represents a fire or explosion hazard and to determine appropriate protection methods.

Storage conditions - Stable under normal temperatures and pressures. Store away from strong oxidizers.

## 8. Exposure Controls/Personal Protection

Eye Protection - Safety glasses, eyewash stations

Skin Protection - Protecting clothing including footwear

Respiratory Protection (Specific Type) - MSHA or NIOSH approved respirators

Ventilation Recommended - Use exhaust ventilation

Other Protection - No food consumption in area of concentrations of dust or vapor.

## 9. Physical and Chemical Properties

- a) Appearance (physical state, color etc.): grey or black solid metallic wire; slight oxide coloration (i.e. blue) possible on PC strand;
- b) Odor: (N/A)
- c) Melting point/freezing point: (MP: ~2700 – 2800 degrees F)
- d) Flash point: (N/A)
- e) Evaporation rate: (N/A)
- f) Flammability (solid, gas): (N/A in bulk form); see sections 5 and 6 for flammability of dust or powder
- g) Upper/lower flammability or explosive limits: (N/A)
- h) Vapor pressure: (N/A)
- i) Solubility(ies): not soluble in water, oil, or alcohol-based reagents
- j) Auto-ignition temperature: (N/A)

## 10. Stability and Reactivity

Stability – Chemically stable

Reactivity/Incompatibility – Strong acids or caustics may produce H<sub>2</sub> gas; do not store near strong oxidizers

Hazardous Decomposition Products – Welding, cutting or grinding may cause metal fumes or dust (see section 4).

Keep fine dust or powder away from sources of ignition.

## 11. Toxicological information

Under normal handling and use, exposure to steel wire, welded wire mesh or PC strand presents few health hazards. Thermal cutting and welding may produce fumes which could be inhaled and be potentially hazardous. The exposure levels in Section 3 relate to fumes and dust.

Chronic overexposure to iron oxide fumes may cause benign pneumoconiosis with symptoms that include chronic bronchitis, emphysema, and shortness of breath upon exertion. Overexposure to dusts and metal fumes from the

ferrous alloy elements may cause irritation to the skin, nose, mouth and eyes and lung and affect the gastrointestinal, nervous, and hemotopoietic systems. Chronic health effects (including cancer) have been associated with the welding fumes of individual component metals.

Fumes of manganese may cause metal fume fever with flu-like symptoms. Prolonged exposure to manganese dust or fumes may lead to “manganism”, a neurological syndrome with symptoms including tremors, reduced response speed, irritability, and gait and balance difficulties.

Chromium has been identified as potential human carcinogen. Cancer is generally attributed to the hexavalent (+6) form of chromium which is listed as a carcinogen by NTP and IARC (Group 1). In addition, prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is a skin sensitizer.

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation, and systemic effects. Following overexposure, reported symptoms include chronic bronchitis, green tongue, conjunctivitis, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic reactions resulting from skin and inhalation exposures have also been reported. Vanadium currently is not regarded as a human carcinogen.

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with central nervous system disorders, anemia, and kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as an IARC 2B carcinogen.

The product may contain small amounts of copper. Copper dust and fumes can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated copper fume inhalation include discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction. Overexposure to copper can affect the liver.

## **12. Ecological information**

No specific information is available regarding this product.

## **13. Disposal information**

Dispose in accordance with federal, state, and local health/environmental regulations. Prevent materials from entering drains, sewers, or waterways. Recycling is encouraged.

## **14. Transport Information**

- a) UN number: N/A
- b) UN proper shipping name: N/A
- c) Transport hazard class(es): Not regulated
- d) Environmental hazards: N/A
- e) Special shipping precautions: N/A

## **15. Regulatory Information**

*The following listing of regulations relating to an IWP product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

**OSHA Regulations:**

This product is not hazardous under the criteria of the Federal OSHA Hazardous Communication Standard 29 CFR 1910.1200. However, dust and fumes from this product may be combustible or hazardous and require protection to comply with applicable Federal, State and local laws and regulations.

**EPA Regulations:**

RCRA: Chromium is regulated under this act.

Clean Water Act: Chromium is a Section 307 Priority Pollutant

Safe Drinking Water Act: Chromium, Iron, Manganese and Molybdenum are regulated under this act.

Toxic Substance Control Act (TSCA): Components of this product are listed on the TSCA Inventory

CERCLA Hazardous Substance (40 CFR 302.4): This product as a whole is not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III**

Section 311/312: Immediate (acute) health hazard and delayed (chronic) health hazard

This product contains EPCRA Section 313 chemicals subject to the reporting requirements of the Emergency Planning and Community Right-To-Know Act of 1986.

**State Regulations:**

California Proposition 65:



**WARNING.** This product can expose you to chemicals including antimony [oxide], arsenic, beryllium, chromium [hexavalent], cobalt, cadmium, lead, and nickel which are known to the State of California to cause cancer, and cadmium, lead, and sulfur [dioxide] which are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

This product may contain components subject to Massachusetts; Pennsylvania and New Jersey substance lists.

Other Regulations: The product as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

WHMIS (Canadian): D2B Product Classification

## **16. Other Information Including Information on Preparation of the SDS**

Prepared by Insteel Wire Products Company

**Hazard Rating System:**

NFPA Code: 0-0-0

HMIS Code: 0-0-0

PPE: See Section 8

Although Insteel Wire Products has attempted to provide current and accurate information herein, Insteel Wire Products cannot warrant the absolute correctness of this information. Insteel Wire Products also assumes no liability for any loss, damage or injury of any kind which may result from or arise out of the use of or reliance on this information by any person or organization.