



<u>Metallic Coating:</u>	<u>OSHA PEL</u>	<u>TLV</u>	<u>WT. %</u>
Zinc	(As Zinc Oxide) Dust 5 mg/M <sup>3</sup>	10 mg/M <sup>3</sup>	98.4%
Lead	Fume 5 mg/M <sup>3</sup> 0.050 mg/M <sup>3</sup>	5 mg/M <sup>3</sup> 0.150 mg/M <sup>3</sup>	1.0%

Superfund Amendments & Reauthorization Act - Title III  
 Applicability - Section 312, 40 CFR 370.40

Physical Hazard	Health Hazard
<input type="checkbox"/> Fire	<input checked="" type="checkbox"/> Acute
<input type="checkbox"/> Release of Pressure	<input checked="" type="checkbox"/> Chronic
<input type="checkbox"/> Reactivity	

Section 313 40 CFR 372.85: 7439-92-1 Lead Zinc Compounds

This material or the components of this material are included in the Toxic Chemical Inventory as required in Section 8(b) of the Toxic Substance Control Act (Public Law 94-469) and is codified in 40 CFR 720.

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**Section III** - Physical / Chemical Characteristics

MELTING POINT (Steel Wire):	2750 degrees F
VAPOR PRESSURE (Steel Wire):	N/A mm Hg @ 68 degrees F
VAPOR DENSITY (Steel Wire):	(Air = 1) N/A
APPEARANCE & ODOR (Coating):	Bluish-white metallic
EVAPORATION RATE (Coating):	No Data
SPECIFIC GRAVITY (Coating):	7.13
MELTING POINT (Coating):	788 Degrees F

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**Section IV** - Fire and Explosion Hazard Data

Not Applicable.

Special Fire Fighting Considerations: See Section V for decomposition products. When dealing with known or unknown thermal decomposition products, the use of Self Contained Breathing Apparatus (SCBA) and structural fire fighter's protective clothing will provide limited protection.

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**Section V** - Reactivity Data

Stable under normal conditions of use, storage and transport. Will react with strong acid to liberate hydrogen. At temperatures above the melting point, may liberate fumes containing oxides of iron and alloying elements.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Welding and burning on this product may cause the generation of a variety of noxious fumes and gases (e.g. carbon monoxide, zinc oxide fume, etc.)

**POLYMERIZATION:** Will not occur.

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**Section VI** - Health Hazard Data**HEALTH EFFECTS / SIGNS AND SYMPTOMS:**

**NOTE:** Steel products in their usual physical form do not pose any health hazards. However, when subjected to welding, burning, grinding, cutting, abrasive blasting, heat treatment, pickling, or similar operations, potentially hazardous fumes or dust may be emitted. Despite the fact that the welding, burning, etc. of steel products in this particular category may produce fumes containing manganese, chromium, nickel, and copper, the air concentrations generated of these components are expected to be extremely low. Special attention should be directed to the zinc coating which could be a significant source of zinc oxide fumes or dusts during welding or similar activities. The possible presence of non-metallic surface coatings should also be considered when evaluating potential employee exposures (See Additional or Miscellaneous Information in Section IX). The following is a list of fumes or dusts that may be generated from this steel product category and health effects associated with overexposure to them.

**SYMPTOMS: ACUTE:** Inhalation of high concentrations or iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentration of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. The inhalation of high concentrations of freshly formed oxide fumes and dusts of manganese, copper, lead, and/or zinc in the respirable particle size range can cause an influenza like illness termed metal fume fever. Typical symptoms last 12 to 38 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

**CHRONIC:** Excessive and repeated overexposure of nickel and chromium can cause various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract. Both chromium and nickel have been associated with upper respiratory cancer. Excessive and repeated overexposure of iron fumes can cause siderosis. Excessive and prolonged inhalation of manganese fumes can cause bronchitis, pneumonitis and lack of coordination.

**EMERGENCY FIRST AID:** For overexposure to airborne fumes and particles, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration (CPR) or oxygen as indicated. Seek medical attention promptly. Treat metal fume fever by bed rest, and administer a pain and fever reducing medication.

#### Chromium (Cr)

The toxicity and health hazards of chromium are heavily dependent upon its oxidation state. The elemental (as in the metal), divalent, and trivalent forms are of very low toxicity. The hexavalent form (such as occurs in chromates and chromic acid) is very toxic and can produce both acute and chronic effects. Adverse effects on the skin may include ulcerations, irritative dermatitis, and allergic skin reactions. Adverse effect on the respiratory system may include bronchospasms, edema, hypersecretion, bronchitis, irritation, allergic asthmatic reactions, and ulceration and perforation of the nasal septum. Respiratory symptoms may include coughing and wheezing, shortness of breath, and nasal itch. Eye irritation or inflammation can also be produced. Exposure to some hexavalent chromium compounds have also been shown to be associated with an increased risk of lung cancer.

#### Zinc (Zn)

Subjecting zinc or alloys containing zinc to high temperatures (such as occurs during welding) will cause the formation of zinc oxide. Exposure to zinc oxide fumes or dusts can result in a flu-like illness called metal fume fever. Early symptoms may include a sweet or metallic taste in the mouth, dryness and irritation of the throat, and coughing. These symptoms may progress to shortness of breath, headache, fever, chills, muscle aches, nausea, vomiting, weakness, fatigue, and profuse sweating. The attack may last 6-48 hours and is more likely to occur after a period away from the job.

**USUAL ROUTES OF ENTRY:** Inhalation

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED:** Chronic diseases or disorders of the respiratory system.

CARCINOGEN INFORMATION: NTP and IARC consider (1) chromium and certain chromium compounds to be known human carcinogens and (2) nickel and certain nickel compounds to be probable human carcinogens.

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**Section VII** - Spill, Leak, and Disposal Information

PROCEDURE TO FOLLOW IF MATERIAL IS RELEASED OR SPILLED: N/A

WASTE DISPOSAL METHOD: Any excess product can be recycled for further use, disposed in a permitted hazardous waste landfill, or disposed by other methods which are in accordance with local, state, and federal regulations.

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**Section VIII** - Personal Protection Equipment

Special protection information respiratory - NIOSH/MSHA - approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure. PROTECTIVE GLOVES - recommended. EYE PROTECTION - provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure. OTHER PROTECTIVE EQUIPMENT - Additional protective equipment and/or clothing may be required.

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**Section IX** - Additional or Miscellaneous Information:

Non-metallic coatings may be applied (often at customer's request) to the surface of steel products. These are usually classified as protective coatings or lubricants. For galvanized products, the typical non-metallic coatings are rust preventive oils, chromate treatment, or phosphate, borax and stearate soaps. The possible presence of these coatings should be recognized and considered when evaluating potential employee health hazards and exposures during welding or other dust/fume generating activities.

**STEEL GRADES**

**PRODUCT IDENTITY:** Manufacturers Wire. (By Grades) : 1002, 1006, 1008, 1010, 1016, 1018, 1019, 1020, 1022, 1025, 1026, 1030, 1035, 1037, 1038, 1039, 1040, 1045, 1050, 1055, 1060, 1065, 1070.