

Material Safety Data Sheet

Updated March 2010

Section 1 - Product Identification

Product Name: GALFAN[®] Galvanized Steel Wire Products

This MSDS covers all GALFAN[®] Galvanized Steel Wire Products manufactured by National Standard production facilities located at:

Davis Wire - Kent
 19411 80th Avenue South
 Kent, WA 98032
 (253) 867-1270

Section 2 - Hazard Identification

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.

Aluminum Oxide = High exposures to Aluminum Dust and Aluminum Oxides may cause irritation to the eyes and respiratory system.

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.

Section 3 – Hazardous Composition Information

Product Name

GALFAN[®] Galvanized Steel Wire Products

	Fe	Zn	Pb	Mn	Al	Ni
	92%	0.25-2.0%	0.25 – 2.0%	>1.0%	>0.25%	>0.1%

Ingredient	CAS No.	PEL ¹	TLV ²	REL ³	STEL ⁴	IDLH ⁵
Iron Oxide Fume (as Fe ₂ O ₃)	1309-37-1	10.0	5.0	5.0		2500
Zinc Oxide (ZnO)	1314-13-2	5.0	5.0	5.0	10.0	500
Lead (Pb)	7439-92-1	0.05		0.05		100
Manganese Fume (Mn)	7439-96-5	(C) 5.0 ⁶	0.2	1.0	3.0	500
Aluminum Oxide (Al ₂ O ₃)	1444-28-1	5.0	5.0	5.0		
Nickel (Ni)	7440-02-0	1.0	1.5	0.015		10

Notes: All values are in mg/m³.

Section 4 – First Aid Measures

EMERGENCY AND FIRST AID MEASURES: Remove from exposure and obtain medical attention. If victim is unconscious, administer oxygen. If not breathing, resuscitate immediately. If flu-like symptoms (cough, muscle pain, fever, chills, insomnia, or mental confusion) develop after use, obtain medical help immediately.

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Section 5 - Fire and Explosion Hazard Data

Flammability: This material is not flammable.

National Fire Protection Association (NFPA) Rating: Health - 1 Flammability - 0 Reactivity - 0

Section 6 - Spill or Leak Procedure

Spill of Leak Procedure: Not Applicable

Section 7 - Handling and Storage

Precautions: None

Section 8 - Exposure Controls & Personal Protection

No inhalation exposures unless performing welding, cutting, or grinding this product. If performing welding, cutting or grinding then:

VENTILATION: Use enough ventilation and/or local exhaust to keep fumes and gasses from you breathing zone and below all published exposure limits (See Section 3). To avoid exposure to metal fumes additional ventilation may be needed when welding on coated metals, such as painted, galvanized, or plated parts. Proper use of an appropriate respirator may be necessary when welding in a confined space, or if ventilation is inadequate. Train the welder to keep his head out of the fumes.

RESPIRATORY PROTECTION: For protection against Iron Oxide Particulate use air purifying respirator. Additional respiratory protection may be necessary. Employer should ensure employee exposures are below all published exposure levels for those substances identified in Section 3 of this MSDS.

EYE PROTECTION: Always wear safety glasses when sawing, brazing, grinding, or machining. Wear welding helmet or use face shield with filter lens, Shade No. 10 or darker when welding.

PROTECTIVE CLOTHING: Wear hand, head and body protection to prevent injury from cuts, scraps and wire pokes.

See OSHA *Safety and Health Standards*, available from the U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954, or at (www.osha.gov).

Section 9 - Physical and Chemical Properties

Galvanized Steel Wire products are solid metal, shaped as wire of various diameters.

Density: 489.6 lbs/ft³ **Melting Point:** 2700 °F

Section 10 - Stability & Reactivity Information

Materials to Avoid: Avoid contact with calcium hypochlorite, mineral acids, and oxidizing agents which may generate hydrogen gas.

Stability Condition to Avoid: None

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition Products: Steel wire will decompose to produce Iron Oxide (Rust). Welders are exposed to a range of fumes and gases. Fume particles contain a wide variety of oxides and salts of metals and other compounds, which are produced mainly from electrodes, filler wire and flux materials. Ozone is formed during most electric arc welding, and exposures can be high in comparison to the exposure limit. Oxides of nitrogen are found during manual metal arc welding and particularly during gas welding.

Section 11 - Toxicological Information

Nickel (Ni) and Lead (Pb) are listed as Group 2B, possible human Carcinogens by IARC.



Canadian WHMIS Class D, Division 2B (Toxic).

Section 12 - Ecological Information

Ecological Information: Not Applicable

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Section 13 - Disposal Considerations

Waste Disposal Methods: Prevent waste from contaminating surrounding environment, scrap steel should be recycled. Discard any product, residue, disposable container, or liner in an environmentally acceptable manor, in full compliance with federal state and local regulations. Lead is a listed hazardous waste.

Section 14 - MSDS Transportation Information

Proper Shipping Name: Not regulated by DOT, IMO, or IATA.

Section 15 - Regulatory Information

SARA Title III: The following metallic compounds are listed as SARA 313 Toxic Chemicals and depending on your usage may be subject to annual reporting: Lead and Nickel.

TSCA: All material contained within this product are on the TCSA Inventory List.

California Proposition 65 Warning: This product contains chemicals known to the state of California to cause cancer (California Health & Safety Code § 25249.5 et seq.).

Section 16 - Other Information

MSDS NOTES:

- (1) Permissible Exposure Limit (PEL) - 8-hour TWA exposure as defined by OSHA (29CFR1910).
- (2) Threshold Limit Value (TLV) - 8-hour TWA as defined by American Conference of Governmental Industrial Hygienists (ACGIH).
- (3) Recommended Exposure Limit (REL) - 8-hour TWA as defined by National Institute of Occupational Safety & Health (NIOSH).
- (4) Short Term Exposure Limit (STEL) - 15 minute TWA exposure as defined by OSHA (29CFR1910.1200) or certain state regulations.
- (5) Immediately Dangerous to Life & Health (IDLH) – As defined by OSHA and NIOSH.
- (6) Ceiling Value (C) - Exposure which shall not be exceeded at any time during the working day.

Approved By: Brian J. McGuire, CSP, Corporate EH&S Manager **Date:** March 22, 2010

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