NATIONAL STANDARD

A HEICO WIRE GROUP COMPANY

Material Safety Data Sheet

Updated - November 2011

Section 1 - Product Identification

Product Name: Tire Bead Wire

Synonyms: Bronze or Copper Coated Tire Bead Wire

This MSDS covers all Tire Bead Wire Products manufactured by National Standard, LLC production facilities located at:

3602 North Perkins Road
Stillwater, OK 74075
(405) 377-5050

Section 2 – Hazard Identification

Steel products in their solid 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 exposure of metallic fumes and dusts may result in irritation of eyes, nose and throat. High concentrations of fumes of iron-oxide, manganese, and copper may result in metal fume fever. Typical symptoms last for 12 to 48 hours and consist of a metallic taste in the mouth, dryness and irritation of the throat, chill and fever.

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).

Manganese = Bronchitis, pneumonitis, and lack of coordination.

Copper = Pulmonary effects

Section 3 – Hazardous Composition Information

Product Name	Fe	C	Mn	Si	Cu	Sn
Tire Bead Wire	97%	0.05 - 0.9%	0.4 - 0.8%	0.1-0.4%		
Plating					0.03-0.06%	0.0003-0.002%

The following exposure limits apply to those fumes and gases which may be found in the welding environment:

Ingredient	CAS No.	PEL [1]	TLV [2]	REL [3]	STEL [4]	IDLH [5]
Iron Oxide Fume (as Fe_2O_3)	1309-37-1	10.0	5.0	5.0		2500
Manganese Fume (Mn)	7439-96-5	(C) 5.0 [6]	0.2	1.0	3.0	500
Silicon (Si)	7440-21-3	15.0	10.0	10.0		
Copper (Cu)	7440-50-8	0.1	0.2	0.1		100
Tin (Sn)	7440-31-5	2.0	2.0	2.0		

Notes: All values are in mg/m^3. OHSA requires employers to ensure exposures are below individual constituent PEL's. Determine actual exposure through industrial hygiene monitoring.

Section 4 - First Aid Measures

EMERGENCY AND FIRST AID: Remove from exposure and obtain prompt 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.

Section 5 - Fire and Explosion Hazard Data

Flammability: This material is not flammable.

National Fire Protection Association (NFPA) Rating: Health - 0 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. 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

Up to 50 mg/m^3 (APF=10):
- Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.

Up to 125 mg/m^3 (APF =25):
- Any supplied-air respirator operated in a continuous-flow mode
- Any powered air-purifying respirator with a high-efficiency particulate filter.

Up to 250 mg/m^3 (APF=50):
- Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
- Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
- Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter
- Any self-contained breathing apparatus with a full-facepiece
- Any supplied-air respirator with a full-facepiece

Up to 2500 mg/m^3 (APF = 1000):
- Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions (APF = 10,000):
- Any self-contained breathing apparatus that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode
- Any supplied-air respirator that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape (APF = 50):
- Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. Any appropriate escape-type, self-contained breathing apparatus

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

Density: 489.6 lbs/ft^3 **Melting Point:** 2700 ^{o}F

Section 10 - Stability & Reactivity Information

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

Stability Condition to Avoid: None

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition Products: None. However, 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

None

Section 12 - Ecological Information

Ecological Information: Not Applicable

Section 13 - Disposal Considerations

Waste Disposal Methods: Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manor, in full compliance with federal state and local regulations.

Section 14 - Transportation Information

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

Section 15 - Regulatory Information

SARA 311 and 312 Reporting: Reporting is not required if product meets the definition of an Article.

EPCRA 313 Reporting: Nickel and Manganese are 313 Reportable substances. Reporting is not required if product meets the definition of an Article.

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

Clean Air Act: Not Applicable

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: Ronald F. Spears, Jr., CHMM, Mgr., EHS&S **Date:** November 23, 2011

This data is believed to be accurate and was obtained from recognized technical sources, but cannot be warranted as to its accuracy or sufficiency. See www.nationalstandard.com for the most recent MSDS.