

**G&H® Wire Company**2165 Earlywood Drive
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MATERIAL SAFETY DATA SHEET DIRECTIVE 91/155/EEC

 1. SUBSTANCE/PREPARATION AND COMPANY IDENTIFICATION

- 1.1 Chemical Nature, Sales Name, Use: Metal, 303, Project 70, dental use stainless steel for Weldable Lingual Buttons.
- 1.2 Company Identification:
G&H Wire Company
P.O. Box 248
Greenwood, Indiana 46142
Telephone: 317-346-6655
Facsimile: 317-346-6663
- 1.3 Emergency Contact: 317-346-6655
- 1.4 Exposure to specialty steel alloys occurs primarily from inhalation of dust or fumes. However, constituents of these alloys may cause effects directly upon the skin or eyes. Certain constituents may also be harmful if swallowed.

 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	%	PEL/TUV 8 HOUR TWA UNLESS OTHERWISE NOTED
IRON* 1309-37-1	70.00	PEL 10.0 MG/M3 TLV 5.0 MG/M3
CHROMIUM 7440-47-9	18.00 %	PEL 1.0 MG/M3 TLV 0.5 MG/M3
NICKEL 7440-02-0	9.00 %	PEL 1.0 MG/M3 TLV 1.0 MG/M3
MANGANESE 7439-96-5	1.80 %	PEL 1.0 MG/M3 3.0 MG/M3 STEL TLV 5.0 MG/M3
COBALT 7440-48-4	.75 %	PEL 0.05 MG/M3 TLV 0.05 MG/M3

* THESE SUBSTANCES ARE REGULATED IN THEIR OXIDE FORM

The above percent concentrations are considered nominal and are provided for industrial hygiene purposes when used as bulk material.

 3. HAZARDS IDENTIFICATION

- 3.1 Specialty steel alloys are generally not considered hazardous in the form shipped (solid bars, billets wire, etc.), however, if your process involves grinding, melting, welding, cutting, or any other process that causes a release of dust or fume, hazardous levels of dust or fume of the constituents of these alloys could be generated.

Health Effects

Chromium: Ferrochrome exposures have been associated with lung changes and skin irritation. Trivalent compounds are considered non-toxic. There is no evidence of carcinogenic effects from Trivalent compounds in humans or animals.

Cobalt: Fume or dust may cause interstitial lung disease or dermatitis. May cause hypersensitivity pneumonitis which disappears when exposure ceases or may cause obstructive airway syndrome as an allergic response.

Iron Oxide: Repeated exposure to fume over a period of years may cause a benign pneumoconiosis but generally does not cause symptoms in the exposed person.

Manganese: Acute effects include skin and eye irritation and metal fume fever. Chronic exposure may lead to central nervous system effects: headache, changes in motor activity and psychological disturbances.

Nickel: Known to cause contact dermatitis. A respiratory irritant. May cause pulmonary asthma. Nickel refining and specific nickel compounds are considered respiratory carcinogens to humans.

References: health hazard data was taken from Sax Dangerous Properties or Proctor & Hughes Chemical Hazards of the Workplace. For additional sources of health information refer to appendix of OSHA'S Hazard Communication Standard (29CFR1910.1200)

4. FIRST-AID MEASURES

- 4.1 Inhalation: Move person to fresh air until recovered. Consult a physician.
- 4.2 Skin Contact: Wash with water and mild detergent.
- 4.3 Eye Contact: Flush thoroughly with water, consult a physician.
- 4.4 Ingestion: While ingestion of large enough quantities to cause health effects is unlikely. Consult a physician if it occurs.

5. FIRE-FIGHTING MEASURES

- 5.1 Suitable Extinguishing Media: N/A
- 5.2 Unsuitable Extinguishing Media: N/A
- 5.3 Particular Hazards: See step 3
- 5.4 Protective Equipment for Fire-Fighters: N/A

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions:

Ventilation:

If your process causes a release of dust or fume, use local and general exhaust ventilation to keep airborne concentrations of dust or fumes below the TLV.

Respiratory Protection:

If your process causes a release of dust or fume in excess of the permissible exposure limit, use approved respirators for protection against airborne dust or fumes should be worn. Respirators should be used in accordance with 29CFR 1910.134.

Protective Equipment:

Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis. If your process involves grinding or any other action that causes the release of dust or fumes, approved safety glasses or goggles should be worn.

6.2 Environmental Precautions: No hazard

6.3 Cleaning Methods: N/A

7. HANDLING AND STORAGE

7.1 Handling: See step 6.1

7.2 Storage: N/A

7.3 Storage Conditions: N/A

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Minimize contact as outlined in step 6.1

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Form: Small solid parts

Color: Solid

Odor: Odorless

9.2 Change of State: liquid

Melting Point/Range: 2400 F to 2800° F

Boiling Point: HIGH

9.3 Flash Point: N/A

9.4 Ignition Point: N/A

9.5 Vapor Pressure (20°C): N/A

9.6 Density (0.287): 7.5 to 8.5 specific gravity

9.7 Solubility in: Water (20°C): insoluble
Organic Solvent (20°C): insoluble

9.8 PH-Value (at 10g/1H₂O): N/A

9.10 Viscosity (20°C): solid

10. STABILITY AND REACTIVITY

10.1 Thermal Decomposition: None

10.2 Conditions to Avoid: None

10.3 Materials to Avoid: None

10.4 Hazardous Decomposition Products: None

11. TOXICOLOGICAL INFORMATION

11.1 Oral Toxicity: Reference Step 3 and Step 6.1

11.2 Inhalation: Reference Step 3 and Step 6.1

11.3 Skin Irritation: Reference Step 3 and Step 6.1

11.4 Sensitization: Reference Step 3 and Step 6.1

11.5 Eye Irritation: Reference Step 3 and Step 6.1

11.6 Further Details: None

12. ECOLOGICAL INFORMATION

12.1 Acute Toxicity in Fish (LC-50/48h): not defined

- 12.2 Bacteria Toxicity (EC-0): not defined
- 12.3 Biodegradability: not defined
- 12.4 Further Details:

13. DISPOSAL CONSIDERATIONS

- 13.1 Product: N/A
- 13.2 Packaging: N/A
- 13.3 Waste Disposal Code: N/A Chips or pieces can be recycled as scrap steel

14. TRANSPORT INFORMATION

- 14.1 Overland Transport ADR/RID/GGVS/GGVE: N/A
- 14.2 Sea Transport GGVSEA/IMDG-Code: N/A
- 14.3 Air Transport ICAO/IATA-DGR: N/A
- 14.4 Inland Waterway Transport ADNR: N/A
- 14.5 Further Details: Product is not considered dangerous for transport

15. REGULATORY INFORMATION

Preparation as defined by the (German) Chemicals Act (dated 4/03/1990).

- 15.1 Labeling: N/A
 - Product Contains:
 - Danger Symbol:
 - R-Sentences R36/37/38:
 - S-Sentences S26:
 - S-Sentences S28:
- 15.2 National Regulation:
 - VbF:
 - TA-Air:
 - Water Pollution 1:

16. OTHER INFORMATION

- 16.1 The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. Therefore, it should not be construed as guaranteeing specific properties.
- 16.2 Revision Date: November 29, 2006