



MSDS Name	Stainless Steel Bare
Revised	January 2006

MATERIAL SAFETY DATA SHEET (MSDS)

For Welding Consumables and Related products
Conforms to OSHA Hazard Communication Standard 29CFR 191.1200
Standard Must Be Consulted for Specific Requirements

Section I – Identification

Supplier: Universal Wire Works Inc.	Telephone Number: 713-649-3828
Address: 15 Drennan St, Houston, TX 77003	Emergency Number: 713-649-3828
Classification: 15-7 VM	Specifications: AMS 5812

Section II – Hazardous Materials*

IMPORTANT: This section covers the materials for which the product was manufactured. The fumes and gases produced during welding with the normal use of this product are covered.

*The term "Hazardous Materials" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200); however, the use of this term does not necessarily imply the existence of any hazard.

Flux or other Ingredients	% Of Weight	CAS No.	Exposure Limit (mg/m ³)	
			OSHA PEL	ACGIH TLV
Aluminum (Al)		7429-90-5	15 – 5	10 – 5
Beryllium (Be)		7440-41-7	0.002 – 0.005	0.002
Chromium (Cr)		7440-47-3	1.0	0.5
Cobalt (Co)		7440-48-4	0.05	0.05
Copper (Cu)		7440-50-8	1	1
Iron (Fe)		7439-89-6	No Limit	No Limit
Manganese (Mn)		7439-96-5	5 – 1	5 – 1
Molybdenum (Mo)		7439-98-7	10	10
Nickel (Ni)		7440-02-0	1	1
Silicon (Si)		7440-21-3	10	10
Titanium (Ti)		7440-32-6	No Limit	No Limit
Tungsten (W)		7440-33-7	5 - 10	5 - 10

Section III – Physical

Solubility in Water; Insoluble. Appearance: Solid, Odorless Metal

Section IV – Fire and Explosion Hazard

Nonflammable; however, welding arc and sparks can ignite combustibles and flammables. Refer to ANSI Z49.1 for fire prevention during welding

Section V – Health Hazard Data

Welding Alloys are generally not considered hazardous in the form shipped (solid rods or wire). However, when welding or using 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. IARC has concluded that welding fumes are possibly carcinogenic to humans. The general PEL/TLV for Welding Fume (Not Otherwise Classified) is 5 mg/m³; however, individual constituents of fumes may have lower allowable exposure levels. The ingredients of fumes and gases generated in user welding operations will depend on the filler metal alloy, base metal, flux and the specific process being used. Ingredients may include metals, metal oxides, chromates, fluorides, carbon monoxide, ozone and oxides of nitrogen. Phosgene can be produced if chlorinated solvent vapors are present in user operations. The following is a list of potential health effects that are contained in any of our alloys.

Aluminum (Al)- Metal dust and oxide is generally considered a “nuisance” particulate. May irritate the eyes and mucous membranes. Excessive concentrations have been known to cause fibrosis.

Beryllium (Be)- Inhalation of excessive levels can result in acute pneumonitis (inflammation of lung tissues). Chronic inhalation above permissible limits can produce chronic berylliosis (progressive lung disease) and systemic beryllium disease.

Chromium (Cr)- Ferrochrome alloy 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. Hexavalent chromium compounds may be generated during welding operation, these compounds are considered carcinogenic.

Cobalt (Co)- 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.

Copper (Cu)- May irritate the upper respiratory tract or cause metal fume fever, an influenza like illness with fever, muscle aches and weakness. May also cause a metallic or sweet taste in the mouth.

Iron (Fe)- 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 (Mn)- 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.

Molybdenum (Mo)- Irritant to eyes and mucous membranes

Nickel (Ni)- Known to cause contact dermatitis. A respiratory irritant, may cause pulmonary asthma. Nickel refining and specific nickel compounds are considered respiratory carcinogens to humans.

Silicon (Si)- Silicon in dust form is considered a nuisance dust with not toxic effects when exposures are kept under control. Inhalation of crystalline silica (SiO₂) over a long period of time can cause silicosis.

Titanium (Ti)- Considered a “nuisance” particulate. May cause irritation to eyes, nose and throat.

Tungsten (W)- Skin and eye irritant. Low order of toxicity.

Carcinogenic References: Beryllium, Chromium, Cobalt-Chromium alloys and Nickel have been identified by either the International Agency for Research on Cancer (IARC) or The National Toxicology Program (NTP) or by OSHA as cancer causing agents.

Proposition 65: WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER

Exposure Routes: Acute exposure to specialty welding alloys occurs primarily from inhalation of dust or fumes. Specific constituents of these alloys may cause effect directly upon the skin or eyes. Certain constituents may also be harmful if swallowed.

First Aid:

Inhalation- Move person to fresh air until recovered. If severe respiratory irritation persists consult a physician.

Skin- Wash with water and mild detergent. If rash develops consult a physician.

Eye- Flush thoroughly with water. If irritation persists consult a physician.

Ingestion- While ingestion of large enough quantities to cause health effects is unlikely, consult a physician if it occurs.

Aggravated Conditions: Medical conditions that are recognized as being possibly susceptible to aggravation by exposure include pre-existing chronic skin, eye, and respiratory disorders if prolonged or repeated overexposure to fume and dust occurs.

VI – Reactivity Data

This material is non-reactive (stable) as shipped.

Section VII – Spill or Leak Procedures

Product is a solid metal as shipped, no potential for spills or leak. Chips or pieces can be recycled as scrap

Section VIII – Special Protection Information

Respiratory Protection: Respiratory protection is necessary when exposure limits for airborne contaminants are exceeded during welding with these alloys. Use air-supplied respirator in confined spaces. Use only NIOSH approved respirators in accordance with 29 CFR 1910.134 – Respiratory Protection

Ventilation: Use local exhaust when welding. Maintain exposures below acceptable exposure limits. Confined spaces require special attention to provision of adequate ventilation and/ or air-supplied respirators.

Eye Protection and Protective Clothing:

Protective equipment is required when welding. Wear gloves, face protection and flame retardant clothing. Do not expose skin or eyes to the heat and radiation from welding operations. Select welding lens shade from the American Welding Society publication F2.2

Important: Maintain exposures below the acceptable exposure limits. Use industrial hygiene air monitoring to ensure that your use of this material does not create exposures, which exceed the recommended exposure limits. Always use exhaust ventilation in welding operation. Refer to the following sources for important additional information. ANSI Z49.1, “The American Welding Society”, P.O. 351040, Miami, FL. 29 CFR 1910 OSHA – Dept. of Labor, Washington, D.C. 20210.

Section IX Addendum

SARA Title III Requirements: Individual filler metal may contain toxic chemicals subject to the reporting requirements under Section 313 of the Emergency Planning and Community Right-To-Know Act of 198 and of 40 CFR 372. Toxic chemicals may include Chromium, Beryllium, Nickel, Manganese, Cobalt, Copper, Titanium, or Aluminum (refer to Section V of these MSDS for specific hazardous ingredients).

Disclaimer of Liability

We believe that the information contained herein is current as of the date of this MSDS. As the condition or methods of use are beyond Universal Wire Works, Inc. control, Universal Wire Works Inc. does not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without any warranty, expressed or implied, regarding the accuracy of the information, the hazard connected with the use of this material or the results to be obtained for use thereof. It is the user's obligation to determine the conditions of safe use of these products.