

# Material Safety Data Sheet

## Filler Metals and Welding Rods

Product Trade Name/Product Classification(s): High Quality Solid Stainless Welding Wires

### Section 1: Identification

Identity: High Quality Solid Stainless Welding Wires  
 Manufacturer's Name: Inweld Mfg Corp.  
 Address: 3962 Portland St., Coplay, PA 18037-0440  
 Revised: July 2006  
 Emergency Phone #: (610) 261-1900  
 Info. Phone #: (610) 261-1900  
 Product Trade Name / Product Classification(s):  

307	308	308L	308LSi	308Mo	308MoL	309
309L	309LSi	310	310HC	312	316	316LSi
16-8-2	317	317L	318	320	320LR	330
330H	347	347Si	410NiMo	630	904L	410
420	430	404CB	308H	316L		

### Section 3: Physical & Chemical Data

These products shipped are non-hazardous, non-flammable, non-explosive and non-reactive.

### Section 4: Fire and Explosion Hazard Data

Non-flammable: Welding arc and sparks can ignite combustibles. See Z-49.1 referenced in Section 7.

### Section 5: Reactivity Data

#### Hazardous Decomposition Products:

Welding fumes cannot be classified simply. Their composition and quantity are dependent upon the metal being welded, the process, procedures and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), number of welds and volume of work area, quality and amount ventilation, position of welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities). The primary route of entry of welding fumes and gases is by inhalation.

When the electrode is consumed, the fume and gas decomposition products are different in percent and form from the ingredients listed in Section 2. Decomposition products include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 2 plus those from base metal, coating, etc., as noted above. These components are virtually always present as complex compounds and not as metals (Characterization of Arc Welding Fume: American Welding Society).

Reasonably expected fume constituents from these products would include: complex oxides of iron, chromium, nickel, manganese and silicon. Products containing molybdenum or columbium will also have complex oxides of these elements in their fumes. Cr III fume limits (0.5mg/M<sup>3</sup>) may be reached before general fume limit of 5mg/M<sup>3</sup> is reached. Monitor fumes for Cr III level. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet, if worn, or in the worker's breathing zone. See ANSI/AWS F1.1, available from the American Welding Society, P.O. Box 351040, Miami, FL, 33135.

### Section 6: Health Hazard Data

#### Threshold Limit Value:

The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5mg/M<sup>3</sup>. The ACGIH 1984-85 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section 5 for specific fume constituents, which may modify this TLV.

#### Effects of Overexposure:

FUMES AND GASES can be dangerous to your health. Aggravation of pre-existing respiratory or allergic conditions may occur in some workers.

SHORT-TERM (ACUTE) OVEREXPOSURE to welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of nose, throat, or eyes.

LONG-TERM (CHRONIC) OVEREXPOSURE may lead to siderosis (iron deposits in the lung) and is believed by investigators to affect pulmonary function.

ARC RAYS can injure eyes and burn skin.

ELECTRIC SHOCK can kill. See Section 7.

#### Emergency & First Aid Procedures:

Call for medical Aid. Employ first aid techniques recommended by the American Red Cross.

Carcinogenicity	NTP?	IARC Monographs?	OSHA regulated?
When present	Cr, Ni	Cr, Ni	Cr

### Section 2: Hazardous Materials

IMPORTANT: THE MATERIALS LISTED ARE WHAT IS REASONABLY EXPECTED TO EXIST IN THE WHEN PRODUCT IS USED IN WELDING.  
 THE TERM "HAZARDOUS" SHOULD BE INTERPRETED AS A TERM REQUIRED AND DEFINED IN OSHA HAZARD COMMUNICATION STANDARD (29 C.F.R. 1910.1200) AND IT DOES NOT NECESSARILY IMPLY THE EXISTENCE OF ANY HAZARD.

INGREDIENT	(CAS No.)	EXPOSURE LIMIT	
		TLV	PEL
Iron	7439-89-6	5	10 (as Fe <sub>2</sub> O <sub>3</sub> )
Chromium (4)	7440-47-3	.05 (chromium VI)	.05 (chromium VI)
Nickel (4)	7440-02-0	1	1
Manganese (4)	7439-96-5	5	5 ceiling
Silicon	7440-21-3	5 (as SiO <sub>2</sub> )	3 (as SiO <sub>2</sub> )
Molybdenum (A)	7439-98-7	15	10
Columbium (B)	7440-03-1		

- Occupational Safety and Health Administration, 29, C.F.R. 1910.1000 Permissible Exposure Limit (PEL).
- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV(R)).
- Not known; nuisance particulate concentration per ACGIH is 10mg/M<sup>3</sup>. (Nuisance)
- These ingredients are covered under the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of CFR 372.

- (A) Present in 308MO, 309MO, 316, 316L, 316LSi, 317, 317L, 904L, 419NiMo, 630, 16-8-2, 318, 320, 320LR  
 (B) Present in 347, 347LSi, 318, 320, 320LR, 630, 409CB

OTHER ELEMENTS PRESENT IN ALL STAINLESS STEEL WIRES.

### Section 7: Precautions for Safe Handling & Use/Applicable Control Measures

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTIONS AND THE PRECAUTIONARY LABEL ON THIS PRODUCT. SEE AMERICAN NATIONAL STANDARD Z-49.1, SAFETY IN WELDING AND CUTTING, PUBLISHED BY THE AMERICAN WELDING SOCIETY, P.O. BOX 351040, MIAMI, FL 33135 AND OSHA PUBLICATION 2206 (29 C.F.R. 1910), U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402 FOR MORE DETAIL ON MANY OF THE FOLLOWING:

#### Ventilation:

Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLVs in the worker's breathing zone and general area. Train the welder to keep his head out of the fumes.

#### Respiratory Protection:

Use respirable fume respirator or air supplies respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV.

#### Eye Protection:

Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade which is too dark to see the weld zone. Then go to the next lighter shade, which gives sufficient view of the weld zone. Provide protective screens and flash goggles, if necessary, to shield others.

#### Protective Clothing:

Wear head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. At a minimum, this includes welder's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

#### Procedure for Cleanup of Spills or Leaks:

Not Applicable

#### Waste Disposal Method:

Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.