

**STEEL WELDING WIRES**  
**MATERIAL SAFETY DATA SHEET**  
 Filler Metals and Welding Rods

**SECTION 1**

Manufacturer's Name: HIGH PERFORMANCE PRODUCTS, INC. 815-985-0441  
 1220 Shappert Drive  
 Machesney Park, IL 61115

Product Number and Type: HPP 222M

**SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

**IMPORTANT:** This Section covers materials from which this product is manufactured

Ingredients of The Product	CAS No.	ACGIH TLV mg/m <sup>3</sup>	OSHA PEL mg/m <sup>3</sup>	Other Ingredients and/or Comments
Iron	7439-89-6	N.A.	N.A.	Oxides and/or fluorides of Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium, Strontium, Titanium, Zirconium
Manganese *	7439-96-5	0.2 for fume	5.0 as ceiling (dust) 1.3 Stel (fume)	
Silicon (SiO <sub>2</sub> )	7440-21-3	3.0	5.0	<b>WARNING:</b> This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or reproductive harm). (California Health & Safety Code 25249.5 et seq.)
Vanadium *	7440-62-2	.05 as fume	.01 as fume	
Copper *	7440-50-8	0.2 as fume	0.1 as fume	<b>Special Notes</b> Chromium in 30 Molybdenum in 30, 3044 only Nickel in 30, 3044 only Magnesium in 306-FCO only Aluminum in 303-SPL and 306-FCO only Titanium in 303-SPL only
Carbon	7782-42-5	3.5	3.5	
Chromium *	7440-47-3	.5	1.0	
Molybdenum	7439-98-7	10.0	15.0	
Nickel *	7440-02-0	1.0	1.0	
Magnesium	7439-95-4	N.A.	N.A.	
Aluminum	7429-90-5	10.0	N.A.	
Titanium	7440-32-6	10.0	15.0	

Chemicals listed in Section 313 of SARA Title III are identified with an asterisk(\*)

**SECTION 3 - PHYSICAL DATA**

These products as shipped are nonhazardous, nonflammable, nonexplosive and nonreactive.

**SECTION 4 - FIRE AND EXPLOSION HAZARD DATA**

Welding arc and sparks, and the use of oxy-fuel torches, can ignite combustibles and flammables. Refer to American National Standard Z49.1 for fire prevention during the use of welding and allied procedures.

**SECTION 5 - REACTIVITY DATA – HAZARDOUS REACTION PRODUCTS**

Fumes and gases from welding and high temperature cutting cannot be classified simply. The composition and quantity of both depend on 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), the number of welders and the volume of the work area; the quality and amount of ventilation, the position of the 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.)

Most fume ingredients are present in complex combinations, rather than as separate compounds. Excessive overexposure may produce the effects outlined in Section 6.

**SECTION 6 - EXPOSURE LIMITS – HEALTH HAZARD DATA**

Use of this product in welding and brazing operations can result in exposure to airborne metal particulates and fumes. Section 2 lists specific hazardous ingredients and exposure limits. Section 6 lists exposure limits for hazardous reaction products that might be formed by welding and high temperature cutting.

**IMPORTANT:** Determine actual exposure by industrial monitoring.

Primary routes of exposure are inhalation of fumes, gases, or particulates. Absorption through the skin is unlikely.

**Welding Fumes**

The constituents of the fume are generally different from the ingredients listed in Section 2 and may include oxides of the metals, chromates, fluorides, and complex metallics. The gases may include carbon monoxide, ozone, and oxides of nitrogen. Chlorinated solvents may be decomposed by the arc into toxic gases such as phosgene. The chemicals listed in Table 6a have low PEL's/TLV's and represent potential health hazards. Postle Industries recommends monitoring of these chemicals.

**Table 6a**

Metal or Chemical	TLV mg/m <sup>3</sup>	PEL mg/m <sup>3</sup>	Metal or Chemical	TLV mg/m <sup>3</sup>	PEL mg/m <sup>3</sup>
Carbon Monoxide	50 ppm	50ppm	Manganese fume (Mn)	1.0	5.0 as ceiling
Chromium (Chromates)	0.05	.05 as CrVI	Nickel & Ni Oxide	1.0	1.0
Chromium Oxides	0.5	0.5	Nitric Oxide	25 ppm	25 ppm
Cobalt & Co Oxide	0.05	.1	Nitrogen dioxides	3 ppm	5 ppm
Copper & Cu Oxide	0.2 for fume	0.1 for fume	Ozone	0.1 ppm	0.1 ppm
Fluorides as fluorine	2.5	2.5	Phosgene	0.1 ppm	0.1 ppm