



SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Identifier: **Mild Steel Maintenance Electrode**
Product Use: SMAW / Arc / Stick Welding
Item Code: 160
Supplier Name: PowerWeld Inc.
Supplier Address: 2501 Beech Street
Valparaiso, IN 46383
Supplier Web Address: www.powerweldinc.com
Supplier Phone: 219-462-8700
1-800-826-9073
Prepared By: PowerWeld Inc.
Preparation Date: 29 April 2016

Section 2: Hazard Identification

Classification: Not applicable
Label Elements: Not applicable
Other Hazards: Not applicable

Section 3: Composition/Information on Hazardous Ingredients

HAZARDOUS INGREDIENTS	CAS NUMBER	APPROXIMATE CONCENTRATION (%)
Kaolin	1332-58-7	1 - 11
Cellulose	9004-34-6	1 - 11
Feldspar	68476-25-5	1 - 11
Manganese (Mn)	7439-96-5	1 - 11
Titanium Dioxide (TiO ₂)	13463-67-7	5 - 15
Potassium Silicate	1312-76-1	1 - 11
Iron (Fe)	7439-89-6	65 - 75

Section 4: First-aid Measures

Inhalation: Inhalation may be the most common cause of overexposure due to the welding fumes. Large amounts of welding fumes will cause irritation of the nose, eyes and skin. Move from the area that has any fumes to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and transport to nearest medical facility for additional treatment.

Ingestion: Not an expected route of exposure. Rinse mouth completely and drink a cup of water if conscious; obtain medical assistance when needed.

Eye Contact: If arc flash or burns occur, obtain medical assistance. Large exposure to welding fumes may cause irritation to the eyes. Immediately flush upper and lower eyelids with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling persists, visit nearest medical facility for additional treatment.

Skin Contact: Large exposure to welding fumes may cause irritation to skin. If burns occur, flush with clean cool water for 15 minutes; obtain medical assistance when needed.

Symptoms: Treat symptomatically; symptoms may be delayed. Show this SDS to the attending physician.

NOTE: In all severe cases, contact physician immediately. Local telephone operators can provide number of regional poison control centre.

Section 5: Fire-fighting Measures

Flammable: Not flammable

Means of Extinction: Do not use water on molten metal; large fires may be flooded with water from a distance. Alcohol-resistant foam, dry chemical or carbon dioxide recommended. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the surrounding material and fire situation.

Auto-ignition Temperature: Not applicable

Hazardous Combustion Products: Iron oxides, Aluminum oxide, Silicon oxides, Manganese oxides

Explosion Data Sensitivity to Mechanical Impact: Not applicable

Explosion Data Sensitivity to Static Discharge: Not applicable

Special Equipment: See below

Precautions for Fire Fighters: This product, as shipped, is non-flammable; however, fine chips and dust may increase the explosion rating under certain heat and other ignition hazards. Hydrogen gas and irritating fumes may form when involved in a fire or if decomposing is caused from water, alcohol or sodium hydroxides. Do not use water with any molten metals and use self-contained safety clothing/equipment in case of fires.

Section 6: Accidental Release Measures

Protective Equipment: See Section 8

Emergency Procedures: This product is in rod form and has no hazards as shipped.

Leak or Spill Procedure: If spilled, the product may be picked up and placed back into the container. If metals become molten, contain with sand and allow to return back into a solid for recycle as scrap.

Section 7: Handling and Storage

Handling Procedures and Equipment: Avoid contact with eyes. Avoid breathing dust. Avoid prolonged or repeated contact with skin. Do not get on skin or clothing. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact of spilled material and runoff with soil and surface waterways.

Storage Requirements: Store in a cool, dry and low humid location.

Incompatibilities: Strong acids and bases.

Section 8: Exposure Controls/Personal Protection

Exposure Limits:

HAZARDOUS INGREDIENTS	CAS NUMBER	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)
Kaolin	1332-58-7	10	2

Cellulose	9004-34-6	-	10
Feldspar	68476-25-5	-	-
Manganese (Mn)	7439-96-5	5	1
Titanium Dioxide (TiO ₂)	13463-67-7	15	10
Potassium Silicate	1312-76-1	-	5
Iron (Fe)	7439-89-6	10	10

Engineering Controls:

Ensure proper ventilation and respiratory protection is used when welding, brazing or processing. Respiratory protection is recommended and information may be found regarding the OSHA STANDARDS (29 CRF 1910.134), as well as CSA Standards Z94.4, along with many other safety standards.

Personal Protective Equipment:

Use proper welding helmet or safety shield, as well as clothing and gloves, as required for job duties. Do not eat or drink while using these products and wash hands thoroughly after use.

Section 9: Physical and Chemical Properties

<i>Physical State:</i>	Solid
<i>Odor and Appearance:</i>	Odorless blue rod
<i>Odor Threshold (ppm):</i>	Not available
<i>pH:</i>	Not available
<i>Melting Point:</i>	> 2300°F (> 1300°C)
<i>Freezing Point:</i>	Not available
<i>Boiling Point:</i>	Not available
<i>Flashpoint:</i>	Not available
<i>Upper Flammable Limit (% by volume):</i>	Not available
<i>Lower Flammable Limit (% by volume):</i>	Not available

Section 10: Stability and Reactivity

<i>Chemical Stability:</i>	Stable under normal conditions
<i>Possible Hazardous Reactions:</i>	Contact with chemical substances (ie./ acids and strong bases) will cause the generation of gas.
<i>Conditions to Avoid:</i>	Not applicable
<i>Materials to Avoid (Incompatibilities):</i>	Reacts with acids
<i>Hazardous Decomposition By-Products:</i>	When this product is used in a welding process, hazardous decomposition product would include those from volatilization, reaction or oxidation of the material listed in section 3 and those from the base metal and coating. The amount of fumes generated from this product varies with welding parameters and dimensions. Refer to applicable exposure limits for fume compounds, including those exposure limits for fume compounds found in section 3. Manganese has a low exposure limit, in some countries, which may be easily exceeded. Reasonably expected gaseous products would include Carbon oxides, Nitrogen oxides and Ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quality of fumes and gases produced.
<i>Hazardous Polymerization:</i>	Will not occur under normal conditions.

Section 11: Toxicological Information

<i>Skin Contact:</i>	Arc rays can burn skin; skin cancer has been reported.
<i>Skin Absorption:</i>	Not applicable

<i>Eye Contact:</i>	Arc rays can injure eyes.
<i>Inhalation:</i>	Inhalation is the most likely route of exposure; refer to “Effects of Acute Exposure” and “Effects of Chronic Exposure” below.
<i>Ingestion:</i>	Unlikely due to form of product.
<i>Effects of Acute Exposure:</i>	Overexposure or inhalation of large amounts of welding fumes may cause symptoms such as metal fume fever, dizziness, nausea, dryness and irritation of your nose, throat or eyes as well as lung disease.
<i>Effects of Chronic Exposure:</i>	Overexposure or prolonged inhalation of large amounts of welding fumes symptoms may include damage to the central nervous system, respiratory system, skin and could affect organs such as pancreas and liver. Overexposure to Manganese and Manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait. Prolonged inhalation of Titanium dioxide (Classified 2B by IARC) above safe exposure limits can cause cancer.
<i>Irritancy of Product:</i>	Not available
<i>Sensitization to Product:</i>	This product is not expected to cause skin sensitization.
<i>Carcinogenicity:</i>	The Internal Agency for Research on Cancer has classified welding fumes as possible carcinogenic to humans (Group 2B).
<i>Reproductive Effects:</i>	Not available
<i>Respiratory Sensitization:</i>	Not available
<i>Toxicological Data:</i>	<p><u>Cellulose</u></p> <p>Oral, rat: > 5000 mg/kg (LD50)</p> <p>Dermal, rabbit: > 2000 mg/kg (LD50)</p> <p><u>Manganese</u></p> <p>Oral, rat: 9000 mg/kg (LD50)</p> <p><u>Titanium dioxide</u></p> <p>Oral, rat: > 10000 mg/kg (LD50)</p> <p>Dermal, rabbit: > 10000 mg/kg (LD50)</p> <p><u>Iron</u></p> <p>Oral, rat: 30000 mg/kg (LD50)</p>

Section 12: Ecological Information

<i>Aquatic and Terrestrial Toxicity:</i>	Welding rods contain metals which are considered to be very toxic towards aquatic organisms.				
<i>Persistence and Degradability:</i>	These welding rods consist of elements that cannot degrade any further in the environment.				
<i>Bio accumulative Potential:</i>	Welding rods contain heavy metals which bio accumulates in the food chain. The following figures are the bio concentration factor (BCF) for the substances on their own: <table> <tr> <td>Manganese, BCF:</td> <td>59052</td> </tr> <tr> <td>Iron, BCF:</td> <td>140000</td> </tr> </table>	Manganese, BCF:	59052	Iron, BCF:	140000
Manganese, BCF:	59052				
Iron, BCF:	140000				
<i>Soil Mobility:</i>	Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.				

Section 13: Disposal Considerations

NOTE: Always dispose of waste in accordance with local, provincial and federal regulations.

<i>Safe Handling:</i>	Gloves can be worn while handling discarded or unwanted product.
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Methods of Disposal:

Recycle when possible. Do not allow to enter drains, sewers or watercourses. Discard any unwanted product, residues, containers, or liners in a suitable disposal container in an environmentally acceptable manner, as required by relevant legislation.

Section 14: Transportation Information

This material is not considered as a dangerous good per transportation regulations.

Section 15: Regulatory Information

California Proposition 65:

This product contains or produces a chemical(s) known to the State of California to cause cancer.

EPCRA/SARA Title III Toxic Chemicals:

The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA reporting. See Section 3 for weight percentage:

Manganese 5 mg/m³

Section 16: Other Information

Preparation Date:

29 April 2016

Date of Last Revision:

29 April 2016

This SDS format is in accordance with GHS. PowerWeld Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Product use and conditions of use are beyond the control of PowerWeld. Warranty of materials is limited to test results of product performance as detailed in certificates of compliance. Interpretation of test results is the responsibility of end-user. No other warranties, expressed or implied, are made.