



# SAFETY DATA SHEET

## Section 1: Product and Company Identification

*Product Identifier:* **Covered Electrode for Welding All Types of Steel**  
*Product Use:* SMAW / Stick / Arc Welding  
*Item Code:* 145  
*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:* 13 April 2016

## Section 2: Hazard Identification

*Classification:* Not applicable  
*Label Elements:* Not applicable  
*Other Hazards:* Spatter and melting metal can cause burn injuries and start fires. Arc rays can injure eyes and burn skin. Electric shock can kill. Welding arc and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous.

## Section 3: Composition/Information on Hazardous Ingredients

HAZARDOUS INGREDIENTS	CAS NUMBER	APPROXIMATE CONCENTRATION (%)
Nickel (Ni)	7440-02-0	0.04 - 37
Chromium (Cr)	7440-47-3	4 - 29
Manganese (Mn)	7439-96-5	0.25 - 13.5
Iron (Fe)	7439-89-6	< 10
Molybdenum (Mo)	7439-98-7	0.35 - 5.2
Copper (Cu)	7440-50-8	0.6 - 4
Niobium (Nb)	7440-03-1	< = 1
Silicon (Si)	7440-21-3	0.015 - 0.03

## 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.*

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## Section 5: Fire-fighting Measures

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<i>Flammable:</i>	Not flammable; emits toxic fumes when heated
<i>Means of Extinction:</i>	Use extinguishing method most appropriate for surrounding fire
<i>Auto-ignition Temperature:</i>	Not available
<i>Hazardous Combustion Products:</i>	Not available
<i>Explosion Data Sensitivity to Mechanical Impact:</i>	Not available
<i>Explosion Data Sensitivity to Static Discharge:</i>	Not available
<i>Special Equipment:</i>	See below
<i>Precautions for Fire Fighters:</i>	In the event of fire, wear self-contained breathing apparatus and full protective gear.

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## Section 6: Accidental Release Measures

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<i>Protective Equipment:</i>	See Section 8
<i>Emergency Procedures:</i>	This product is in rod form and has no hazards as shipped.
<i>Leak or Spill Procedure:</i>	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.

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## Section 7: Handling and Storage

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<i>Handling Procedures and Equipment:</i>	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.
<i>Storage Requirements:</i>	Store in a cool, dry and low humid location. Keep away from heat and open flame.
<i>Incompatibilities:</i>	Strong acids and bases.

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## Section 8: Exposure Controls/Personal Protection

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*Exposure Limits:*

HAZARDOUS INGREDIENTS	CAS NUMBER	ACGIH TWA (mg/m <sup>3</sup> )	OSHA PEL TWA (mg/m <sup>3</sup> )
Nickel (Ni)	7440-02-0	1.5	1
Chromium (Cr)	7440-47-3	0.5	1
Manganese (Mn)	7439-96-5	0.1	5
Iron (Fe)	7439-89-6	-	-
Molybdenum (Mo)	7439-98-7	3	-

Copper (Cu)	7440-50-8	0.2	1
Niobium (Nb)	7440-03-1	-	-
Silicon (Si)	7440-21-3	-	5

*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 metallic rod
<i>Odor Threshold (ppm):</i>	Not available
<i>pH:</i>	Not available
<i>Melting Point:</i>	Not available
<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>	Not applicable
<i>Conditions to Avoid:</i>	Not applicable
<i>Materials to Avoid (Incompatibilities):</i>	Not applicable
<i>Conditions of Reactivity:</i>	Not applicable
<i>Hazardous Decomposition By-Products:</i>	Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and welding consumables used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coating on the metal being welded (i.e. paint, painting, galvanizing), the number of welders, the volume of the work area, the quality and the amount of ventilation, the position of the welders head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from the cleaning and degreasing activities). When an electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Fume and gas decomposition, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration. Also, new compounds not in the electrodes may form. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 3, plus those from the base metal coating, etc., as noted above. Reasonable expected fume constituents of this product would include: Complex oxides of iron, manganese, silicon,

chromium, nickel, columbium, molybdenum, copper, carbon dioxide, carbon monoxide, ozone and nitrogen oxides. Some products will also contain antimony, barium, molybdenum, aluminum, columbium, magnesium, strontium, tungsten, and or zirconium. Fume limit for chromium, nickel and or manganese may be reached before limit of 5 mg/m<sup>3</sup> of general welding fumes is reached. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

*Hazardous Polymerization:*

Will not occur

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## Section 11: Toxicological Information

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*Skin Contact:*

Arc rays can burn skin; skin cancer has been reported.

*Skin Absorption:*

Not applicable

*Eye Contact:*

Arc rays can injure eyes.

*Inhalation:*

Inhalation is the most likely route of exposure; refer to "Effects of Acute Exposure" and "Effects of Chronic Exposure" below.

*Ingestion:*

Unlikely due to form of product.

*Effects of Acute Exposure:*

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.

*Effects of Chronic Exposure:*

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.

*Irritancy of Product:*

Not available

*Sensitization to Product:*

This product is not expected to cause skin sensitization.

*Carcinogenicity:*

Prolonged inhalation of Nickel (Classified 2B by IARC and R by NTP) above safe exposure limits may cause cancer.

*Reproductive Effects:*

Not available

*Respiratory Sensitization:*

Not available

*Toxicological Data:*

Nickel

Oral, rat: > 9000 mg/kg (LD50)

Fish: > 100 mg/L [96hr] (LC50)

Iron

Oral, rat: 984 mg/kg (LD50)

Fish: 0.56 mg/L [96hr] (LC50)

Copper

Fish: 0.0068 – 0.0156 mg/L [96hr] (LC50)

Manganese

Oral, rat: 9 000 000 mg/kg

Silicon

Oral, rat: 3160 mg/kg

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## Section 12: Ecological Information

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*Aquatic and Terrestrial Toxicity:*

Very toxic to aquatic life

*Persistence and Degradability:*

Not available

*Bioaccumulative Potential:* Not available  
*Soil Mobility:* Not available

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### Section 13: Disposal Considerations

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

*Safe Handling:* Gloves can be worn while handling discarded or unwanted product.  
*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.

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### Section 14: Transportation Information

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

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### Section 15: Regulatory Information

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*California Proposition 65:* This product contains a chemical(s) known to the State of California to cause cancer.  
*US Toxic Substances Control Act (TSCA):* The following items are listed on TSCA inventory: Nickel, Iron, Chromium, Copper, Manganese, Molybdenum, Niobium, Silicon

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### Section 16: Other Information

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*Preparation Date:* 13 April 2016  
*Date of Last Revision:* 13 April 2016

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*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.*