Safety Data Sheet (SDS)

Section 1: Product and Company Identification

Product Identifier:	**Hardfacing Electrode**
Product Use:	Covered electrode for hard surfacing
Item Code:	251
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
Emergency Phone:	CHEMTREC (24-hour) 1-800-424-9300
Prepared By:	Powerweld Inc.
Preparation Date:	1 January 2026

Section 2: Hazard Identification

Classification:	Not classified
Symbols:	Not applicable
Signal Word:	Not applicable
Hazard Statements:	Not applicable
Precautionary Statements:	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 (%)
Calcium Carbonate	1317-65-3	1 – 11
Chromium	7440-47-3	20 – 30
Feldspar	68476-25-5	1 – 11
Calcium Fluoride	7789-75-5	1 – 5
Potassium Alginate	9005-36-1	1 – 5
Carbon	7440-44-0	1 – 5
Titanium Dioxide	13463-67-7	1 – 11
Potassium Silicate	1312-76-1	1 – 11
Sodium Silicate	1344-09-8	1 – 11
Iron	7439-89-6	40 – 50

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 month 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; emits toxic fumes when heated
Means of Extinction:	Use extinguishing method most appropriate for surrounding fire
Auto-ignition Temperature:	Not available
Hazardous Combustion Products:	Iron oxides, Sodium oxides, Silicon oxides, Hydrogen fluoride, Calcium oxides, Chromium oxides
Explosion Data Sensitivity to Mechanical Impact:	Not available
Explosion Data Sensitivity to Static Discharge:	Not available
Special Equipment:	See below
Precautions for Fire Fighters:	In the event of fire, wear self-contained breathing apparatus and full protective gear.

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. 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. Keep away from heat and open flame.

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)
Calcium Carbonate	1317-65-3	5	10
Chromium	7440-47-3	1 (metal)	0.5 (metal)
Feldspar	68476-25-5	-	-
Calcium Fluoride	7789-75-5	2.5 (as F)	2.5 (as F)
Potassium Alginate	9005-36-1	-	10
Carbon	7440-44-0	15	10
Titanium Dioxide	13463-67-7	15	10
Potassium Silicate	1312-76-1	-	5
Sodium Silicate	1344-09-8	-	5
Iron	7439-89-6	10 (as Fe_2O_3)	5 (as Fe_2O_3)

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. Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Do not eat or drink while using these products and wash hands thoroughly after use.

Section 9: Physical and Chemical Properties

Physical State: Solid

Odour and Appearance: Odourless grey rod

Odour Threshold (ppm): Not applicable

pH: Not available

Melting Point: 1560 - 2000°F (850 - 1100°C)

Freezing Point: Not available

Boiling Point: Not available

Flashpoint: Not available

Upper Flammable Limit (% by volume): Not available

Lower Flammable Limit (% by volume):	Not available

Section 10: Stability and Reactivity

Chemical Stability:	Stable under normal conditions
Possible Hazardous Reactions:	Contact with chemical substances (acids or strong bases) causes generation of gas.
Conditions to Avoid:	None known
Materials to Avoid (Incompatibilities):	Reacts with acids
Conditions of Reactivity:	See above
Hazardous Decomposition By-Products:	When this product is used in a welding process, hazardous decomposition products 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 national exposure limits for fume compounds, including those exposure limits for fume compounds found in section 3. 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. Present OSHA exposure limit for Hexavalent Chromium, Nickel and or Manganese may be reached before limit of 5 mg/m^3 of general welding fumes is reached.
Hazardous Polymerization:	Not applicable

Section 11: Toxicological Information

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 Titanium dioxide (Classified 2B by IARC) above safe exposure limits may cause cancer.
Reproductive Effects:	Not available
Respiratory Sensitization:	Not available

Toxicological Data:

Calcium Carbonate

Oral, rat: >2000 mg/k (LD50)

Inhalation, rat: >3 mg/L [4hr] (LC50)

Dermal, rat: >2000 mg/kg (LD50)

Chromium

Oral, rat: 19.8 mg/kg (LC50)

Calcium Fluoride

Oral, rat: >2000 mg/kg (LD50)

Inhalation, rat: >5070 mg/m^3 [4hr] (LC50)

Carbon

Intravenous, mouse: 440 mg/kg (LC50)

Titanium Dioxide

Oral, rat: >10000 mg/kg

Dermal, rabbit: >10000 mg/kg (LD50)

Iron

Oral, rat: 30000 mg/kg (LD50)

Section 12: Ecological Information

Aquatic and Terrestrial Toxicity: Welding rods contain metals which are considered to be very toxic towards aquatic organisms. Finely divided welding rods are therefore considered harmful to aquatic organisms.

Persistence and Degradability: The welding rods consist of elements that cannot degrade any further in the environment.

Bio accumulative Potential: 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:

Chromium, BCF:	200
Carbon, BCF:	0.14
Iron, BCF:	140 000

Soil Mobility: 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.

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. Unused products or product residue containing Chromium is considered hazardous waste if discarded, *RCRA ID Characteristics Toxic Hazardous Waste D007*.

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 and birth defects (or other reproductive harm).
USA 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): Chromium (disclosure threshold = 1.0)

Section 16: Other Information

Preparation Date:	13 May 2016
Date of Last Revision:	1 January 2026

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.