

# Material Safety Data Sheet

## Filler Metals and Welding Rods

Product Trade Name/Product Classification(s): **COVERED ELECTRODES FOR MMAW**  
**"ESSENTIALLY SIMILAR" to U.S. Department of Labor Form OSHA 20 (to comply with OSHA's Hazard Communication Standard 29 CFR 1910, 1200)**

SECTION 1: Identification						SECTION 2: Hazardous Ingredients/Identity Info.																																																																																																					
<b>SUPPLIER:</b> Inweld Corporation <b>Phone:</b> 1-800-346-5368 <b>Revised:</b> May 2010 <b>Address:</b> 3962 Portland St., Coplay, PA 18037						<b>IMPORTANT:</b> THE MATERIALS LISTED ARE WHAT IS REASONABLY EXPECTED TO EXIST IN THE FUMES 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.																																																																																																					
Product Trade Name/Product Classification(s): <b>COVERED ELECTRODES FOR MMAW (MILD STEEL)</b>						<table border="1"> <thead> <tr> <th>INGREDIENTS</th> <th>CAS #</th> <th>APPROX %</th> <th>OSHA PEL (Mg/M<sup>3</sup>)</th> <th>ACGIH TLV</th> <th>CARCINOGENICITY</th> </tr> </thead> <tbody> <tr> <td>IRON</td> <td>7439-89-6</td> <td>65-85</td> <td>5</td> <td>10 (as Fe O)</td> <td>NO</td> </tr> <tr> <td>CELLULOSE</td> <td>9004-34-6</td> <td>.5-10</td> <td>Not Registered</td> <td>10</td> <td>NO</td> </tr> <tr> <td>MANGANESE*</td> <td>7439-96-5</td> <td>1-5.0</td> <td>5</td> <td>1</td> <td>NO</td> </tr> <tr> <td>SILICON</td> <td>7440-21-3</td> <td>1-5.0</td> <td>5 (as SiO)</td> <td>3 (as SiO)</td> <td>NO</td> </tr> <tr> <td>TITANIUM DIOXIDE</td> <td>13462-67-7</td> <td>1-15</td> <td>15</td> <td>10</td> <td>NO</td> </tr> <tr> <td>POTASSIUM TITANATE</td> <td>12030-97-6</td> <td>0-3</td> <td>Not Registered</td> <td>10</td> <td>NO</td> </tr> <tr> <td>CALCIUM CARBONATE</td> <td>1317-65-3</td> <td>1-5</td> <td>5 (as CaO)</td> <td>10</td> <td>NO</td> </tr> <tr> <td>SODIUM TITANATE</td> <td>12034-34-3</td> <td>0-2</td> <td>Not Registered</td> <td>10</td> <td>NO</td> </tr> <tr> <td>IRON OXIDE</td> <td>1309-38-2</td> <td>0-5</td> <td>5</td> <td>10 (as Fe O)</td> <td>NO</td> </tr> <tr> <td>ALUMINIUM OXIDE*</td> <td>1344-28-1</td> <td>0-2</td> <td>5</td> <td>10</td> <td>NO</td> </tr> <tr> <td>SODIUM SILICATE</td> <td>1344-09-8</td> <td>0-5</td> <td>Not Registered</td> <td>5</td> <td>NO</td> </tr> <tr> <td>POTASSIUM SILICATE</td> <td>1312-76-1</td> <td>0-5</td> <td>Not Registered</td> <td>5</td> <td>NO</td> </tr> <tr> <td>GRAPHITE</td> <td>7782-42-5</td> <td>0-5</td> <td>Not Registered</td> <td>5</td> <td>NO</td> </tr> <tr> <td>SILICON DIOXIDE</td> <td>7631-86-9</td> <td>1-5</td> <td>5</td> <td>3</td> <td>NO</td> </tr> <tr> <td>FELDSPAR</td> <td>68476-25-5</td> <td>0-3</td> <td>Not Registered</td> <td>2</td> <td>NO</td> </tr> </tbody> </table>						INGREDIENTS	CAS #	APPROX %	OSHA PEL (Mg/M <sup>3</sup> )	ACGIH TLV	CARCINOGENICITY	IRON	7439-89-6	65-85	5	10 (as Fe O)	NO	CELLULOSE	9004-34-6	.5-10	Not Registered	10	NO	MANGANESE*	7439-96-5	1-5.0	5	1	NO	SILICON	7440-21-3	1-5.0	5 (as SiO)	3 (as SiO)	NO	TITANIUM DIOXIDE	13462-67-7	1-15	15	10	NO	POTASSIUM TITANATE	12030-97-6	0-3	Not Registered	10	NO	CALCIUM CARBONATE	1317-65-3	1-5	5 (as CaO)	10	NO	SODIUM TITANATE	12034-34-3	0-2	Not Registered	10	NO	IRON OXIDE	1309-38-2	0-5	5	10 (as Fe O)	NO	ALUMINIUM OXIDE*	1344-28-1	0-2	5	10	NO	SODIUM SILICATE	1344-09-8	0-5	Not Registered	5	NO	POTASSIUM SILICATE	1312-76-1	0-5	Not Registered	5	NO	GRAPHITE	7782-42-5	0-5	Not Registered	5	NO	SILICON DIOXIDE	7631-86-9	1-5	5	3	NO	FELDSPAR	68476-25-5	0-3	Not Registered	2	NO
INGREDIENTS	CAS #	APPROX %	OSHA PEL (Mg/M <sup>3</sup> )	ACGIH TLV	CARCINOGENICITY																																																																																																						
IRON	7439-89-6	65-85	5	10 (as Fe O)	NO																																																																																																						
CELLULOSE	9004-34-6	.5-10	Not Registered	10	NO																																																																																																						
MANGANESE*	7439-96-5	1-5.0	5	1	NO																																																																																																						
SILICON	7440-21-3	1-5.0	5 (as SiO)	3 (as SiO)	NO																																																																																																						
TITANIUM DIOXIDE	13462-67-7	1-15	15	10	NO																																																																																																						
POTASSIUM TITANATE	12030-97-6	0-3	Not Registered	10	NO																																																																																																						
CALCIUM CARBONATE	1317-65-3	1-5	5 (as CaO)	10	NO																																																																																																						
SODIUM TITANATE	12034-34-3	0-2	Not Registered	10	NO																																																																																																						
IRON OXIDE	1309-38-2	0-5	5	10 (as Fe O)	NO																																																																																																						
ALUMINIUM OXIDE*	1344-28-1	0-2	5	10	NO																																																																																																						
SODIUM SILICATE	1344-09-8	0-5	Not Registered	5	NO																																																																																																						
POTASSIUM SILICATE	1312-76-1	0-5	Not Registered	5	NO																																																																																																						
GRAPHITE	7782-42-5	0-5	Not Registered	5	NO																																																																																																						
SILICON DIOXIDE	7631-86-9	1-5	5	3	NO																																																																																																						
FELDSPAR	68476-25-5	0-3	Not Registered	2	NO																																																																																																						
<b>SECTION 3: Physical Properties</b> NOT APPLICABLE						<p>* The ingredients marked with an asterisk are covered under the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372.</p>																																																																																																					
<b>SECTION 4: Fire and Explosion Hazard Data</b> These products as shipped are non-hazardous, nonflammable, non-explosive, and non-reactive. Welding arc and sparks can ignite combustibles and flammables. Refer to American National Standard Z-49.1 for fire prevention during the use of welding procedures.						<b>SECTION 6: Health Hazard Data</b> <p><b>THRESHOLD LIMIT VALUE:</b> 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 that may modify this TLV.</p> <p><b>EFFECTS OF OVEREXPOSURE: FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.</b> Aggravation of preexisting respiratory or allergic conditions may occur in some workers. Short term (ACUTE) overexposure to welding fumes may result in discomfort such as: dizziness, nausea, and dryness or irritation of the nose, throat, or eyes. Long term (CHRONIC) overexposure to welding fumes may lead to siderosis (iron deposits in the lung) and is believed by some investigators to affect pulmonary function. ARC RAYS can injure eyes and burn skin. ELECTRIC SHOCK CAN KILL. See Section 7.</p> <p><b>EMERGENCY &amp; FIRST AID PROCEDURES:</b> Employ first aid techniques recommended by the American Red Cross. For skin contact, remove particles by thoroughly washing with soap and water. For eye contact, flush with water for at least 15 minutes, get medical attention. For inhalation, remove from exposure and get medical attention if experiencing breathing difficulty.</p>																																																																																																					
<b>SECTION 5: Reactivity Data</b> <p><b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>            Welding gases cannot be classified simply. Their composition and quantities are dependent upon the metal being welded, the process, the 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 of 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.</p> <p>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 volatilization, reaction, or oxidation of the materials shown in Section 2 plus those from base metal, coating, etc... as noted in Section 6. These components are virtually always present as complex compounds and not as metals (Characterization of Arc Welding Fume: American Welding Society).</p> <p>Reasonably expected fume or gas constituents of this product could include primarily oxides of iron; secondarily complex oxides of manganese, silicon, and aluminum.</p> <p>Gaseous reaction may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.</p> <p>One recommended way to determine the composition and quantity of fumes and gases to which worker's 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.</p>						<b>SECTION 8: DISCLAIMER</b> ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF THE INFORMATION HEREIN, INWELD EXTENDS NO WARRANTIES, EXPRESS OR IMPLIED, MAKES NO REPRESENTATIONS AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF INFORMATION FOR APPLICATION TO PURCHASER'S INTENDED PURPOSE OR FOR CONSEQUENCES OF ITS USE. JUDGMENTS AS TO THE SUITABILITY OF INFORMATION FOR PURCHASER'S PURPOSES ARE PURCHASER'S RESPONSIBILITY.																																																																																																					
<b>SECTION 7: Precautions For Safe Handling And Use/Applicable Control Measures</b> <p>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 354140, MIAMI, FL 33135 AND OSHA PUBLICATION 2206 (29 C.R.F. 1910), U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402 FOR MORE DETAIL.</p> <p><b>VENTILATION:</b> Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV'S in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.</p> <p><b>RESPIRATORY PROTECTION:</b> 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.</p> <p><b>EYE PROTECTION:</b> Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to the next lighter shade that gives sufficient view of the weld zone. Provide protective screens and flash goggles, if necessary, to shield others.</p> <p><b>PROTECTIVE CLOTHING:</b> Wear head, hand, and body protection that 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.</p> <p><b>PROCEDURE FOR CLEANING OF SPILLS OR LEAKS:</b> Not applicable.</p> <p><b>WASTE DISPOSAL METHOD:</b> 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.</p>																																																																																																											