Carbon and Low Alloy Steel Electrodes

SAFETY DATA SHEET


SECTION 1 – IDENTIFICATION

Manufacturer/Supplier Name: UNIBRAZE
Address: 1050 Penner Crest Houston, TX 77055
Website: www.unibraze.com

Product Type: LOW HYDROGEN SHIELDED METAL ARC WELDING (SMAW) ELECTRODES

GROUP A: Product For: CARBON STEEL
AWS Specification: E6010, E6011, E6012, E6013, E6022, E7014, E7024-1

GROUP B: Product For: LOW HYDROGEN CARBON STEEL
AWS Specification: E7016, E7018, E7018-1, E7018-M

GROUP C: Product For: LOW HYDROGEN, LOW ALLOY STEEL

GROUP D: Product For: HIGH STRENGTH CARBON STEEL / EEC
AWS Specification: E7010-P1, E8010-P1, E9010-G, E9010-P1

SECTION 2 – IDENTIFICATION OF HAZARDS

IMPORTANT: This section covers the hazardous materials from which this product is manufactured. This data has been classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200). The fumes and gases produced during normal use of this product are addressed in Section 8.

HAZARD CLASSIFICATION – This product is not classified as hazardous according to applicable GHS hazard classification criteria.

LABEL ELEMENTS: Hazard Symbol – No symbol required
Signal Word – No signal word required
Precautionary Statement – Not Applicable

HAZARDOUS INGREDIENT CAS EINECS REGULATORY HAZARD CLASSIFICATION/DESIGNATION

ALUMINIUM OXIDE 1344-28-1 215-691-6 None IARC
CALCIUM CARBONATE 1317-65-3 215-279-6 None NTP
CELLULOSE 9004-34-6 232-674-9 None OSHA
CHROMIUM 7440-47-3 231-157-5 G - R9; Carc 1B - R45; Muta 2 - R46; Repr 3 - R62; Tt - R26; T - R24/25, R48/23; C - R35, R42/43; N - R50, R533
FLUOR* 7789-75-5 232-188-7 None IARC
IRON 7439-89-6 231-236-4 None NTP
MAGNESIUM CARBONATE 546-93-0 208-915-9 None OSHA
MANGANESE 7429-96-5 231-105-1 Xn - X R20/22
MICA 12001-26-2 None None IARC
MOLYBDENUM 7439-98-7 231-107-2 Xn - R48/20/22; Xi - H37
NICKEL 7440-02-0 231-111-4 Carc 3 - R40; T - R43, R48/23 1 X
OXIDATION 12136-45-7 235-227-6 None NTP
SILICA 14808-60-7 238-878-4 Xn - R48/20, R40/20 K
(Amorphous Silica Fume) 69012-64-2 273-761-5 None OSHA
SILICON 7440-21-3 231-130-8 None NTP
SODIUM OXIDE 1313-59-3 215-208-9 None OSHA
STRONTIUM CARBONATE 1633-05-2 216-643-7 None OSHA
TITANIUM DIOXIDE 13436-67-3 236-675-5 None NTP

† – European Inventory of Existing Chemical Substances Number
E – International Agency for Research on Cancer (IARC)
G – Globally Harmonized System of Classification and Labeling
H – Hazard Communication Standard (OSHA)
K – Known Carcinogen
L – Listed Cancerogen
M – Max Safe Concentration
N – Not Applicable
O – OSHA Hazard Communication Standard
P – Primary Route of Entry
Q – Quoted to the U.S. Environmental Protection Agency (EPA)
R – Rating
T – Time Period
U – Under OSHA Hazard Communication Standard
W – Warnings

The following symbols correspond with the EU 67/548/EEC column above are in European Union Directive 67/548/EEC Annex 1 and EC 1272/2008 Annex VI – Table 3.2:

Xn = Harmful
Xi = Irritant
O = Oxidizer
C = Corrosive
N = Dangerous for the Environment
T = Toxic
T+ = Extremely Toxic

WARNING! Avoid breathing welding fumes and gases, they may be dangerous to your health.

Always use adequate ventilation. Always use appropriate personal protective equipment.

PRIMARY ROUTES OF ENTRY: Respiratory System, Eyes and/or Skin

ELECTRIC SHOCK: Arc welding and associated processes can kill. See Section 8.

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures and electrodes used. Most fume ingredients are present as complex oxides and compounds and not as pure metals. When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in this section, plus those from the base metal and coating, etc., as noted above. Monitor for the materials identified in the list within this section.

Fumes from the use of this product may contain complex oxides or compounds of the following elements and molecules: amorphous silica fume, calcium oxide, chromium, fluorospar or fluorides, manganese, nickel, silica and strontium. Other reasonably expected constituents of the fume would also include complex oxides of iron, titanium, silicon and molybdenum. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. 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). One recommended way to determine the composition and quantity of fumes and gases to which workers 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. Also, from AWS is F1.3 “Evaluating Contaminants in the Welding Environment - A Sampling Strategy Guide”, which gives additional advice on sampling.

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SECTION 3 - HAZARDOUS INGREDIENTS

### CONTENT PERCENTAGE BY INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>CAS</th>
<th>EINECS</th>
<th>GROUP AND %WEIGHT</th>
<th>INGREDIENT</th>
<th>CAS</th>
<th>EINECS</th>
<th>GROUP AND %WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALUMINUM OXIDE</td>
<td>1344-28-1</td>
<td>215-691-6</td>
<td>&lt;5</td>
<td>MOLYBDENUM</td>
<td>7439-98-7</td>
<td>231-107-2</td>
<td>&lt;2</td>
</tr>
<tr>
<td>CALCIUM CARBONATE</td>
<td>1317-65-3</td>
<td>215-279-6</td>
<td>&lt;2</td>
<td>NICKEL</td>
<td>7440-02-0</td>
<td>231-111-4</td>
<td>&lt;5</td>
</tr>
<tr>
<td>CELLULOSE</td>
<td>9004-34-6</td>
<td>232-674-9</td>
<td>&lt;5</td>
<td>POTASSIUM OXIDE</td>
<td>12136-45-7</td>
<td>235-227-6</td>
<td>&lt;2</td>
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<tr>
<td>CHROMIUM#</td>
<td>7440-47-3</td>
<td>231-157-5</td>
<td>1.5</td>
<td>SILICA</td>
<td>14808-60-7</td>
<td>239-878-4</td>
<td>&lt;7</td>
</tr>
<tr>
<td>FLUORSPAR</td>
<td>7789-75-9</td>
<td>232-188-7</td>
<td>1.2</td>
<td>(Amorphous Silica Fume)</td>
<td>69012-64-2</td>
<td>273-761-5</td>
<td>&lt;7</td>
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<tr>
<td>IRON</td>
<td>4739-89-6</td>
<td>231-096-4</td>
<td>70-90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAGNESIUM#</td>
<td>546-93-0</td>
<td>208-915-9</td>
<td>&lt;2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM OXIDE</td>
<td>7439-96-5</td>
<td>231-105-1</td>
<td>&lt;2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRONTIUM CARBONATE</td>
<td>1633-05-2</td>
<td>216-643-7</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-3</td>
<td>236-675-5</td>
<td>&lt;14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

--- Dashes indicate the ingredient is not present within the group of products

### SECTION 4 - FIRST AID MEASURES

**INHALATION:** If breathing is difficult provide fresh air and contact physician.  
**EYE/SKIN INJURIES:** For radiation burns, see physician.  
Section 11 of this SDS covers the acute effects of overexposure to the various ingredients within the welding consumable. Section 8 of this SDS lists the exposure limits and covers methods for protecting yourself and your co-workers.

### SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

Welding consumables applicable to this sheet as shipped are nonreactive, nonflammable, non explosive and essentially nonhazardous until welded. Welding arcs and sparks can ignite combustible and flammable products. Unused welding consumables may remain hot for a period of time after completion of a welding process. See American National Standard (ANSI) Z 49.1 for further general safety information on the use and handling of welding consumables and associated procedures.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Solid objects can be picked up and placed into a container. Wear proper personal protective equipment while handling. Do not discard as general trash.

### SECTION 7 - HANDLING AND STORAGE

**HANDLING:** No specific requirements in the form supplied. Handle with care to avoid cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and product labels.  
**STORAGE:** Keep separate from acids and strong bases to prevent possible chemical reactions.

### SECTION 8 - EXPOSURE CONTROL AND PERSONAL PROTECTION

Read and understand the instructions and the labels on the packaging. Welding fumes do not have a specific OSHA PEL or ACGIH TLV. The OSHA PEL for Particulate - Not Otherwise Specified (PNOS) is 5 mg/m³ – Resparable Fraction, 15 mg/m³ – Total Dust. The ACGIH TLV for Particles – Not Otherwise Specified is defined as 3 mg/m³ – Respirable Particles, 10 mg/m³ – Inhaleable Particles. The individual complex compounds within the fume may have a lower OSHA PEL or ACGIH TLV than the OSHA Particulate – Not Otherwise Specified (PNOS) and ACGIH Particles – Not Otherwise Specified (PNOS). An Industrial Hygienist, the OSHA Permissible Exposure Limits for Air Contaminants (29 CFR 1910.1000), and the ACGIH Threshold Limit Values should be consulted to determine the specific fume constituents present and their respective exposure limits. European Union Occupational Exposure Limits (EU OEL) are listed with the most stringent limit among the EU member nations. All exposure limits are in milligrams per cubic meter (mg/m³).

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>CAS</th>
<th>EINECS</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EU OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALUMINUM OXIDE#</td>
<td>1344-28-1</td>
<td>215-691-6</td>
<td>5 R*</td>
<td>1 R* (A4)</td>
<td>1.5 R*(Aerosol) - Germany, 2-Poland</td>
</tr>
<tr>
<td>CALCIUM CARBONATE</td>
<td>1317-65-3</td>
<td>215-279-6</td>
<td>5 R*, 5 (as CaO)</td>
<td>3 R*, 2 (as CaO)</td>
<td>3 R* (Aerosol) - Switzerland, 10* (Aerosol) - UK</td>
</tr>
<tr>
<td>CELLULOSE</td>
<td>9004-34-6</td>
<td>232-674-9</td>
<td>5 R*</td>
<td>10</td>
<td>3 R* (Aerosol) - Switzerland, 10* (Aerosol) - UK</td>
</tr>
<tr>
<td>CHROMIUM#</td>
<td>7440-47-3</td>
<td>231-157-5</td>
<td>1 (Metal)</td>
<td>0.5 (Metal) (A4)</td>
<td>0.1*I (Aerosol) - Switzerland</td>
</tr>
<tr>
<td>FLUORSPAR</td>
<td>7789-75-9</td>
<td>232-188-7</td>
<td>2.5 (f)</td>
<td>0.05 (Cr Iii Cpdns)</td>
<td>0.05 (Cr I V Cpdns) (A4)</td>
</tr>
<tr>
<td>IRON+</td>
<td>7439-89-6</td>
<td>231-096-4</td>
<td>5 R*</td>
<td>2.5 (f) (A4)</td>
<td>0.01 (Cr I V Cpdns) (A1)</td>
</tr>
<tr>
<td>MAGNESIUM#</td>
<td>546-93-0</td>
<td>208-915-9</td>
<td>5 R*</td>
<td>3 R*</td>
<td>1*I (Fe2O3) (A4)</td>
</tr>
<tr>
<td>MANGANES#</td>
<td>7439-96-5</td>
<td>231-105-1</td>
<td>5 R*</td>
<td>3 R*</td>
<td>3 R* (Aerosol) - Fe2O3 - Switzerland</td>
</tr>
<tr>
<td>MICA</td>
<td>12001-26-2</td>
<td>None</td>
<td>3 R*</td>
<td>3 R*</td>
<td>7**(as Fe2O3) - Denmark</td>
</tr>
<tr>
<td>MOLYBDENUM</td>
<td>7439-98-7</td>
<td>231-107-2</td>
<td>5 R*</td>
<td>3 R*; 10*I (Ele and Insol)</td>
<td>3 R* (Aerosol) - Finland, 10* (Aerosol) - UK</td>
</tr>
<tr>
<td>NICKEL#</td>
<td>7440-02-0</td>
<td>231-111-4</td>
<td>1 (Metal)</td>
<td>1.5*I (Ele) (A5)</td>
<td>0.05; 0.1** - Denmark</td>
</tr>
<tr>
<td>POTASSIUM OXIDE</td>
<td>12136-45-7</td>
<td>235-227-6</td>
<td>5 R*</td>
<td>3 R*</td>
<td>1.5*R (Dust NOS - Aerosol) - Germany</td>
</tr>
<tr>
<td>SILICA#</td>
<td>14808-60-7</td>
<td>238-878-4</td>
<td>0.1*R</td>
<td>0.025*R (A2)</td>
<td>0.1 (Fused, Respirable Dust) - Denmark</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-3</td>
<td>236-675-5</td>
<td>15(Dust)</td>
<td>10(A4)</td>
<td>1.5*R (Dust NOS) - Aerosol - Germany</td>
</tr>
</tbody>
</table>

R* - Respirable Fraction  
R** - Respirable Fraction - Short Term Exposure Limit  
I* - Inhalable Fraction  
I** - Inhalable Fraction - Short Term Exposure Limit  
** - Ceiling Limit  
*** - Short Term Exposure Limit  
+ - As a nuisance particulate covered under "Particulates Not Otherwise Regulated" by OSHA or "Particulates Not Otherwise Classified" by ACGIH  
+ - Crystalline silica is bound within the product as it exists in the package. However, research indicates silica is present in welding fume in the amorphous (noncrystalline) form.  
# - Reportable material under Section 313 of SARA.  
** - Limit of 0.1 mg/m³ is for Respirable Mn in 2013 by ACGIH  
## - Limit of 0.02 mg/m³ is for Respirable Mn in 2013 by ACGIH  
REL TWA and STEL - Limit of 0.1 mg/m³ is for Respirable Mn in 2013 by ACGIH.  
REllement of Soluble Insol - Insoluble Inorg - Inorganic Cpdns - Compounds NOS - Not Otherwise Specified (A1) - Confirmed Human Carcinogen per ACGIH (A2) - Suspected Human Carcinogenic per ACGIH (A3) - Confirmed Animal Carcinogen with Unknown Relevance to Humans per ACGIH (A4) - Not Classifiable as a Human Carcinogen per ACGIH (A5) - Not Suspected as a Human Carcinogen per ACGIH (noncrystalline) form
VENTILATION: Use enough ventilation, local exhaust at the arc or both to keep the fumes and gases below the PEL/TLV/OELs in the worker’s breathing zone and the general area. Train the welder to keep his head out of the fumes.

RESPIRATORY PROTECTION: Use NIOSH approved or equivalent fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below the regulatory limits.

EYE PROTECTION: Use eye protection or use face shield with filter lens. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others from the weld arc flash.

PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z49.1. 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 nonsynthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not applicable

SPECIAL PRECAUTIONS (IMPORTANT): Maintain exposure below the PEL/TLV/OEL. Use industrial hygiene monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLV/OEL. Always use exhaust ventilation. Refer to the following sources for important additional information: American National Standard (ANSI) Z49.1; Safety in Welding and Cutting (1973) published by the American Welding Society, P.O. Box 351040, Miami, FL 33133 and OSHA Publication 2209 (29 CFR 1910), U.S. Government Printing Office, Washington, DC 20402.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Welding consumables applicable to this sheet as shipped are nonreactive, nonflammable, nonexplosive and essentially nonhazardous until welded.

PHYSICAL STATE: Cored Wire
COLOR: Gray
ODOR: N/A
FORM: Coated Rod

SECTION 10 – STABILITY AND REACTIVITY

GENERAL: Welding consumables applicable to this sheet are solid and nonvolatile as shipped. This product is only intended for use per the welding parameters it was designed for. When this product is used for welding, hazardous fumes may be created. Other factors to consider include the base metal, base metal preparation and base metal coatings. All of these factors can contribute to the fume and gases generated during welding. The amount of fume varies with the welding parameters. STABILITY: This product is stable under normal conditions.

REACTIVITY: Contact with acids or strong bases may cause generation of gas.

SECTION 11 – TOXICOLOGICAL INFORMATION

SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS: Welding Fumes - May result in discomfort such as dizziness, nausea or dryness or irritation of nose, throat or eyes. Chromium - Inhalation of fume with chromium (VI) compounds may cause irritation of the respiratory tract, lung damage and asthma-like symptoms. Swallowing chromium (VI) salts can cause severe irritation or death. Dust on skin can form ulcers. Eyes may be burned by chromium (VI) compounds. Allergic reactions may occur in some people. Fluoride - Fluoride compounds evolved may cause skin and eye burns, pulmonary edema and bronchitis. Iron, Iron Oxide - None are known. Treat as nuisance dust or fume. Magnesium, Magnesium Oxide - Overexposure may cause metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24 to 48 hours following overexposure. Manganese - Metal fume fever characterized by chills, fever, upset stomach, vomiting, irritation of the throat and aching of body. Recovery is generally complete within 48 hours of the overexposure. Mica - Dust may cause irritation of the respiratory system, skin and eyes. Molybdenum - Irritation of the eyes, nose and throat. Nickel, Nickel Compounds - Metallic taste, nausea, tightness in chest, metal fume fever, allergic reaction. Potassium Oxide - Dust or fumes may cause irritation of the respiratory system, skin and eyes. Silica (Amorphous) - Dust and fumes may cause irritation of the respiratory system, skin and eyes. Strontium Compounds - Strontium salts are generally non-toxic and are normally present in the human body. In large oral doses, they may cause gastrointestinal disorders, vomiting and diarrhea. Titanium Dioxide - Irritation of respiratory system.

LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS: Welding Fumes - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or “siderosis.” Aluminum Oxide - Pulmonary fibrosis and emphysema. Calcium Oxide - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. Chromium - Ulceration and perforation of nasal septum. Respiratory irritation may occur with symptoms resembling asthma. Studies have shown that chromate production workers exposed to hexavalent chromium compounds have an excess of lung cancers. Chromium (VI) compounds are more readily absorbed through the skin than chromium (III) compounds. Good practice requires the reduction of employee exposure to chromium (III) and (VI) compounds. Fluorides - Serious bone erosion (Osteoporosis) and mottling of teeth. Iron, Iron Oxide Fumes - Can cause siderosis (deposits of iron in lungs) which some researchers believe may affect pulmonary function. Lungs will clear in time when exposed to iron and its compounds ceases. Iron and magnetite (Fe₃O₄) are not regarded as fibrogenic materials. Magnesium, Magnesium Oxide - No adverse long term health effects have been reported in the literature. Manganese - Long-term overexposure to manganese compounds may affect the central nervous system. Symptoms may be similar to Parkinson’s disease and can include slowness, changes in handwriting, gait impairment, muscle spasms and cramps and less commonly, tremor and behavioral changes. Employees who are overexposed to manganese compounds should be seen by a physician for early detection of neurologic problems. 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. Mica - Prolonged overexposure may cause scarring of the lungs and pneumoconiosis characterized by cough, shortness of breath, weakness and weight loss. Molybdenum - Prolonged overexposure may result in loss of appetite, weight loss, loss of muscle coordination, difficulty in breathing and anemia. Nickel, Nickel Compounds - Lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers. Potassium Oxide - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum and pneumoconiosis. Silica (Amorphous) - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrotic potential. Sodium Oxide - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. Strontium Compounds - Strontium at high doses is known to concentrate in bone. Major signs of chronic toxicity, which involve the skeleton, have been labeled as "strontium rickets." Titanium Dioxide - Pulmonary irritation and slight fibrosis.

MEDICAL CONDITIONS TO BE NOTED: Persons with pre-existing impaired lung functions (asthma-like conditions). Persons with a pacemaker should not go near welding and cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device. Respirators are to be worn only after being medically cleared by your company-designated physician.

EMERGENCY AND FIRST AID PROCEDURES: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. If irritation or flash burns develop after exposure, consult a physician.

CARCINOGENICITY: Chromium VI compounds, nickel compounds and silica (crystalline quartz) are classified as IARC Group 1 and NTP Group K carcinogens. Titanium dioxide compounds are classified as IARC Group 2B carcinogens. Chromium VI compounds, nickel compounds, silica (crystalline quartz) and welding fumes must be considered as carcinogens under OSHA (29 CFR 1910.1200).

CALIFORNIA PROPOSITION 65: For Group B, C and D products: WARNING: This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.) For Group A products: WARNING: This product, when used for welding or cutting, produces or fumes which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

SECTION 12 – ECOLOGICAL INFORMATION

Welding processes can release fumes directly to the environment. Welding wire can degrade if left outside and unprotected. Residues from welding consumables and processes could degrade and accumulate in the soil and groundwater.

SECTION 13 – DISPOSAL CONSIDERATIONS

Use recycling procedures if available. Discard any product, residue, packaging, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state and local regulations.

SECTION 14 – TRANSPORT INFORMATION

No international regulations or restrictions are applicable. No special precautions are necessary.
SECTION 15 – REGULATORY INFORMATION

Read and understand the manufacturer’s instructions, your employer’s safety practices and the health and safety instructions on the label and the safety data sheet. Observe all local and federal rules and regulations. Take all necessary precautions to protect yourself and others.

United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

CERCLA/SARA TITLE III: Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>RQ(lb)</th>
<th>TPQ (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products on this SDS are a solid solution in the form of a solid article.</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

Section 311 Hazard Class
As shipped: Immediate 
In use: Immediate delayed

EPCRA/SARA TITLE III 313 TOXIC CHEMICALS: The following metallic components are listed as SARA 313 “Toxic Chemicals” and potentially subject to annual SARA 312 reporting: Chromium, Manganese and Nickel. See Section 3 for weight percentage.

CANADIAN WHMIS CLASSIFICATION: Class D; Division 2, Subdivision A

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All constituents of these products are on the Domestic Substance List (DSL).

SECTION 16 – OTHER INFORMATION

The following Risk and Safety Phrase Texts and Hazard Statements correspond with the columns labeled - EU 67/548/EEC within Section 2 of this safety data sheet. Take appropriate precautions and protective measures to eliminate or limit the associated hazard.


R9 – Explosive when mixed with combustible material
R20/22 – Harmful by inhalation and if swallowed
R24/25 – Toxic in contact with skin and if swallowed
R26 – Very toxic by inhalation R35 – Causes severe burns R36/37 – Irritating to eyes and respiratory system R40 – Limited evidence of a carcinogenic effect
R40/20 – Harmful: possible risk of irreversible effects through inhalation
R42/43 – May cause sensitization by inhalation and skin contact
R43 – May cause sensitization by skin contact
R45 – May cause cancer

R46 – May cause heritable genetic damage
R48/20 – Harmful: danger of serious damage to health by prolonged exposure through inhalation
R48/20/22 – Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R48/23 – Toxic: danger of serious damage to health by prolonged exposure through inhalation
R50 – Very toxic to aquatic organisms
R53 – May cause long-term adverse effects in the aquatic environment
R62 – Possible risk of impaired fertility

For additional information please refer to the following sources:


Threshold Limit Values and Biological Exposure Indices, American Conference of Governmental Hygienists (ACGIH), 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

NFPA 51B “Standard for Fire Prevention during Welding, Cutting and Other Hot Work” published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

UK: WMA Publication 236 and 237, “Hazards from Welding Fume”, “The arc welder at work, some general aspects of health and safety”.


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