Safety Data Sheet

Issue date 01-Jun-2018 **Revision date** 01-Jun-2018 **Revision Number** 1

1. IDENTIFICATION

Product identification

Product identifier	Cronatron™ 7770 Multi-Purpose Hardfacing Buildup Stick Rod Electrode
Other means of identification	CW1876
Recommended use	Electrode
Restrictions on use	Covered electrode for Shielded Metal Arc Welding (SMAW). These items are only intended for normal welding purposes.

Supplier

Corporate Headquarters:
Cronatron, A Lawson Brand
Lawson Products, Inc.
8770 W.Bryn Mawr Ave.- Suite 900
Chicago, IL 60631
1-866-529-7664

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

Symbol

Signal word WARNING

Hazard statements
H317 - May cause an allergic skin reaction
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P285 - In case of inadequate ventilation wear respiratory protection
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing and eye/face protection
P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Response

General

P314 - Get medical advice/attention if you feel unwell.

Storage

Not available

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)

None known.

Physical Hazards Not Otherwise Classified (PHNOC)

When this product is used in a welding process the most important hazards are: heat, radiation, electric shock and welding fumes.

Unknown acute toxicity

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

Mixture.

Chemical name	CAS-No	Weight %
Iron	7439-89-6	40-70
Titanium dioxide	13463-67-7	10-30
Nickel	7440-02-0	10-30
Chromium	7440-47-3	10-30
Sodium Silicate	1344-09-8	1-5
Potassium Silicate	1312-76-1	1-5
Feldspar	68476-25-5	1-5
Calcium Fluoride	7789-75-5	1-5
Calcium Carbonate	1317-65-3	1-5
Aluminum Lithium Silicate	12068-40-5	1-5
Potassium Oxalate	6487-48-5	0.5-1.5
Manganese	7439-96-5	0.5-1.5

4. FIRST-AID MEASURES

Necessary first-aid measures

General Information

Call for medical aid. Employ First Aid techniques recommended by the Red Cross.

Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Administer artificial respiration if not breathing. If breathing has stopped, contact emergency medical services immediately.

Ingestion

Seek medical attention.

Skin contact Wash affected area with soap and water to remove dust or particles. If rash develops, see a physician. For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist.

Eye contact Flush with a large amount of fresh water for at least 15 minutes to remove dusts or fumes. For radiation burns due to arc flash, see physician.

Most important symptoms (acute) Not available.

Most important symptoms (over-exposure) Not available.

Indication of any immediate medical attention and special treatment needed In case of ELECTRIC SHOCK: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live wire parts or wires. If breathing has stopped, begin artificial respiration and obtain medical assistance immediately. If no detectable pulse, begin Cardiopulmonary Resuscitation. (CPR) and immediately call for medical aid.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Use the extinguishing media recommended for the burning material and fire situation.

Unsuitable extinguishing media Not available.

Specific hazards Welding arc and sparks can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding. These products as shipped are non-hazardous, non-flammable, non-explosive, and non-reactive.

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Reasonably expected fume constituents of the fume could include complex oxides of iron, chromium, manganese and nickel.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Solid objects may be picked up and placed in a container. Make sure the solid objects are at room temperature before handling. Gloves should be worn when handling to prevent cuts.

Methods and materials for containment and cleaning up Do not flush residue into waterways.

7. HANDLING AND STORAGE

Precautions for safe handling Before using this product, contact your doctor to determine if exposure to this product or use of this product will aggravate your medical conditions. Handle with care to avoid cuts and prevent the wire from piercing the skin. Wear gloves. Some individuals may develop an allergic reaction to certain materials. Keep all warning and identification labels on the product. Avoid exposure to dust and do not ingest. Gloves should be worn when handling to prevent cuts. Warn wearers of heart pacemakers or other medical electronic equipment vital to life that welding operations may impede the function of the medical device. Handle with care to avoid damaging the product and keep product dry.

Conditions for safe storage, including any Keep material sealed and dry before use. After using, keep remaining product sealed and dry and do not remove product identification label or warning label. Do not remove product

incompatibilities identification label or warning label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Iron	-	-	-
Titanium dioxide	15 mg/m³ TWA	10 mg/m³ TWA	-
Nickel	1 mg/m³ TWA	1.5 mg/m³ TWA	0.015 mg/m³ TWA 0.015 mg/m³ TWA
Chromium	1 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA
Sodium Silicate	-	-	-
Potassium Silicate	-	-	-
Feldspar	-	-	-
Calcium Fluoride	2.5 mg/m³ TWA	2.5 mg/m³ TWA	-
Calcium Carbonate	15 mg/m³ TWA 5 mg/m³ TWA	-	10 mg/m³ TWA 5 mg/m³ TWA
Aluminum Lithium Silicate	-	-	-
Potassium Oxalate	-	-	-
Manganese	5 mg/m³ Ceiling	0.02 mg/m³ TWA 0.1 mg/m³ TWA	3 mg/m³ STEL 1 mg/m³ TWA 1 mg/m³ TWA

Appropriate engineering controls

Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits. Read and understand the manufacturer's instructions and precautionary label on this product. Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's in the workers breathing zone and the general area. Train welder to keep head out of fumes. Monitor fume levels and do not exceed permissible exposure limits or values. Wear head, hand and body protection which help prevent injury from radiation, sparks, heat, and electrical shock. See ANSI Z49.1. Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. When the electrode is consumed, fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. The fume and decomposition products, not the ingredients in the electrode, are important. Decomposition products include those originating from the volatilization, reaction, or oxidation of materials in Section 3, plus those from the base metal, etc., as noted above. These components are virtually always present as complex oxides and not as metals (Characterization of Arc Welding Fume: American Welding Society). Reasonably expected fume constituents of the fume could include complex oxides of iron, manganese, chromium and nickel. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc. The fume limit for Cr VI (5 micrograms/m³) may be reached before the ACGIH recommended general welding fume limit of 5 mg/m³ is reached. Monitor fume levels and Cr VI level. Train workers about the hazards of Cr (VI). Read and comply with the OSHA permissible exposure limits for hexavalent chromium (CrVI), Fed. Reg. 71 – 10099 (specifically 29 CFR 1910.1026, 29 CFR 1915.1026, and 29 CFR 1926.1126). For CrVI, OSHA requires: “The employer shall perform initial monitoring to determine the 8-hour TWA exposure for each employee on the basis of a sufficient number of personal breathing zone air samples to accurately characterize full shift exposure on each shift, for each job classification, in each work area”. Specialized equipment is required for monitoring Cr (VI) concentration in the workplace. OSHA Analytical Method Number ID-215 for area and breathing zone sampling and OSHA Analytical Method Number W4001 for wipe samples are listed on the OSHA website - www.osha.gov -as methods for measuring Cr(VI). This standard is complex and the employer should contact an occupational health professional for doing the Cr(VI) monitoring and all other fume monitoring.
Exposure limits are subject to change. Contact ACGIH, OSHA, NIOSH, and IARC for current values.

Individual protection measures, such as personal protective

equipment

Eye protection Wear a helmet or face shield with a filter lens of shade 12 or darker. Provide screens and flash goggles to shield others.

Skin and body protection Wear head, hand, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum, this includes welders' 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 themselves from work and ground, especially if clothing and gloves are wet.

Respiratory protection Use respirable fume respirator or air supplied respirator when welding in a confined space or where local exhaust or ventilation does not keep exposure below the TLV's. Monitor fume levels and do not exceed permissible exposure limits or values. 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.

Hygiene measures Do not eat, drink or smoke when using this product.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland & Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Iron	-	-	-	-	-	-	-	-	-	-
Titanium dioxide	10 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ TWA
Nickel	1.5 mg/m³ TWA	0.05 mg/m³ TWA	1.5 mg/m³ TWA	1 mg/m³ TWA	1.5 mg/m³ TWA	1.5 mg/m³ TWA	1 mg/m³ TWA	1.5 mg/m³ TWA	1 mg/m³ TWAEV	3 mg/m³ STEL 1.5 mg/m³ TWA
Chromium	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWAEV	1.5 mg/m³ STEL 0.5 mg/m³ TWA
Sodium Silicate	-	-	-	-	-	-	-	-	-	-
Potassium Silicate	-	-	-	-	-	-	-	-	-	-
Feldspar	-	-	-	-	-	-	-	-	-	-
Calcium Fluoride	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWA	2.5 mg/m³ TWAEV	5 mg/m³ STEL 2.5 mg/m³ TWA
Calcium Carbonate	10 mg/m³ TWA	20 mg/m³ STEL 10 mg/m³ TWA 3 mg/m³ TWA	-	10 mg/m³ TWA	-	-	-	-	10 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ TWA
Aluminum Lithium Silicate	-	-	-	-	-	-	-	-	-	-
Potassium Oxalate	-	-	-	-	-	-	-	-	-	-
Manganese	0.2 mg/m³ TWA	0.2 mg/m³ TWA 0.2 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.2 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA 0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.2 mg/m³ TWA 0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.02 mg/m³ TWA 0.1 mg/m³ TWA 0.02 mg/m³ TWA 0.1 mg/m³ TWA	0.2 mg/m³ TWAEV 0.2 mg/m³ TWAEV	0.6 mg/m³ STEL 0.2 mg/m³ TWA 0.2 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Odor	None
Odor threshold	Not available
pH	Not applicable
Melting point/range °C	>1000
Melting point/range °F	>1800
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not available
Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not applicable
Vapor density	Not available
Relative density	Not available
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	Contact with chemical substances like acids or strong bases could cause generation of gas.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Not available.

Conditions to avoid

Not available.

Incompatible materials

Contact with chemical substances like acids or strong bases could cause generation of gas.

Hazardous decomposition products

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc.Refer to applicable national exposure limits for the fume compounds. Reasonably expected fume constituents of the fume could include complex oxides of iron, chromium, nickel and manganese. The employer should contact an occupational health professional for doing fume monitoring to determine fumes emitted and to ensure compliance to the applicable country limits.Manganese also has a low exposure limit listed in the USA. Other country exposure limits may be different and the appropriate country standards should be used.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Dermal. Inhalation. Eyes.

Symptoms

Welding fumes cannot be classified simply. Their composition and quantity are dependent upon the metal being welded, the process, procedures and electrodes being 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), the number of welders and the volume of the work area, the quality and the amount of ventilation, 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). The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (group 2B). Pre-existing respiratory or allergic conditions may be aggravated in some individuals (i.e. asthma, emphysema). Overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat or eyes. Primary route of entry is the respiratory system. Iron, iron oxide, manganese: remove from overexposure and apply artificial respiration if needed. Inhalation of chromium can cause irritation of nasal membranes and skin. Fluoride compounds produced may cause eye and skin burns, and pulmonary edema bronchitis. Exposure to extremely high levels of fluorides can cause abdominal pain, diarrhea, muscular weakness, and convulsions. In extreme cases it can cause loss of consciousness and death. Nickel, Nickel oxide: May cause metallic taste, nausea, tightness in chest, fever, and allergic reactions. Ingestion not an expected route of entry, but if ingested product could cause serious injury. Arc Rays can injure eyes. Spatter and molten metal can cause burn injuries. Electric shock can kill. Skin cancer has been reported from arc radiation. May cause an allergic skin reaction. Warn wearers of heart pacemakers or other medical electronic equipment vital to life that welding operations may impede the function of the medical device.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Long term exposure may lead to siderosis (iron deposits in lungs) and is believed by some investigators to affect pulmonary functions. Primary route of entry is the respiratory system. Long term overexposure to iron fumes can cause deposits of iron in the lungs (siderosis). Lungs will clear in time when exposure to iron and its compounds cease. Long term exposure can lead to Manganism.The central nervous system is affected and symptoms include muscular weakness and tremor. Exposed workers should get quarterly medical examinations for manganism. Bronchitis and some lung fibrosis have been reported. Overexposure to fluorides can cause serious bone erosion, excessive calcification of the bone and calcification of the ribs, pelvis, and spinal column. May cause skin rash. Long term overexposure to nickel compounds may cause lung fibrosis, edema or pneumoconiosis. May cause skin rash. Long term overexposure to hexavalent chromium (CrVI) is reported to cause lung cancer in humans.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Iron	-	-	= 30 g/kg (Rat)
Titanium dioxide	-	-	> 10000 mg/kg (Rat)
Nickel	-	-	> 9000 mg/kg (Rat)
Chromium	-	-	-
Sodium Silicate	-	> 4640 mg/kg (Rabbit)	= 1960 mg/kg (Rat)
Potassium Silicate	-	-	= 5700 mg/kg (Rat)
Feldspar	-	-	-
Calcium Fluoride	-	-	= 4250 mg/kg (Rat)
Calcium Carbonate	-	-	-
Aluminum Lithium Silicate	-	-	-
Potassium Oxalate	-	-	= 660 mg/kg (Rat)
Manganese	-	-	= 9 g/kg (Rat)

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA RTK Carcinogens	NTP
Iron	-	-	-	-
Titanium dioxide	A4	Group 2B	Listed	-
Nickel	-	Group 1 Group 2B	Listed	Known Reasonably Anticipated
Chromium	A4	Group 3	-	-
Sodium Silicate	-	-	-	-
Potassium Silicate	-	-	-	-
Feldspar	-	-	-	-
Calcium Fluoride	A4	Group 3	-	-
Calcium Carbonate	-	-	-	-
Aluminum Lithium Silicate	-	-	-	-
Potassium Oxalate	-	-	-	-
Manganese	A4	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Iron	-	-	-	-	-	-
Titanium dioxide	-	IARC 2B	ACGIH A4	ACGIH A4	ACGIH A4	-
Nickel	-	IARC 2B	ACGIH A5	-	ACGIH A5	-

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Chromium	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Sodium Silicate	-	-	-	-	-	-
Potassium Silicate	-	-	-	-	-	-
Feldspar	-	-	-	-	-	-
Calcium Fluoride	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Calcium Carbonate	-	-	-	-	-	-
Aluminum Lithium Silicate	-	-	-	-	-	-
Potassium Oxalate	-	-	-	-	-	-
Manganese	-	-	ACGIH A4	-	ACGIH A4	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish
Iron	-	13.6: 96 h Morone saxatilis mg/L LC50 static
Titanium dioxide	-	-
Nickel	0.18: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.174 - 0.311: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	1.3: 96 h Cyprinus carpio mg/L LC50 semi-static 100: 96 h Brachydanio rerio mg/L LC50 10.4: 96 h Cyprinus carpio mg/L LC50 static
Chromium	-	-
Sodium Silicate	-	301 - 478: 96 h Lepomis macrochirus mg/L LC50 3185: 96 h Brachydanio rerio mg/L LC50 semi-static
Potassium Silicate	-	301 - 478: 96 h Lepomis macrochirus mg/L LC50 3185: 96 h Brachydanio rerio mg/L LC50 semi-static
Feldspar	-	-
Calcium Fluoride	-	-
Calcium Carbonate	-	-
Aluminum Lithium Silicate	-	-
Potassium Oxalate	-	-
Manganese	-	-

Persistence and degradability

Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Iron 7439-89-6	7439-89-6	-
Titanium dioxide 13463-67-7	13463-67-7	-
Nickel 7440-02-0	7440-02-0	-
Chromium 7440-47-3	7440-47-3	-
Sodium Silicate 1344-09-8	1344-09-8	-

Chemical name	CAS-No	Partition coefficient (log Kow)
Potassium Silicate 1312-76-1	1312-76-1	-
Feldspar 68476-25-5	68476-25-5	-
Calcium Fluoride 7789-75-5	7789-75-5	-
Calcium Carbonate 1317-65-3	1317-65-3	-
Aluminum Lithium Silicate 12068-40-5	12068-40-5	-
Potassium Oxalate 6487-48-5	6487-48-5	-
Manganese 7439-96-5	7439-96-5	-

Mobility in soil Not available.

Other adverse effects Welding consumables and materials can degrade into the components used to manufacture the product. Avoid exposure to conditions that could lead to accumulation in soils and groundwater.

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of any grinding dust and waste resides in accordance with EPA or local regulations. Plastic materials, cardboard, and wire can be recycled. Do not flush residue into waterways.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
Proper shipping name Not regulated

TDG
Proper shipping name Not regulated

IATA
Proper shipping name Not regulated

IMDG/IMO
Proper shipping name Not regulated

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Iron	7439-89-6	-	-	-
Titanium dioxide	13463-67-7	-	-	-
Nickel	7440-02-0	-	-	-
Chromium	7440-47-3	-	-	-
Sodium Silicate	1344-09-8	-	-	-
Potassium Silicate	1312-76-1	-	-	-
Feldspar	68476-25-5	-	-	-

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Calcium Fluoride	7789-75-5	-	-	-
Calcium Carbonate	1317-65-3	-	-	-
Aluminum Lithium Silicate	12068-40-5	-	-	-
Potassium Oxalate	6487-48-5	-	-	-
Manganese	7439-96-5	-	-	-

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Iron	7439-89-6	-	-	-
Titanium dioxide	13463-67-7	X	X	X
Nickel	7440-02-0	X	X	X
Chromium	7440-47-3	X	X	X
Sodium Silicate	1344-09-8	-	-	-
Potassium Silicate	1312-76-1	-	-	-
Feldspar	68476-25-5	-	X	X
Calcium Fluoride	7789-75-5	-	X	-
Calcium Carbonate	1317-65-3	X	X	X
Aluminum Lithium Silicate	12068-40-5	-	-	-
Potassium Oxalate	6487-48-5	-	-	-
Manganese	7439-96-5	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Iron	7439-89-6	-
Titanium dioxide	13463-67-7	Carcinogen
Nickel	7440-02-0	Carcinogen
Chromium	7440-47-3	-
Sodium Silicate	1344-09-8	-
Potassium Silicate	1312-76-1	-
Feldspar	68476-25-5	-
Calcium Fluoride	7789-75-5	-
Calcium Carbonate	1317-65-3	-
Aluminum Lithium Silicate	12068-40-5	-
Potassium Oxalate	6487-48-5	-
Manganese	7439-96-5	-

California Proposition 65 — Warning: This product contains or produces a chemical known to the State of California to cause birth defects (or other reproductive harm) and cancer

U.S. Federal Regulations

RCRA - D Series Wastes — Some unused product may contain chromium which is considered hazardous waste if discarded, RCRA ID characteristic Toxic Hazardous Waste D007. Other ingredients in this

product may be considered “hazardous material” in other countries and they may require special disposal methods. Contact your local municipality for the proper disposal method.Residues from welding consumables and processes could degrade and accumulate in groundwater. Welding slag from these products could typically contain the following components from the coating of the electrode: Ni, Fe, Cr, Mn, F, Na, Si, and Ca

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Iron	7439-89-6	-	-
Titanium dioxide	13463-67-7	-	-
Nickel	7440-02-0	100 lb 45.4 kg	0.1 %
Chromium	7440-47-3	5000 lb 2270 kg 10 lb 4.54 kg	1.0 %
Sodium Silicate	1344-09-8	-	-
Potassium Silicate	1312-76-1	-	-
Feldspar	68476-25-5	-	1.0 %
Calcium Fluoride	7789-75-5	-	-
Calcium Carbonate	1317-65-3	-	-
Aluminum Lithium Silicate	12068-40-5	-	-
Potassium Oxalate	6487-48-5	-	-
Manganese	7439-96-5	-	1.0 %

US EPA SARA 311/312 hazardous categorization Not available

International inventories All components of this product are listed on the following inventories: U.S.A. (TSCA 8(b)), Canada (DSL/NDSL) or are exempt.

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Iron	X	X	-
Titanium dioxide	X	X	-
Nickel	X	X	-
Chromium	X	X	-
Sodium Silicate	X	X	-
Potassium Silicate	X	X	-
Feldspar	X	X	-
Calcium Fluoride	X	X	-
Calcium Carbonate	X	X	-
Aluminum Lithium Silicate	X	X	-
Potassium Oxalate	X	X	-
Manganese	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	2
Flammability	0
Instability	0

HMIS

Health	2
Flammability	0
Physical hazards	0

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 01-Jun-2018

Revision date 01-Jun-2018

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet