Safety Data Sheet

Issue date 10-Jul-2018 **Revision date** 10-Jul-2018 **Revision Number** 1

1. IDENTIFICATION

Product identification

Product identifier	Cronatron™ 311 Mild and Carbon Steel MIG Welding Wire
Other means of identification	CW1763
Recommended use	Welding Alloy
Restrictions on use	These items are only intended for normal welding purposes. For industrial use only

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

Solid metallic products are generally classified as 'articles' and do not constitute a hazardous material in solid form under the definitions of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Any articles manufactured from these solid products would be generally classified as non-hazardous. Some hazardous elements contained in these products can be emitted under certain processing conditions such as but not limited to : burning, melting, cutting, sawing, brazing, grinding, machining, milling, and welding. Products in the solid state present no fire or explosion hazard. Small chips, fines, and dust may ignite readily, though. The following classification information is for the hazardous elements which may be released during processing.

Acute toxicity - Oral	Category 4
Hazardous to the aquatic environment	Category 1

Symbol

Signal word WARNING

Hazard statements H302 - Harmful if swallowed

H400 - Very toxic to aquatic life

Precautionary statements

Prevention

P264 - Wash skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment

Response

Ingestion

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth

Spill

P391 - Collect spillage

Storage

Not applicable

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)

None known.

Unknown acute toxicity

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

Mixture.

Chemical name	CAS-No	Weight %
Iron	7439-89-6	93-99
Chromium	7440-47-3	0-2.21
Molybdenum	7439-98-7	0-1.1
Manganese	7439-96-5	0.45-1.75
Silicon	7440-21-3	0.12-0.8
Carbon	7440-44-0	0-0.31
Vanadium pentoxide	1314-62-1	0-0.1

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion

Do NOT induce vomiting. Seek medical attention immediately.

Skin contact

Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek

medical attention if irritation persists.

Most important symptoms (acute)

Symptoms after inhalation:. Short term (acute) overexposure to the gases, fumes, and dusts may include irritation of the eyes, lungs, nose, and throat. Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty in breathing, frequent coughing or chest pains. The presence of chromium/chromate in fume can cause irritation of nasal membranes and skin. The presence of nickel compounds in fume can cause metallic taste, nausea, tightness of chest, fever, and allergic reaction. Excessive inhalation or ingestion of manganese can produce manganese poisoning. Overexposure to manganese compounds may affect the central nervous system, symptoms of which are languor, sleepiness, muscular weakness, emotional disturbances, and spastic gait resembling Parkinsonism. These symptoms can become progressive and permanent if not treated. Excessive inhalation of fumes may cause 'Metal Fume Fever' with flu-like symptoms such as chills, fever, body aches, vomiting, sweating, etc. Symptoms after skin contact:. Causes skin irritation. Symptoms after eye contact:. Causes eye irritation. Symptoms after ingestion:. Not expected to present a significant hazard under anticipated conditions of normal use. Harmful if swallowed.

Most important symptoms (over-exposure)

Not available.

Indication of any immediate medical attention and special treatment needed

Not available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Not available.

Specific hazards

Thermal degradation may produce irritating or poisonous gases.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear personal protective clothing and equipment, see section 8. Ensure adequate ventilation. Avoid release to the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods and materials for containment and cleaning up

Take up mechanically. Collect the material in labeled containers and dispose of according to local and regional authority requirements. See information in section 7 for safe handling. Use personal protection recommended in Section 8. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Welding may produce dust, fumes and gases hazardous to health. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Keep away from sources of ignition - No smoking. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product.

Conditions for safe

Store in a cool, dry, and well-ventilated place. Keep away from incompatible materials.

storage, including any incompatibilities Keep away from open flames, hot surfaces and sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Iron	-	-	-
Chromium	1 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA
Molybdenum	15 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	-
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
Silicon	15 mg/m³ TWA 5 mg/m³ TWA	-	10 mg/m³ TWA 5 mg/m³ TWA
Carbon	-	-	-
Vanadium pentoxide	-	0.05 mg/m³ TWA	-

Appropriate engineering controls Local exhaust and general ventilation must be adequate to meet exposure standards.

Individual protection measures, such as personal protective equipment

Eye protection Wear helmet or face shield with filter lens of appropriate shade number. See ANSI/ASC Z49.1 Section 4.2. Provide protective screens and flash goggles,if necessary, to shield others.

Skin and body protection Wear welding gloves. 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. Welders should not wear short sleeve shirts or short pants.

Respiratory protection If exposure limits are exceeded or irritation is experienced, a NIOSH/MSHA approved respirator is recommended.

Hygiene measures Wash hands after handling the 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	-	-	-	-	-	-	-	-	-	-
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
Molybdenum	10 mg/m³ TWA 3 mg/m³ TWA	3 mg/m³ TWA 10 mg/m³ TWA 3 mg/m³ TWA 10 mg/m³	3 mg/m³ TWA 10 mg/m³ TWA	10 mg/m³ TWA	3 mg/m³ TWA 10 mg/m³ TWA 3 mg/m³ TWA 10 mg/m³	3 mg/m³ TWA 10 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA 10 mg/m³ TWA 3 mg/m³	3 mg/m³ TWA 10 mg/m³ TWA 3 mg/m³ TWA 10 mg/m³	10 mg/m³ TWAEV	20 mg/m³ STEL 6 mg/m³ STEL 10 mg/m³ TWA

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
		TWA			TWA		TWA	TWA		3 mg/m³ TWA 10 mg/m³ TWA 3 mg/m³ TWA
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
Silicon	-	10 mg/m³ TWA 3 mg/m³ TWA	-	10 mg/m³ TWA	-	-	-	-	10 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ TWA
Carbon	-	-	-	-	-	-	-	-	-	-
Vanadium pentoxide	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWAEV	0.15 mg/m³ STEL 0.05 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Solid

Color Metallic

Odor Not available

Odor threshold Not available

pH Not applicable

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not applicable

Boiling point/range °F Not applicable

Flash point °C / °F Not applicable

Evaporation rate Not applicable

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 applicable
Autoignition temperature °C	Not applicable
Autoignition temperature °F	Not applicable
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	Not available.
Chemical stability	Stable under normal conditions. When using it may produce fumes and gases.
Possibility of hazardous reactions	None under normal conditions of use.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	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:. 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). When the electrode is consumed, the fume and gas decomposition products are different in percent and form from the ingredients listed in Section 3. Fume and decomposition products, 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 in the electrode. New compounds not in the electrodes may form during use. Decomposition products include those originating from the volatilization, reaction or oxidation of the wire or rod plus those from the base metal and coating. Reasonably expected fume constituents of the fume could 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^3 of general welding fumes is reached. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may also be formed by radiation from the arc. 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. Improve ventilation if exposures are not below limits.

11. TOXICOLOGICAL INFORMATION

Information on likely routes	Ingestion.

of exposure

Symptoms May be harmful if swallowed.

Delayed and immediate effects as well as chronic effects from short and long-term exposure Not applicable.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Iron	-	-	= 30 g/kg (Rat)
Chromium	-	-	-
Molybdenum	-	-	-
Manganese	-	-	= 9 g/kg (Rat)
Silicon	-	-	= 3160 mg/kg (Rat)
Carbon	-	-	> 10000 mg/kg (Rat)
Vanadium pentoxide	= 4.29 mg/L (Rat) 4 h	= 50 mg/kg (Rabbit)	= 10 mg/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	-	-	-	-
Chromium	A4	Group 3	-	-
Molybdenum	-	-	-	-
Manganese	A4	-	-	-
Silicon	-	-	-	-
Carbon	-	-	-	-
Vanadium pentoxide	A3	Group 2B	Listed	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Iron	-	-	-	-	-	-
Chromium	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Molybdenum	-	-	-	-	-	-
Manganese	-	-	ACGIH A4	-	ACGIH A4	-
Silicon	-	-	-	-	-	-

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Carbon	-	-	-	-	-	-
Vanadium pentoxide	-	IARC 2B	ACGIH A3	ACGIH A4	ACGIH A3	-

12. ECOLOGICAL INFORMATION

Ecotoxicity Very toxic to aquatic life

Chemical name	Algae/aquatic plants	Fish
Iron	-	13.6: 96 h Morone saxatilis mg/L LC50 static
Chromium	-	-
Molybdenum	-	-
Manganese	-	-
Silicon	-	-
Carbon	-	-
Vanadium pentoxide	-	-

Persistence and degradability Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Iron 7439-89-6	7439-89-6	-
Chromium 7440-47-3	7440-47-3	-
Molybdenum 7439-98-7	7439-98-7	-
Manganese 7439-96-5	7439-96-5	-
Silicon 7440-21-3	7440-21-3	-
Carbon 7440-44-0	7440-44-0	-
Vanadium pentoxide 1314-62-1	1314-62-1	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

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	-	-	-
Chromium	7440-47-3	-	-	-
Molybdenum	7439-98-7	-	-	-
Manganese	7439-96-5	-	-	-
Silicon	7440-21-3	-	-	-
Carbon	7440-44-0	-	-	-
Vanadium pentoxide	1314-62-1	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

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	-	-	-
Chromium	7440-47-3	X	X	X
Molybdenum	7439-98-7	X	X	X
Manganese	7439-96-5	X	X	X
Silicon	7440-21-3	X	X	X
Carbon	7440-44-0	-	-	-
Vanadium pentoxide	1314-62-1	X	X	X

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer

Chemical name	CAS-No	California Prop. 65
Iron	7439-89-6	-
Chromium	7440-47-3	-
Molybdenum	7439-98-7	-
Manganese	7439-96-5	-
Silicon	7440-21-3	-
Carbon	7440-44-0	-
Vanadium pentoxide	1314-62-1	Carcinogen

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Iron	7439-89-6	-	-
Chromium	7440-47-3	5000 lb 2270 kg 10 lb 4.54 kg	1.0 %
Molybdenum	7439-98-7	-	-
Manganese	7439-96-5	-	1.0 %
Silicon	7440-21-3	-	-
Carbon	7440-44-0	-	-
Vanadium pentoxide	1314-62-1	1000 lb 454 kg	1.0 %

US EPA SARA 311/312 hazardous categorization Not applicable

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	-
Chromium	X	X	-
Molybdenum	X	X	-
Manganese	X	X	-
Silicon	X	X	-
Carbon	X	X	-
Vanadium pentoxide	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health 1
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	10-Jul-2018
Revision date	10-Jul-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