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Revision Number 1

1. IDENTIFICATION

Product identification

Product identifier	Cronatron™ 79 Nickel and Boron Fluxless Brazing Rod
Other means of identification	CW1027
Recommended use	Brazing Alloy, Welding Alloy
Restrictions on use	For industrial use only, 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 product is normally not considered hazardous as shipped. Avoid contact with eyes. Avoid inhalation of dust from the product. When this product is used in a welding process the most important hazards are: heat, radiation, electric shock and welding fumes.

Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Hazardous to the aquatic environment, long-term hazard	Category 3

Symbol



Signal word

DANGER

Hazard statements

H351 - Suspected of causing cancer
H317 - May cause an allergic skin reaction
H372 - Causes damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing and eye/face protection
P264 - Wash face, hands and any exposed skin thoroughly after handling
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace

Response

General

P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell.

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P321 - For Specific treatment see section 4 of this sds

Storage

P405 - Store locked up

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 %
Nickel	7440-02-0	70-86
Chromium	7440-47-3	6-16
Silicon	7440-21-3	1-5
Iron	7439-89-6	2-5
Boron	7440-42-8	1-4

4. FIRST-AID MEASURES

Necessary first-aid measures

General Information

Never give anything by mouth to an unconscious person. Employ First Aid techniques recommended by the Red Cross. Call for medical aid.

Inhalation

Remove to fresh air immediately or administer oxygen. If not breathing - use CPR (cardiopulmonary resuscitation). If symptoms persist, get medical attention.

Ingestion	Rinse mouth. Induce vomiting, but only if victim is fully conscious. Seek medical attention.
Skin contact	Remove contaminated clothing. Flush area with large quantities of water. Seek medical attention if irritation persists.
Eye contact	Flush with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
Most important symptoms (acute)	Electric shock can kill. For electric shock, disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live wire parts or wires. Immediately contact a physician.
Most important symptoms (over-exposure)	Not applicable.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Dry chemical. Sand.
Unsuitable extinguishing media	Do not use water on fires involving metal dusts.
Specific hazards	Welding arcs and sparks can ignite combustible and flammable materials. Dusts or mists generated in grinding operations may present a fire or explosion hazard when exposed to high temperatures or ignition sources.
Special protective equipment for fire-fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use personal protection recommended in Section 8. For waste disposal, see section 13 of the SDS. Gloves should be worn when handling to prevent cuts. Nitrile gloves are recommended. Wear a NIOSH approved respirator with HEPA filters. Chemical resistant suit and boots are recommended.
Methods and materials for containment and cleaning up	Solid objects may be picked up and placed in a container. Make sure the solid objects are at room temperature before handling. Avoid dust formation. Using a vacuum with a HEPA filter will reduce dust dispersal. Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence. Wear proper protective equipment while handling these materials. Evacuate area of unprotected and unnecessary personnel. Place all spill residues in a double plastic bag and seal.

7. HANDLING AND STORAGE

Precautions for safe handling	Use only with adequate ventilation. Wear respiratory protection or ensure adequate ventilation at all times as vapors can accumulate in confined or poorly ventilated areas. Use personal protection recommended in Section 8.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Nickel	1 mg/m ³ TWA	1.5 mg/m ³ TWA	0.015 mg/m ³ TWA 0.015 mg/m ³ TWA
Chromium	1 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA
Silicon	15 mg/m ³ TWA 5 mg/m ³ TWA	-	10 mg/m ³ TWA 5 mg/m ³ TWA
Iron	-	-	-
Boron	-	-	-

Appropriate engineering controls

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.

Individual protection measures, such as personal protective equipment

Eye protection

Wear helmet or face shield with filter lens. As a rule of thumb, start with a shade which is too dark to see the work area. Then go to the next lighter shade which gives sufficient view of the work area. Provide protective screens and flash goggles, if necessary, 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.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland and Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Nickel	1.5 mg/m ³ TWA	0.05 mg/m ³ TWA	1.5 mg/m ³ TWA	1 mg/m ³ TWA	1.5 mg/m ³ TWA	1.5 mg/m ³ TWA	1 mg/m ³ TWA	1.5 mg/m ³ TWA	1 mg/m ³ TWA EV	3 mg/m ³ STEL 1.5 mg/m ³ TWA
Chromium	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA EV	1.5 mg/m ³ STEL 0.5 mg/m ³ TWA
Silicon	-	10 mg/m ³ TWA 3 mg/m ³ TWA	-	10 mg/m ³ TWA	-	-	-	-	10 mg/m ³ TWA EV	20 mg/m ³ STEL 10 mg/m ³ TWA
Iron	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	Gray, Metallic
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Melting point/range °C	1037-1093 °C
Melting point/range °F	1900-2000 °F
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not applicable
Evaporation rate	Not applicable
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	3.2 - 4.1
Solubility	Insoluble in water
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	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

Conditions to avoid	Stable under normal conditions.
Incompatible materials	Incompatible with acids. Oxidizers.
Hazardous decomposition products	When this product is used in a welding process, hazardous decomposition products would include those from volatilization, reaction or oxidation of the materials listed in section 3 and those from the base metal and coating. Reasonably expected gaseous products would include: Carbon dioxide (CO ₂). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Inhalation.
Symptoms	Overexposure to brazing and soldering fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Inhalation of chromium can cause irritation of nasal membranes and skin. Nickel, Nickel oxide: May cause metallic taste, nausea, tightness in chest, fever, and allergic reactions. Fluoride compounds produced may cause eye and skin burns, and pulmonary edema bronchitis. Electric shock can kill. Arc rays can injure eyes and burn skin.
Delayed and immediate effects as well as chronic effects from short and 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. IRON, IRON OXIDE - 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. MANGANESE - Long term exposure may lead to "Manganism." Central nervous system is affected and symptoms include muscular weakness, impaired speech, impaired movement, and tremors. Exposed workers should get quarterly medical examinations for manganism. Bronchitis and some lung fibrosis have been reported. FLUORIDES - 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. NICKEL, NICKEL OXIDE - Long term overexposure to nickel products may cause lung fibrosis or pneumoconiosis. Long term overexposure to HEXAVALENT CHROMIUM (CrVI) is reported to cause lung cancer in humans. Shielding gases such as argon helium and carbon dioxide are asphyxiates and adequate ventilation must be provided.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Nickel	-	-	> 9000 mg/kg (Rat)
Chromium	-	-	-
Silicon	-	-	= 3160 mg/kg (Rat)
Iron	-	-	= 30 g/kg (Rat)
Boron	-	-	= 650 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
Nickel	-	Group 1 Group 2B	Listed	Known Reasonably Anticipated
Chromium	A4	Group 3	-	-
Silicon	-	-	-	-
Iron	-	-	-	-
Boron	-	-	-	-

**Canadian Province
carcinogenicity limits**

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life

Chemical name	Algae/aquatic plants	Fish
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	-	-
Silicon	-	-
Iron	-	13.6: 96 h Morone saxatilis mg/L LC50 static
Boron	-	-

Persistence and degradability

Not readily biodegradable. The welding rods consist of elements that cannot degrade any further in the environment.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Nickel 7440-02-0	7440-02-0	-
Chromium 7440-47-3	7440-47-3	-
Silicon 7440-21-3	7440-21-3	-
Iron 7439-89-6	7439-89-6	-
Boron 7440-42-8	7440-42-8	-

Mobility in soil	Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.
Other adverse effects	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment In massive form, welding rods present no hazards to the aquatic environment. 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	Can be reclaimed. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures. Discard container or liner in accordance with federal, state, and local regulations. Residue from welding consumables and processes could degrade and accumulate in soils and groundwater.
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
Nickel	7440-02-0	-	-	-
Chromium	7440-47-3	-	-	-
Silicon	7440-21-3	-	-	-
Iron	7439-89-6	-	-	-
Boron	7440-42-8	-	-	-

Special Precautions Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Nickel	7440-02-0	X	X	X
Chromium	7440-47-3	X	X	X
Silicon	7440-21-3	X	X	X
Iron	7439-89-6	-	-	-
Boron	7440-42-8	-	X	-

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

Chemical name	CAS-No	California Prop. 65
Nickel	7440-02-0	Carcinogen
Chromium	7440-47-3	Carcinogen, Birth defects, reproductive harm
Silicon	7440-21-3	-
Iron	7439-89-6	-
Boron	7440-42-8	-

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
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 %
Silicon	7440-21-3	-	-
Iron	7439-89-6	-	-
Boron	7440-42-8	-	-

**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/NDL) or are exempt.

Chemical name	DSL/NDL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Nickel	X	X	-
Chromium	X	X	-
Silicon	X	X	-
Iron	X	X	-
Boron	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

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Prepared by Regulatory Affairs

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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 Organization)
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