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Revision Number 2

1. IDENTIFICATION

Product identification

Product identifier	Cronatron™ 23 Copper and Steel Flux Coated Brazing Rod
Other means of identification	CW1002
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

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(800) 323-5922

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

Website <https://www.lawsonproducts.com>

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.

Reproductive toxicity	Category 1B
Hazardous to the aquatic environment, long-term hazard	Category 1

Symbol



Signal word DANGER

Hazard statements
H360 - May damage fertility or the unborn child
H410 - Very toxic 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 P273 - Avoid release to the environment P280 - Wear protective gloves/protective clothing and eye/face protection
Response	
General	P308 + P313 - IF exposed or concerned: Get medical advice/attention
Spill	P391 - Collect spillage
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 %
Copper	7440-50-8	56-65
Zinc	7440-66-6	40-50
Boric Acid	10043-35-3	1-11
Borax Glass	1303-96-4	2-8
Tin	7440-31-5	1-11
Iron	7439-89-6	0.2-10

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation	Remove to fresh air immediately or administer oxygen. Get medical attention immediately.
Ingestion	Rinse mouth. Get medical attention immediately.
Skin contact	Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
Eye contact	Flush with plenty of water for at least 15 minutes. Get medical attention.
Most important symptoms (acute)	Not available.
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	Water spray. Alcohol resistant foam. Dry chemical. Carbon dioxide (CO ₂). Use the extinguishing media recommended for the burning material and fire situation.
Unsuitable extinguishing media	Do not use water on molten metal. Large fires may be flooded with water from a safe distance.
Specific hazards	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Hazardous Thermal Decomposition Products: Iron Oxide. Oxides of carbon. Tin oxides. Copper oxides. Zinc oxide. Oxides of boron. Sodium oxide.
Special protective equipment for fire-fighters	Firefighters should wear NIOSH/MSHA approved (or equivalent) self-contained pressure-demand breathing apparatus and full protective clothing.

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.
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. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Dispose contaminated material as waste according to section 13. For water spill: Sodium Tetraborate Pentahydrate will cause localized contamination of surrounding waters based on the quantity dissolved in these waters. At high concentrations, some damage to local vegetation, fish, and other aquatic life may be expected. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

7. HANDLING AND STORAGE

Precautions for safe handling	Keep container tightly closed and sealed until ready for use. Store in a cool, dry, and well-ventilated place. Ensure good ventilation or exhaustion at the workplace. Open and handle receptacle with care.
Conditions for safe storage, including any incompatibilities	Store away from oxidizers. Keep container tightly closed and sealed until ready for use. Keep in a dry, cool and well-ventilated place. Store at room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Copper	0.1 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	1 mg/m ³ TWA 0.1 mg/m ³ TWA 1 mg/m ³ TWA
Zinc	-	-	-
Boric Acid	-	6 mg/m ³ STEL 2 mg/m ³ TWA	-
Borax Glass	-	6 mg/m ³ STEL 2 mg/m ³ TWA	5 mg/m ³ TWA 1 mg/m ³ TWA
Tin	2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA
Iron	-	-	-

Appropriate engineering controls	The usual precautionary measures for handling chemicals should be followed. Keep away from food, beverages, and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of workday. Store protective clothing separately. Maintain an ergonomically appropriate working environment. Wear protective equipment.
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Keep unprotected persons away. Avoid creating dust. Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits.

**Individual protection measures,
such as personal protective
equipment**

Eye protection

Welder's helmet or face shield with color absorbing lenses. Shield and filter to provide protection from harmful UV radiation, infrared and molten metal approved to standard EN379. Filter shade to be a minimum of shade 9.

Skin and body protection

Wear impervious gloves to prevent contact with the skin. Heat-resistant protective clothing. Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Clothing should be selected to suit the level, duration and purpose of the welding activity.

Respiratory protection

Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits.

Hygiene measures

Keep away from food, drink and animal feeding stuffs. Wash hands after handling the product. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of workday. Store protective clothing separately. Maintain an ergonomically appropriate working environment. Keep unnecessary and unprotected personnel from entering the area. Wear protective equipment.

**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
Copper	0.2 mg/m ³ TWA 1 mg/m ³ TWA	1mg/m ³ TW A 0.2mg/m ³ T WA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.2 mg/m ³ TWA 1 mg/m ³ TWA	0.6 mg/m ³ STEL 3 mg/m ³ STEL 0.2 mg/m ³ TWA 1 mg/m ³ TWA
Zinc	-	-	-	-	-	-	-	-	-	-
Boric Acid	-	6mg/m ³ STE L 2mg/m ³ TW A	2 mg/m ³ TWA 6 mg/m ³ STEL	-	6 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA	-	6 mg/m ³ STEL 2 mg/m ³ TWA
Borax Glass	3 ppm STEL 1 mg/m ³ TWA	6mg/m ³ STE L 2mg/m ³ TW A	2 mg/m ³ TWA 6 mg/m ³ STEL	5 mg/m ³ TWA 1 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA 2 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA	6 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA 2 mg/m ³ TWA	5 mg/m ³ TWA 1 mg/m ³ TWA TWA	6 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA
Tin	2 mg/m ³ TWA	2mg/m ³ TW A	2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	2 mg/m ³ TWA 2 mg/m ³ TWA	4 mg/m ³ STEL 2 mg/m ³ TWA 2 mg/m ³ TWA
Iron	-	-	-	-	-	-	-	-	-	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state

Solid

Color	Blue
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Melting point/range °C	850-1100 °C
Melting point/range °F	1560 - 2000 °F
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not available
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 applicable
Relative density	6 - 9
Solubility	Insoluble in water
Partition coefficient (n-octanol/water)	No data available
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. This product loses water when heated.
Chemical stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Contact with chemical substances like acids or strong bases could cause generation of gas.
Conditions to avoid	Not applicable.
Incompatible materials	Oxidizing agents. Reaction with strong reducing agents such as metal hydrides, acetic anhydride or alkali metals will generate hydrogen gas which could create an explosive hazard.

Hazardous decomposition products boron oxide fumes.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Dermal. Inhalation. Ingestion.

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. Tin exposure may cause skin irritation. Eye contact may cause mechanical irritation. Inhalation of tin dust may cause respiratory tract and mucous membrane tract irritation due to mechanical action. It is poorly absorbed from the digestive tract. It can cause gastrointestinal tract disturbance which may be irritant or astringent on the stomach. Symptoms of systematic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis and coma. Signs and symptoms of zinc exposure are central nervous system depression, cough, chest pain and difficulty breathing. Exposure to high airborne concentrations can cause anesthetic effects. Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes. Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams.

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

Overexposure to brazing and soldering fumes may affect pulmonary function. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defect and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has led to hemolytic anemia and accelerates arteriosclerosis, damage to the lungs, vomiting, diarrhea, abdominal pain and blood disorders. Copper poisoning has led to haemolytic anemia and accelerates arteriosclerosis, damage to the lungs, vomiting, diarrhea, abdominal pain and blood disorders. Excessive inhalation of zinc oxide fumes may produce symptoms known as "zinc shakes" which are flu-like and usually cease when the individual is removed from the source. Prolonged or repeated exposure can cause vomiting, diarrhea, lung irritation.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Copper	-	-	-
Zinc	-	-	= 630 mg/kg (Rat)
Boric Acid	> 0.16 mg/L (Rat) 4 h >= 2120 mg/m ³ (Rat) 4 h	> 2000 mg/kg (Rabbit) >= 2000 mg/kg (Rabbit)	= 2660 mg/kg (Rat) = 3765 mg/kg (Rat)
Borax Glass	> 2 mg/m ³ (Rat) 4 h	> 10000 mg/kg (Rabbit) > 2000 mg/kg (Rabbit)	= 2660 mg/kg (Rat) = 3493 mg/kg (Rat)
Tin	-	-	= 700 mg/kg (Rat)
Iron	-	-	= 30 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
Copper	-	-	-	-
Zinc	-	-	-	-
Boric Acid	A4	Group 2A	Listed	-
Borax Glass	A4	Group 2A	Listed	-
Tin	-	-	-	-
Iron	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Copper	-	-	-	-	-	-
Zinc	-	-	-	-	-	-
Boric Acid	-	-	ACGIH A4	-	ACGIH A4	-
Borax Glass	-	-	ACGIH A4	-	ACGIH A4	-
Tin	-	-	-	-	-	-
Iron	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish
Copper	0.0426 - 0.0535: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.031 - 0.054: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	0.0068 - 0.0156: 96 h Pimephales promelas mg/L LC50 0.2: 96 h Pimephales promelas mg/L LC50 flow-through 0.3: 96 h Pimephales promelas mg/L LC50 static 0.3: 96 h Cyprinus carpio mg/L LC50 semi-static 0.052: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.112: 96 h Poecilia reticulata mg/L LC50 flow-through 1.25: 96 h Lepomis macrochirus mg/L LC50 static 0.8: 96 h Cyprinus carpio mg/L LC50 static
Zinc	0.11 - 0.271: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 0.09 - 0.125: 72 h Pseudokirchneriella subcapitata mg/L EC50 static	2.16 - 3.05: 96 h Pimephales promelas mg/L LC50 flow-through 0.211 - 0.269: 96 h Pimephales promelas mg/L LC50 semi-static 30: 96 h Cyprinus carpio mg/L LC50 0.24: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 2.66: 96 h Pimephales promelas mg/L LC50 static 3.5: 96 h Lepomis macrochirus mg/L LC50 static 0.59: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 0.41: 96 h Oncorhynchus mykiss mg/L LC50 static 0.45: 96 h Cyprinus carpio mg/L LC50 semi-static 7.8: 96 h Cyprinus carpio mg/L LC50 static
Boric Acid	-	1020: 72 h Carassius auratus mg/L LC50 flow-through
Borax Glass	2.6 - 21.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 158: 96 h Desmodium subspicatus mg/L EC50	340: 96 h Limanda limanda mg/L LC50
Tin	-	-
Iron	-	13.6: 96 h Morone saxatilis mg/L LC50 static

Persistence and degradability The welding rods consist of elements that cannot degrade any further in the environment.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Copper 7440-50-8	7440-50-8	-
Zinc 7440-66-6	7440-66-6	-
Boric Acid 10043-35-3	10043-35-3	-0.757 25 °C
Borax Glass 1303-96-4	1303-96-4	-
Tin 7440-31-5	7440-31-5	-
Iron 7439-89-6	7439-89-6	-

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 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. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

13. DISPOSAL CONSIDERATIONS

Disposal information Collect, transport, store or dispose in accordance with local, state, provincial and federal regulations. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste.

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
Copper	7440-50-8	X	-	X
Zinc	7440-66-6	-	-	-

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Boric Acid	10043-35-3	-	-	-
Borax Glass	1303-96-4	-	-	-
Tin	7440-31-5	-	-	-
Iron	7439-89-6	-	-	-

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
Copper	7440-50-8	X	X	X
Zinc	7440-66-6	X	X	X
Boric Acid	10043-35-3	-	X	-
Borax Glass	1303-96-4	X	X	X
Tin	7440-31-5	X	X	X
Iron	7439-89-6	-	-	-

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Copper	7440-50-8	-
Zinc	7440-66-6	-
Boric Acid	10043-35-3	-
Borax Glass	1303-96-4	-
Tin	7440-31-5	-
Iron	7439-89-6	-

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Copper	7440-50-8	5000 lb 2270 kg	1.0 %
Zinc	7440-66-6	454 kg 1000 lb	1.0 %
Boric Acid	10043-35-3	-	-

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Borax Glass	1303-96-4	-	-
Tin	7440-31-5	-	-
Iron	7439-89-6	-	-

**US EPA SARA 311/312
hazardous categorization**

Not applicable

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Copper	X	X	-
Zinc	X	X	X
Boric Acid	X	X	-
Borax Glass	X	X	-
Tin	X	X	-
Iron	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

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

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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