

# Safety Data Sheet: CAST WELD HPM ELECTRODE

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## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name** CAST WELD HPM ELECTRODE

**Recommended use** Welding

**Information on Manufacturer**

X-ERGON by Partsmaster, Div of NCH Corp.

P.O. Box 655326

Dallas, TX 75265-5326

**Product Code** 13030001

**Chemical nature** Inorganic solid blend

**Emergency Telephone Number**

CHEMTREC® 800-424-9300

## 2. HAZARD IDENTIFICATION

**Color** silver

**Physical State** Solid

**Odor** Odorless

### GHS

#### Classification

##### Physical Hazards

None

##### Health Hazard

Acute Oral Toxicity

Skin Corrosion/Irritation

Skin Sensitization

Carcinogenicity

Specific target organ systemic toxicity (repeated exposure)

Acute Aquatic Toxicity

Chronic Aquatic Toxicity

Category 5

Category 3

Category 1

Category 2

Category 1

Category 1

Category 1

##### Other hazards

None

#### Labeling

##### Signal Word

**DANGER**



##### Hazard Statements

H303 - May be harmful if swallowed

H316 - Causes mild skin irritation

H317 - May cause an allergic skin reaction

H351 - Suspected of causing cancer

H372 - Causes damage to organs through prolonged or repeated exposure

H410 - Very toxic to aquatic life with long lasting effects

##### Precautionary Statements

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P260 - Do not breathe dust or fume

P264 - Wash face, hands and any exposed skin thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product

P281 - Use personal protective equipment as required

P280 - Wear protective gloves, protective clothing and eye protection.

P363 - Wash contaminated clothing before reuse

P272 - Contaminated work clothing should not be allowed out of the workplace

P302+ P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs, get medical attention

P308 + P313 - IF exposed or concerned: Get medical attention/advice

P405 - Store locked up

P273 - Avoid release to the environment

P501 - Dispose of contents and container to an approved waste disposal plant.

25 % of the mixture consists of ingredient(s) of unknown toxicity

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Nickel	7440-02-0	60-100
Graphite	7440-44-0	1-5
Copper	7440-50-8	1-5
Barium Fluoride	7787-32-8	1-5
Calcium carbonate	471-34-1	1-5

Barium carbonate	513-77-9	1-5
Iron	7439-89-6	1-5
Manganese	7439-96-5	1-5

**4. FIRST AID MEASURES**

<b>General advice</b>	Do not breathe dust or fume. Do not take internally. Be sure to wash hands after use prior to eating or handling food or smoking. Wash thoroughly after handling. Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
<b>Inhalation</b>	Remove person to fresh air. If signs/symptoms continue, get medical attention.
<b>Ingestion</b>	If swallowed, do not induce vomiting - seek medical advice.
<b>Notes to physician</b>	Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

<b>Flash Point</b>	The product is not flammable	<b>Method</b>	Not applicable
<b>Upper</b>	No data available	<b>Lower</b>	No data available
<b>Suitable Extinguishing Media</b>			
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.			
<b>Specific hazards arising from the chemical</b>			
Arcs and sparks can ignite combustibles and flammable products. See American National Standard Z49.1; Safety in Welding and Cutting published by The American Welding Society .			
<b>Protective Equipment and Precautions for Firefighters</b>			
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
<b>NFPA</b>	<b>Health 2</b>	<b>Flammability 0</b>	<b>Instability 0</b>
<b>HMIS</b>	<b>Health 2</b>	<b>Flammability 0</b>	<b>Instability 0</b>

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Use personal protective equipment. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system.
<b>Methods for Containment</b>	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
<b>Methods for Cleaning Up</b>	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
<b>Neutralizing Agent</b>	Not applicable.

**7. HANDLING AND STORAGE**

<b>Handling</b>	Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes and clothing. Keep away from clothing and other combustible materials.			
<b>Storage</b>	Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.			
<b>Storage Temperature</b>	<b>Minimum</b>	No information available	<b>Maximum</b>	No information available
<b>Storage Conditions</b>	<b>Indoor</b>	X	<b>Outdoor</b>	<b>Heated</b> <b>Refrigerated</b>

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH
Nickel	TWA: 1.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup>
Graphite	No data available	No data available	No data available
Copper	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	IDLH: 100 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>
Barium Fluoride	TWA: 2.5 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup>
Calcium carbonate	No data available	No data available	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>
Barium carbonate	No data available	No data available	No data available

Iron	No data available	No data available	No data available
Manganese	TWA: 0.2 mg/m <sup>3</sup>	Ceiling: 5 mg/m <sup>3</sup>	IDLH: 500 mg/m <sup>3</sup> STEL 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

<b>Engineering Measures</b>	Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases below the TLV's in the worker's breathing zone and in the general area. Train the worker to keep his head out of the fumes .
<b>Personal Protective Equipment</b>	
<b>Eye/Face Protection</b>	Wear a helmet or use face shield with filter lens of appropriate shade number (SEE ANSI/ASCZ49.1) provide protective screen and flash goggles, if necessary, to shield others. As a rule of thumb, start a shade that is too dark to see the weld zone. Then go next lighter shade which gives sufficient view of the weld zone .
<b>Skin Protection</b>	Welder's leather gloves, Wear fire/flamm resistant/retardant clothing, Wear suitable protective clothing, Impervious gloves.
<b>Respiratory Protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
<b>General Hygiene Considerations</b>	Do not eat, drink or smoke when using this product. Wear head and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At minimum, this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hat, 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 . Remove and wash contaminated clothing before re-use.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Solid	<b>Viscosity</b>	Not applicable
<b>Color</b>	silver	<b>Odor</b>	Odorless
<b>Odor Threshold</b>	Not applicable	<b>Appearance</b>	Metallic
<b>pH</b>	Not applicable	<b>Specific Gravity</b>	7
<b>Evaporation Rate</b>	Not applicable	<b>Percent Volatile (Volume)</b>	No information available
<b>VOC Content (%)</b>	No information available	<b>Vapor Pressure</b>	Not applicable
<b>Vapor Density</b>	Not applicable	<b>Solubility</b>	Insoluble
<b>n-Octanol/Water Partition</b>	No data available	<b>Melting Point/Range</b>	2800 - 3200 °F / 1538 - 1760 °C
<b>Decomposition Temperature</b>	No data available	<b>Boiling Point/Range</b>	5500 °F / 3038 °C
<b>Flammability (solid, gas)</b>	No data available	<b>Method</b>	Not applicable
<b>Flash Point</b>	The product is not flammable		
<b>Autoignition Temperature</b>	No information available.		
<b>Upper</b>	No data available		
<b>Lower</b>	No data available		

**10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Exposure to air or moisture over prolonged periods
<b>Incompatible Products</b>	Incompatible with oxidizing agents, Strong acids.
<b>Hazardous Decomposition Products</b>	Fumes and gasses produced by welding, brazing and similar processes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, the procedures and the filler metal being used. Other conditions which also influence the composition and quantity of fumes and gases to which the worker may be exposed include: coatings on the metal being welded, the number of welders and the volume of the work space, the quality and amount of ventilation used, the position of the welder's head in relation to the fume plume, as well as the presence of contaminants in the atmosphere when the filler metal is consumed. The fume and gas decomposition products generated are different in percent and form the product ingredients listed in Section III. The products formed in normal operation include those originating from the volatilization, reaction and oxidation of the filler metal, the metal being welded, the coatings, etc. as noted above. One recommended way to determine the composition and quality of fumes and gases to which workers are exposed is to take an air sample inside the welders helmet if worn or in the workers breathing zone. See ANSI/AWS F1.1 "Method For Sampling Airborne Particles Generated By Welding And Allied Processes" available from the American Welding Society, P.O. Box 35140, Miami, FL 33135
<b>Possibility of Hazardous Reactions</b>	None under normal processing

11. TOXICOLOGICAL INFORMATION

Product Information

The following values are calculated based on chapter 3.1 of the GHS document (Rev. 3, 2009):

Oral LD50 No information available  
 Dermal LD50 No information available  
 Inhalation LC50  
     Gas No information available  
     Mist No information available  
     Vapor No information available

Principle Route of Exposure Inhalation  
 Primary Routes of Entry Inhalation, Ingestion.

Acute Effects

Eyes Causes eye irritation.  
 Skin May cause allergic skin reaction.  
 Inhalation Welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of nose, throat, or eyes. Fumes can aggravate asthma, bronchial conditions, or allergies. Individuals with allergies or impaired respiratory function may have symptoms worsen by exposure to welding fumes . Excessive inhalation of iron oxides fumes or dust can lead to irritation of the respiratory tract .

Ingestion May be harmful if swallowed. Harmful if swallowed.

Chronic Toxicity

May cause sensitization by skin contact. Repetitive exposure to nickel oxides may lead to lung fibrosis or pneumoconiosis. Soreness and itchiness of the nose and changes in skin color and/or appearance may also result. Nickel compounds are on the IARC list as posing a carcinogenic risk to humans. OSHA (29 CFR 1910.120) lists nickel as possible carcinogen . Nickel may cause respiratory sensitization in susceptible individuals.

Target Organ Effects

Respiratory system, Central nervous system, Kidney, Blood, Liver.

Aggravated Medical Conditions

Skin disorders

Component Information

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Nickel	> 9000 mg/kg ( Rat )	no data available	no data available	no data available	no data available
Graphite	> 10000 mg/kg ( Rat )	no data available	no data available	no data available	no data available
Copper	no data available	no data available	no data available	no data available	no data available
Barium Fluoride	= 250 mg/kg ( Rat )	no data available	no data available	no data available	no data available
Calcium carbonate	= 6450 mg/kg ( Rat )	no data available	no data available	no data available	no data available
Barium carbonate	= 418 mg/kg ( Rat )	no data available	no data available	no data available	no data available
Iron	= 984 mg/kg ( Rat )	no data available	no data available	no data available	no data available
Manganese	= 9 g/kg ( Rat )	no data available	no data available	no data available	no data available

Chronic Toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Nickel	no data available	no data available	no data available	no data available	nasal cavities, lungs, skin (lung and nasal cancer) lungs, skin, nasal cavities (lung and nasal cancer)
Graphite	no data available	no data available	no data available	no data available	respiratory system,CVS
Copper	no data available	no data available	no data available	no data available	eyes,kidneys,liver, respiratory system,skin
Barium Fluoride	no data available	no data available	no data available	no data available	no data available
Calcium carbonate	no data available	no data available	no data available	no data available	eyes,respiratory system,skin
Barium carbonate	no data available	no data available	no data available	no data available	no data available
Iron	no data available	no data available	no data available	no data available	no data available
Manganese	no data available	no data available	no data available	no data available	CNS,respiratory system,blood,kidneys

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Other
Nickel	not applicable	Group 1 Group 2B	Known Reasonably Anticipated	X	not applicable
Graphite	not applicable	not applicable	not applicable	not applicable	not applicable
Copper	not applicable	not applicable	not applicable	not applicable	not applicable
Barium Fluoride	not applicable	not applicable	not applicable	not applicable	not applicable
Calcium carbonate	not applicable	not applicable	not applicable	not applicable	not applicable
Barium carbonate	not applicable	not applicable	not applicable	not applicable	not applicable
Iron	not applicable	not applicable	not applicable	not applicable	not applicable
Manganese	not applicable	not applicable	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information No information available.  
 Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
Nickel	EC50 = 0.18 mg/L Pseudokirchneriella subcapitata 72 h EC50 0.174 - 0.311 mg/L Pseudokirchneriella subcapitata 96 h	LC50 > 100 mg/L Brachydanio rerio 96 h LC50 = 1.3 mg/L Cyprinus carpio 96 h LC50 = 10.4 mg/L Cyprinus carpio 96 h	no data available	EC50> 100 mg/L 48 h EC50= 1 mg/L 48 h	N/A
Graphite	no data available	no data available	no data available	no data available	N/A
Copper	EC50 0.0426 - 0.0535 mg/L Pseudokirchneriella subcapitata 72 h EC50 0.031 - 0.054 mg/L Pseudokirchneriella subcapitata 96 h	LC50 0.0068 - 0.0156 mg/L Pimephales promelas 96 h LC50 < 0.3 mg/L Pimephales promelas 96 h LC50 = 0.2 mg/L Pimephales promelas 96 h LC50 = 0.052 mg/L Oncorhynchus mykiss 96 h LC50 = 1.25 mg/L Lepomis macrochirus 96 h LC50 = 0.3 mg/L Cyprinus carpio 96 h LC50 = 0.8 mg/L Cyprinus carpio 96 h LC50 = 0.112 mg/L Poecilia reticulata 96 h	no data available	EC50= 0.03 mg/L 48 h	N/A
Barium Fluoride	no data available	no data available	no data available	no data available	N/A
Calcium carbonate	no data available	no data available	no data available	no data available	N/A
Barium carbonate	no data available	LC50 = 6950 mg/L Gambusia affinis 96 h	no data available	no data available	N/A
Iron	no data available	LC50 = 13.6 mg/L Morone saxatilis 96 h LC50 = 0.56 mg/L Cyprinus carpio 96 h	no data available	no data available	N/A
Manganese	no data available	no data available	no data available	no data available	N/A

Persistence and Degradability No information available.  
 Bioaccumulation No information available.  
 Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal Dispose of in accordance with local regulations.  
 Container Disposal Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT Not regulated  
 TDG Not regulated  
 ICAO Not regulated  
 IATA Not regulated  
 IMDG/IMO Not regulated

15. REGULATORY INFORMATION

Inventories  
 TSCA Complies  
 DSL Complies  
 U.S. Federal Regulations

SARA 313  
 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals

which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Nickel	7440-02-0	60-100	0.1
Copper	7440-50-8	1-5	1.0
Barium Fluoride	7787-32-8	1-5	1.0
Barium carbonate	513-77-9	1-5	1.0
Manganese	7439-96-5	1-5	1.0

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release of Pressure Hazard	Reactive Hazard
Yes	Yes	No	No	No

**CERCLA**

Component	Hazardous Substances RQs	CERCLA EHS RQs
Nickel	100 lb	Not applicable
Graphite	Not applicable	Not applicable
Copper	5000 lb	Not applicable
Barium Fluoride	Not applicable	Not applicable
Calcium carbonate	Not applicable	Not applicable
Barium carbonate	Not applicable	Not applicable
Iron	Not applicable	Not applicable
Manganese	Not applicable	Not applicable

**U.S. State Regulations**

**California Proposition 65** This product contains the following Proposition 65 chemicals

Component	CAS-No	California Prop. 65
Nickel	7440-02-0	carcinogen

**16. OTHER INFORMATION**

Prepared By Christopher Drogin  
 Supersedes Date 01/15/2010  
 Issuing Date 06/04/2013  
 Reason for Revision No information available.  
 Glossary No information available.  
 List of References. No information available.

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