

Safety Data Sheet: VERSA-BRAZE

Supersedes Date 05/13/2011

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name VERSA-BRAZE

Recommended use Brazing

Information on Manufacturer

X-ERGON by Partsmaster, Div of NCH Corp.

P.O. Box 655326

Dallas, TX 75265-5326

Product Code 20540000

Chemical nature Inorganic solid blend

Emergency Telephone Number

CHEMTREC® 800-424-9300

2. HAZARD IDENTIFICATION

Color Green

Physical State Solid

Odor Odorless

GHS

Classification

Physical Hazards

None

Health Hazard

Acute Oral Toxicity

Skin Corrosion/Irritation

Reproductive Toxicity

Other hazards

None

Category 3

Category 3

Category 1B

Labeling

Signal Word

DANGER



Hazard Statements

H301 - Toxic if swallowed

H316 - Causes mild skin irritation

H360 - May damage fertility or the unborn child

Precautionary Statements

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

P281 - Use personal protective equipment as required

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

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

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

P301+ P310 - IF SWALLOWED: Immediately call a physician

P330 - Rinse mouth

P332 + P313 - If skin irritation occurs, get medical attention.

P273 - Avoid release to the environment

P405 - Store locked up

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

51 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Copper	7440-50-8	30-60
Zinc	7440-66-6	30-60
Boric acid	10043-35-3	1-9
Sodium borate decahydrate	1303-96-4	.1-1.5
Tin	7440-31-5	1-5
Iron	7439-89-6	.5-1.5
Manganese	7439-96-5	.5-1.5
Silicon	7440-21-3	.5-1.5

4. FIRST AID MEASURES

General advice	Do not breathe dust or fume. If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
Skin Contact	In case of contact, immediately flush skin with soap and plenty of water. If skin irritation persists, call a physician.
Inhalation	Remove person to fresh air. If signs/symptoms continue, get medical attention.
Ingestion	If swallowed, do not induce vomiting - seek medical advice. Rinse mouth.
Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	The product is not flammable	Method	Not applicable
Upper	No data available	Lower	No data available

Suitable Extinguishing Media

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

Specific hazards arising from the chemical

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 .

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	Health 2	Flammability 0	Instability 0
HMIS	Health 2	Flammability 0	Instability 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear appropriate protective clothing. Avoid creating dusty conditions. Transfer solid into a properly labeled container for re-use or disposal. If necessary, wash area with water and pick up wash water for disposal.
Environmental Precautions	Prevent product from contaminating soil or from entering sewage, drainage systems, and bodies of water .
Methods for Containment	Pick up and arrange disposal without creating dust.
Methods for Cleaning Up	Shovel or vacuum any spilled material into a suitable container. Alloy wastes are normally collected to recover metal value .
Neutralizing Agent	Not applicable.

7. HANDLING AND STORAGE

Handling	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product.			
Storage	Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.			
Storage Temperature	Minimum	No information available	Maximum	No information available
Storage Conditions	Indoor	X	Outdoor	Heated Refrigerated

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
Copper	TWA: 0.2 mg/m ³	TWA: 0.1 mg/m ³ TWA: 1 mg/m ³	IDLH: 100 mg/m ³ TWA: 1 mg/m ³ TWA: 0.1 mg/m ³
Zinc	No data available	No data available	No data available
Boric acid	TWA: 2 mg/m ³ STEL: 6 mg/m ³	No data available	No data available
Sodium borate decahydrate	TWA: 2 mg/m ³ STEL: 6 mg/m ³	No data available	TWA: 5 mg/m ³
Tin	TWA: 2 mg/m ³	TWA: 2 mg/m ³	IDLH: 100 mg/m ³ TWA: 2 mg/m ³
Iron	No data available	No data available	No data available
Manganese	TWA: 0.02 mg/m ³ TWA: 0.1 mg/m ³	Ceiling: 5 mg/m ³	IDLH: 500 mg/m ³ STEL 3 mg/m ³ TWA: 1 mg/m ³
Silicon	No data available	TWA: 15 mg/m ³ TWA: 5 mg/m ³	TWA: 10 mg/m ³ TWA: 5 mg/m ³

Engineering Measures	Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases below the
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	TLV's in the worker's breathing zone and in the general area. Train the worker to keep his head out of the fumes .
Personal Protective Equipment	
Eye/Face Protection	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 .
Skin Protection	Wear fire/ flame resistant/retardant clothing, Welder's leather gloves.
Respiratory Protection	Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gasses below the TLV's in the workers' breathing zone and the general area. Train the worker to keep his head out of the fumes. Use MSHA/NIOSH approved or equivalent fume respirator or air supplied respirator when welding in a confined space or when local exhaust or ventilation does not keep exposure below TLV.
General Hygiene Considerations	Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes and clothing. 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 .

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid	Viscosity	Not applicable
Color	Green	Odor	Odorless
Odor Threshold	Not applicable	Appearance	Textured black paste
pH	Not applicable	Specific Gravity	8.5
Evaporation Rate	Not applicable	Percent Volatile (Volume)	No information available
VOC Content (%)	No information available	Vapor Pressure	Not applicable
Vapor Density	Not applicable	Solubility	Insoluble
n-Octanol/Water Partition	No data available	Melting Point/Range	871 - 1038 °F / 466 - 1900 °C
Decomposition Temperature	No data available	Boiling Point/Range	No data available 4703 °F / 2595 °C
Flammability (solid, gas)	No data available	Method	Not applicable
Flash Point	The product is not flammable		
Autoignition Temperature	No information available.		
Upper No data available	Lower No data available		

10. STABILITY AND REACTIVITY

Chemical Stability	Hazardous polymerization does not occur. Stable under normal conditions.
Conditions to Avoid	Exposure to air or moisture over prolonged periods
Incompatible Products	Incompatible with oxidizing agents, Strong acids.
Hazardous Decomposition Products	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
Possibility of Hazardous Reactions	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

Acute Effects

Eyes Causes eye irritation. Welding arc may damage eyes .

Skin May cause sensitization by skin contact.

Inhalation Excessive inhalation of iron oxides fumes or dust can lead to irritation of the respiratory tract . Inhalation may cause central nervous system effects. 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 . Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Ingestion**Chronic Toxicity**

May cause sensitization by skin contact. Fume may cause Wilson's disease in some individuals with a rare inherited metabolic disorder characterized by retention of copper in the liver, brain, kidney and corneas. Wilson's disease, if untreated can result in liver failure . Inhalation of manganese fumes may affect the central nervous system, may cause spastic gait, drowsiness, paralysis and other neurological problems with symptoms including weakness and tremors resembling Parkinson's disease. Behavioral changes and changes in handwriting may also appear . The TLV for Manganese (0.02 mg/m³) will be reached before the general limit for welding fumes of 5mg/m³ is reached. Monitor fumes for manganese levels. Long term overexposure to iron fumes may lead to siderosis (iron deposits in the lung) and is believed by investigators to affect pulmonary function. Lungs will clear in time when exposure to iron and its components cease .

Target Organ Effects

Eyes, Skin, Respiratory system, Central nervous system, Kidney, Liver.

Aggravated Medical Conditions

Skin disorders, Respiratory system, Central nervous system, Kidney disorders, Liver disorders.

Component Information**Acute Toxicity**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Copper	no data available	no data available	no data available	no data available	no data available
Zinc	no data available	no data available	no data available	no data available	no data available
Boric acid	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h	no data available	no data available
Sodium borate decahydrate	no data available	no data available	no data available	no data available	no data available
Tin	no data available	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	no data available	no data available	no data available	no data available	no data available
Silicon	no data available	no data available	no data available	no data available	no data available

Chronic Toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Copper	no data available	no data available	no data available	no data available	eyes,kidneys,liver,respiratory system,skin
Zinc	no data available	no data available	no data available	no data available	no data available
Boric acid	no data available	no data available	no data available	no data available	no data available
Sodium borate decahydrate	no data available	no data available	no data available	X	eyes, respiratory system, skin, testes
Tin	no data available	no data available	no data available	no data available	eyes,respiratory system,skin
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
Silicon	no data available	no data available	no data available	no data available	eyes,respiratory system,skin

Carcinogenicity

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

Component	ACGIH	IARC	NTP	OSHA	Other
Copper	not applicable	not applicable	not applicable	not applicable	not applicable
Zinc	not applicable	not applicable	not applicable	not applicable	not applicable
Boric acid	not applicable	Group 2A	not applicable	X	not applicable
Sodium borate decahydrate	not applicable	Group 2A	not applicable	X	not applicable
Tin	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
Silicon	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
Copper	EC50 0.0426 - 0.0535 mg/L <i>Pseudokirchneriella subcapitata</i> 72 h EC50 0.031 - 0.054 mg/L <i>Pseudokirchneriella subcapitata</i> 96 h	LC50 0.0068 - 0.0156 mg/L <i>Pimephales promelas</i> 96 h LC50 < 0.3 mg/L <i>Pimephales promelas</i> 96 h LC50 = 0.2 mg/L <i>Pimephales promelas</i> 96 h LC50 = 0.052 mg/L <i>Oncorhynchus mykiss</i> 96 h LC50 = 1.25 mg/L <i>Lepomis macrochirus</i> 96 h LC50 = 0.3 mg/L <i>Cyprinus carpio</i> 96 h LC50 = 0.8 mg/L <i>Cyprinus carpio</i> 96 h LC50 = 0.112 mg/L <i>Poecilia reticulata</i> 96 h	no data available	EC50= 0.03 mg/L 48 h	N/A
Zinc	EC50 0.11 - 0.271 mg/L <i>Pseudokirchneriella subcapitata</i> 96 h EC50 0.09 - 0.125 mg/L <i>Pseudokirchneriella subcapitata</i> 72 h	LC50 2.16 - 3.05 mg/L <i>Pimephales promelas</i> 96 h LC50 0.211 - 0.269 mg/L <i>Pimephales promelas</i> 96 h LC50 = 2.66 mg/L <i>Pimephales promelas</i> 96 h LC50 = 30 mg/L <i>Cyprinus carpio</i> 96 h LC50 = 0.45 mg/L <i>Cyprinus carpio</i> 96 h LC50 = 7.8 mg/L <i>Cyprinus carpio</i> 96 h LC50 = 3.5 mg/L <i>Lepomis macrochirus</i> 96 h LC50 = 0.24 mg/L <i>Oncorhynchus mykiss</i> 96 h LC50 = 0.59 mg/L <i>Oncorhynchus mykiss</i> 96 h LC50 = 0.41 mg/L <i>Oncorhynchus mykiss</i> 96 h	no data available	EC50 0.139 - 0.908 mg/L 48 h	N/A
Boric acid	no data available	LC50 = 1020 mg/L <i>Carassius auratus</i> 72 h	no data available	EC50 115 - 153 mg/L 48 h	-0.757
Sodium borate decahydrate	no data available	no data available	no data available	no data available	N/A
Tin	no data available	no data available	no data available	no data available	N/A
Iron	no data available	LC50 = 13.6 mg/L <i>Morone saxatilis</i> 96 h LC50 = 0.56 mg/L <i>Cyprinus carpio</i> 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
Silicon	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
Copper	7440-50-8	30-60	1.0
Zinc	7440-66-6	30-60	1.0
Manganese	7439-96-5	.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
Copper	5000 lb	Not applicable
Zinc	1000 lb	Not applicable
Boric acid	Not applicable	Not applicable
Sodium borate decahydrate	Not applicable	Not applicable
Tin	Not applicable	Not applicable
Iron	Not applicable	Not applicable
Manganese	Not applicable	Not applicable
Silicon	Not applicable	Not applicable

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

16. OTHER INFORMATION

Prepared By Christopher Drogin
 Supersedes Date 05/13/2011
 Issuing Date 07/02/2013
 Reason for Revision No information available.
 Glossary No information available.
 List of References. No information available.

X-ERGON by Partsmaster, Div of NCH Corp. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage or disposal of the product. The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.