

Ultraweld Cast Iron Metal

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name. : Ultraweld Cast Iron Metal

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Manufacturing

1.3. Details of the supplier of the safety data sheet

Harger
301 Ziegler Drive
Grayslake, IL 60030
T 847-548-8700 - F 847-548-8755

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Oral)	H302
Acute Tox. 4 (Inhalation)	H332
Eye Irrit. 2A	H319
Aquatic Acute 1	H400
Aquatic Chronic 2	H411

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Warning

Hazard statements (GHS-US) :
H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - If swallowed, call a doctor if you feel unwell
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER/doctor if you feel unwell
P330 - If swallowed, rinse mouth
P337+P313 - If eye irritation persists: Get medical advice/attention
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

Full text of H-phrases: see section 16

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3.2. Mixture

Name	Product identifier	%	GHS-US classification
Copper oxide (CuO)	(CAS No) 1317-38-0	60 - 100	Not classified
Aluminum	(CAS No) 7429-90-5	7 - 13	Not classified
Copper(I) oxide	(CAS No) 1317-39-1	1 - 10	Acute Tox. 4 (Oral), H302 Acute Tox. Not classified (Dermal)
Tin	(CAS No) 7440-31-5	5 - 10	Not classified
Copper	(CAS No) 7440-50-8	1 - 5	Not classified
Calcium silicide	(CAS No) 12737-18-7	0.1 - 3	Not classified
Calcium fluoride (CaF ₂)	(CAS No) 7789-75-5	0.1 - 3	Acute Tox. Not classified (Oral)

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform emergency resuscitation. Keep affected person warm and at rest. Get medical attention.
First-aid measures after skin contact	: In case of contact, wash skin with plenty of soap and water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation develops and persists or recurs, get medical attention.
First-aid measures after eye contact	: In case of contact with dust, immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, get medical attention.
First-aid measures after ingestion	: Ingestion of this product is highly unlikely and no first aid should be needed. If product is ingested and symptoms develop, do not induce vomiting except on advice of competent medical personnel. Get medical attention immediately if product is ingested and symptoms develop.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: Inhalation of dusts generated from this product is likely to irritate the respiratory tract. Repeated exposures to dusts generated from this product may cause irritation of the respiratory tract. Occupational exposure studies with have shown some association with obesity, arterial hypertension, and liver enlargement at copper dust exposure levels ranging from 111 to 434 mg Cu/m ³ . Repeated exposure to dusts may also have effects on the central nervous system (CNS). Epidemiological data has shown some association of repeated exposure to aluminium dust and the development of Alzheimer's disease. Other neurological effects that could develop include impairment of cognitive function and motor dysfunction.
Symptoms/injuries after skin contact	: May cause mechanical irritation of the skin.
Symptoms/injuries after eye contact	: May cause mechanical irritation of the eye.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use special powder foam (Extinguisher Class D) for metal fires if substances react to produce liquid metal. This eliminates the source of oxygen and extinguishes the fire. Class D extinguishing powder or dry sand will effectively retard the spread of the fire.
Unsuitable extinguishing media	: Water.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Copper based welding/joining materials are exothermic mixtures which, when reacted, produce hot molten materials at temperatures in excess of 2200 °C and a localized release of smoke. Hot molten metals are best extinguished with fire extinguisher Class D.
Explosion hazard	: None

5.3. Advice for firefighters

Protection during firefighting	: Firefighters should wear full protective gear.
Special firefighting procedures	: If the packaging materials were to be made combustible before reaching the substances, direct application of water in a heavy continuous stream is recommended before the fire can spread to the substances. Water should be applied from a safe distance with extinguishing hose. If the packaging materials have been burnt through then the immediate and direct application of large quantities of extinguishing powder (Class D) or dry sand will effectively retard the spread of the fire and effectively control it.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Spilled material may produce a dust hazard if not handled correctly. Wear appropriate protective equipment- coveralls, gloves and eye protection. Use non-conductive and non-static cleaning gear. Never smoke when handling exothermic materials.

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6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Recover the product by vacuuming, shovelling or sweeping.
- Methods for cleaning up : Contain and collect spilled materials using sand or other inert materials. Contain spillages. Residue should be cleaned up using a high efficiency particulate (HEPA) filter vacuum or wet clean up. Dispose of waste in accordance with local, state and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Follow all usage instructions when working with this product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a cool, dry area away from heat and direct sunlight. Exothermic materials, i.e. welding or ignition materials which have accidentally been exposed to moisture should not be used. These should be discarded as chemical wastes.

7.3. Specific end use(s)

Manufacturing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Copper (7440-50-8)		
USA ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
Aluminum (7429-90-5)		
USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
Tin (7440-31-5)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³

8.2. Exposure controls

- Appropriate engineering controls : Local exhaust and general ventilation must be adequate to meet exposure standards.
- Hand protection : The use of heat resistant protective gloves is recommended when using product in welding process.
- Eye protection : Safety glasses are recommended; caution should be taken by user to avoid direct eye contact with "flash" or light from reaction, especially during the ignition of the materials.
- Skin and body protection : Use of long-sleeved overalls (in combination with protective gloves and eyewear) to prevent hand burns of weld spatter during exothermic welding. Use welding overalls/tunics buttoned fully to the neck.
- Respiratory protection : If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : granules
- Color : Gray/silver
- Odor : Powder
- Odor threshold : No data available
- pH : No data available
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : No data available
- Freezing point : No data available
- Boiling point : No data available

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Flash point	: No data available
Self ignition temperature	: >1750°F
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Specific gravity	: 5.9
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling- and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Avoid temperatures above 1750°F.

10.5. Incompatible materials

Strong acids and moisture.

10.6. Hazardous decomposition products

Fumes of copper and aluminum will be given off when ignited. Small amounts of fluoride fume or hydrofluoric fume may be released under ignition.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed. Harmful if inhaled.

Copper(I) oxide (1317-39-1)	
LD50 oral rat	470 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	5 mg/l/4h

Calcium fluoride (CaF2) (7789-75-5)	
LD50 oral rat	4250 mg/kg
ATE (oral)	4250.000 mg/kg bodyweight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects.

Copper (7440-50-8)	
LC50 fishes 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	0.0426 - 0.0535 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 other aquatic organisms 2	0.031 - 0.054 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

Copper(I) oxide (1317-39-1)	
EC50 Daphnia 1	0.51 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 other aquatic organisms 1	65 mg/l (Exposure time: 96 h - Species: Desmodesmus subspicatus)
EC50 other aquatic organisms 2	0.021 - 0.037 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Copper(I) oxide (1317-39-1)	
BCF fish 1	(does not generally accumulate)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

In accordance with DOT / ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %

Copper oxide (CuO) (1317-38-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 % (dust or fume only)

Copper(I) oxide (1317-39-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

Calcium fluoride (CaF2) (7789-75-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

Tin (7440-31-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State regulations

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Copper (7440-50-8)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Aluminum (7429-90-5)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Tin (7440-31-5)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Acute Tox. Not classified (Dermal)	Acute toxicity (dermal) Not classified
Acute Tox. Not classified (Oral)	Acute toxicity (oral) Not classified
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
H302	Harmful if swallowed
H319	Causes serious eye irritation
H332	Harmful if inhaled
H400	Very toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.