



CARBON & LOW ALLOY STEEL WIRE SAFETY DATA SHEET

Date: June 22, 2015

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

1.1. Product identifier

Product name: Carbon & Low Alloy Steel Wire

Other means of identification: RG45, RG60, EM12K, EM13K, ER70S-2, ER70S-3, ER70S-6, ER70S-G
EB-2, EB-3, EB-6, EB-8, EB-9

AWS Specifications: A5.2, A5.17, A5.18, A5.23

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

Use of the substance/mixture: For welding consumables and related products

1.3. Details of the supplier of the safety data sheet

UNIBRAZE CORP.
1050 PENNER CREST
HOUSTON TX USA 77055
www.unibraise.com

1.4. Emergency telephone number 713-869-6000/1-800-364-6900

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

STOT SE 3 H335
 STOT SE 3 H336
 STOT RE 1 H372

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



GHS07

GHS08

Signal word (GHS-US) Danger

Hazard statements (GHS-US)

H335 May cause respiratory irritation
 H336 May cause drowsiness or dizziness
 H372 Causes damage to organs through prolonged or repeated exposure

Precautionary statements:

P260 Do not breathe dust/fume/gas/mist/vapors/spray
 P261 Avoid breathing dust/fume/gas/mist/vapors/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
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P312 Call a POISON CENTER or doctor/physician if you do not feel well.
 P314 Seek medical advice if you do not feel well.
 P403+P233 Store in a well ventilated place. Keep container tightly closed
 P405 Store locked up
 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



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SECTION 3: Composition/information on ingredients

- 3.1. **Substances** Not applicable
- 3.2. **Mixture** Full text of H-phrases: see section 16

| Name | Product identifier (CAS) | % Percent | GHS-US classification |
|-----------|--------------------------|------------|-----------------------|
| Manganese | 7439-96-5 | 0.05 - 2 | Not classified |
| Silicon | 7440-21-3 | 0.1 - 1.15 | Not classified |
| Copper | 7440-50-8 | 0.3 - 0.5 | Not classified |
| Carbon | 7440-44-0 | 0.5 - 0.18 | Not classified |
| Titanium | 7440-32-6 | 0 - 0.17 | Not classified |
| Aluminum | 7429-90-5 | 0 - 0.15 | Not classified |

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give
- First-aid measures after skin contact Flush with water for at least 15 minutes. If irritation develops or persists, seek medical attention.
- First-aid measures after eye contact Flush with water for at least 15 minutes. If irritation develops or persists, seek medical attention.
- First-aid measures after ingestion Do not induce vomiting. Seek medical attention.

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

Symptoms/injuries after inhalation:

Short-term (acute) overexposure to the gases, fumes, and dusts may include irritation of the eyes, lungs, nose, and throat. Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death.

Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty in breathing, frequent coughing, or chest pain. The presence of chromium/chromate in fume can cause irritation of nasal membranes and skin. The presence of nickel compounds in fume can cause metallic taste, nausea, tightness of chest, fever, and allergic reaction. Excessive inhalation or ingestion of manganese can produce manganese poisoning. Overexposure to manganese compounds may affect the central nervous system, symptoms of which are languor, sleepiness, muscular weakness, emotional disturbances, and spastic gait resembling Parkinsonism. These symptoms can become progressive and permanent if not treated. Excessive inhalation of fumes may cause "Metal Fume Fever" with Flu-like symptoms such as chills, fever, body aches, vomiting, sweating, etc.

Symptoms/injuries after skin : Dusts may cause irritation.

Symptoms/injuries after eye : Causes eye irritation.

Symptoms/injuries after ingestion : Not an anticipated route of exposure during normal product handling. May be harmful if ingested.

- 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 extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : None known.

- 5.3. **Advice for firefighters** : Protection during firefighting
- : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- 6.1.1. **For non-emergency personnel** No additional information available
- 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 No special measures required.
- Methods for cleaning up Attempt to reclaim the product if possible.

- 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 : Avoid inhaling welding fumes.



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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : No special storage necessary.

7.3. Specific end use(s) : For welding consumables and related products

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Copper (7440-50-8) | | |
|-----------------------|---|-----------------------|
| USA ACGIH | ACGIH TWA (mg/m ³) | 0.2 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 1 mg/m ³ |
| Manganese (7439-96-5) | | |
| USA ACGIH | ACGIH TWA (mg/m ³) | 0.1 mg/m ³ |
| USA OSHA | OSHA PEL (Ceiling) (mg/m ³) | 5 mg/m ³ |
| Silicon (7440-21-3) | | |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ |
| Aluminum (7429-90-5) | | |
| USA ACGIH | ACGIH TWA (mg/m ³) | 1 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 5 mg/m ³ |

8.2. Exposure controls

Appropriate engineering controls: Local exhaust and general ventilation must be adequate to meet exposure standards.

Hand protection : Wear welding gloves.

Eye protection : Wear helmet or face shield with filter lens of appropriate shade number. See ANSI/ASC Z49.1 Section 4.2. Provide protective screens and flash goggles, if necessary, to shield others.

Skin and body protection : Wear head and body protection, which help to prevent injury from radiation, sparks, flame and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the employee not to touch live electrical parts and to insulate yourself from work and ground. Welders should not wear short sleeve shirts or short pants.

Respiratory protection : If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | | | |
|---|-------------------|---------------------------------|-------------------|
| Physical state | Solid | Appearance | Rods or wire |
| Color | Metallic | Odor | No data available |
| Odor threshold | No data available | pH | No data available |
| Relative evaporation rate (butyl acetate=1) | No data available | Melting point | No data available |
| Freezing point | No data available | Boiling point | No data available |
| Flash point | No data available | Self-ignition temperature | No data available |
| Decomposition temperature | No data available | Flammability (solid, gas) | No data available |
| Vapor pressure | No data available | Relative vapor density at 20 °C | No data available |
| Relative density | No data available | Solubility | No data available |
| Log Pow | No data available | Log Kow | No data available |
| ViViscosity, kinematic | No data available | Viscosity, dynamic | No data available |
| Explosive properties | No data available | Oxidizing 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 : None.

10.5. Incompatible materials : None.



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10.6. Hazardous decomposition products

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and welding consumables used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coating on the metal being welded (i.e. paint, painting, galvanizing), the number of welders, the volume of the work area, the quality and the amount of ventilation, the position of the welders head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from the cleaning and degreasing activities).

When an electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Fume and gas decomposition, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration. Also, new compounds not in the electrodes may form. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 3, plus those from the base metal coating, etc., as noted above.

Reasonable expected fume constituents of this product would include: Complex oxides of aluminum, iron, manganese, silicon, titanium, chromium, nickel, calcium, columbium, molybdenum and copper. Fluorides will also be present. Some products will also contain antimony, barium, molybdenum, aluminum, columbium, magnesium, strontium, tungsten, and or zirconium. Fume limit for chromium, nickel and or manganese may be reached before limit of 5 mg/m³ of general welding fumes is reached.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|--|---|
| Acute toxicity | Harmful if swallowed |
| Manganese (7439-96-5) | ATE (oral) 9000000.000 mg/kg |
| Silicon (7440-21-3) | ATE (oral) 3160.000 mg/kg |
| Carbon (7440-44-0) | LD50 (oral rat) >10000 mg/kg |
| Skin corrosion/irritation | Not classified |
| Eye damage/irritation | Not classified |
| Respiratory or skin sensitization | Not classified |
| Germ cell mutagenicity | Not classified |
| Carcinogenicity | Not classified |
| Reproductive toxicity | Not classified |
| Specific target organ toxicity (single exposure) | may cause dizziness or drowsiness. May cause respiratory irritation |
| Specific target organ toxicity (repeated exposure) | Causes damage to organs through prolonged or repeated exposure |
| Aspiration hazard | Not classified |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified

| | |
|--------------------------------|--|
| 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]) |

| | |
|--|-------------------------------------|
| 12.2. Persistence and degradability | No additional information available |
| 12.3. Bio accumulative potential | No additional information available |
| 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 a dangerous good in sense of transport regulations |
| 14.2. UN proper shipping name | Not applicable |



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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 % |
| Manganese (7439-96-5) | |
| 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 % |
| Silicon (7440-21-3) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| Titanium (7440-32-6) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| Carbon (7440-44-0) | |
| 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 listing) | |
| SARA Section 313 - Emission Reporting | 1.0 (dust or fume only) |

15.2. US State regulations

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

Silicon (7440-21-3)

- 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

Titanium (7440-3206)

- U.S. - New Jersey - Right to Know Hazardous Substance 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

SECTION 16: Other information

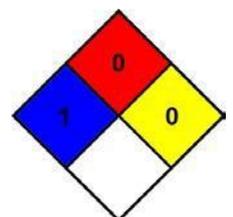
Full text of H-phrases:

- | | |
|--------------|--|
| Carc. 1B | Carcinogenicity, Category 1B |
| Skin Sens. 1 | Sensitization — Skin, category 1 |
| STOT RE 1 | Specific target organ toxicity — Repeated exposure, Category 1 |
| H317 | May cause an allergic skin reaction |
| H350 | May cause cancer |
| H372 | Causes damage to organs through prolonged or repeated |

- | | |
|--------------------|---|
| NFPA health hazard | 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given. |
| NFPA fire hazard | 0 - Materials that will not burn |
| NFPA reactivity | 0 - Normally stable, even under fire exposure conditions, and are not reactive with water. |

HMIS III Rating

- | | |
|--------------|---|
| Health | : 2 Moderate Hazard - Temporary or minor injury may occur |
| Flammability | : 0 Minimal Hazard |
| Physical | : 0 Minimal Hazard |





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