SAFETY DATA SHEET

COPPER BRIDGE | E71T-1C Gas-Shielded Flux-Cored Welding Wire

Conforms to OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012) and the Globally Harmonized System (GHS). **SDS No.: CB-E71T-1C | Revision: 01-2026**

SECTION 1 — IDENTIFICATION

Field	Information
Product Identifier	E71T-1C Flux-Cored Welding Wire
AWS Classification	E71T-1C / E71T-1M per AWS A5.20 / A5.20M
Product Type	Tubular (flux-cored) continuous welding electrode
Recommended Use	Gas-shielded flux-cored arc welding (FCAW-G) of mild and carbon steels
Restrictions on Use	None known. Use only as intended for arc welding.
Supplier	Copper Bridge
Address	766 Palmyrita Ave, Suite A, Riverside, CA 92507
Website	copperbridgeusa.com
Telephone	909-619-3545
Emergency Phone (24-hr)	CHEMTREC — US/Canada: 1-800-424-9300 | Int'l: +1 703-527-3887

SECTION 2 — HAZARD IDENTIFICATION

GHS Classification (product as shipped): Not Classified. As supplied, this product is a solid metal wire (an "article") that is non-flammable, non-explosive, non-reactive and odorless. It presents no known GHS physical or health hazard in its as-shipped form.

Label Elements: No signal word, hazard pictogram, hazard statement, or precautionary statement is required for the product as shipped.

Hazards from Use (not GHS classification): Welding is a hazardous activity. The welding process generates fumes, gases, heat, arc radiation, sparks, and involves electric current. These use-phase hazards are addressed here and throughout this SDS. Consult ANSI Z49.1 "Safety in Welding, Cutting, and Allied Processes" for detailed safe-practice requirements.

- Electric shock can kill. Do not allow live electrical parts to contact skin, wet clothing, or gloves. Insulate yourself from the work and ground.
- Arc rays can injure eyes and burn skin. Use correct shade eye protection and cover exposed skin.
- Fumes and gases can be dangerous to health. Keep your head out of the fume plume and use adequate ventilation.
- Sparks and hot metal can cause fire or explosion. Keep combustible and flammable materials away from the work area.

SECTION 3 — COMPOSITION / INFORMATION ON INGREDIENTS

Deposited weld-metal chemistry per AWS A5.20 for classification E71T-1C. Single values are maximum; iron (Fe) is the balance. As shipped, hazardous constituents are bound in the wire and flux core and are not available for exposure until the product is consumed during welding.

Component (Weld Metal)	CAS No.	EINECS No.	% by Wt (max)
Iron (Fe)	7439-89-6	231-096-4	Balance
Manganese (Mn)	7439-96-5	231-105-1	1.75
Silicon (Si)	7440-21-3	231-130-8	0.90
Carbon (C)	7440-44-0	231-153-3	0.12
Chromium (Cr)	7440-47-3	231-157-5	0.20
Nickel (Ni)	7440-02-0	231-111-4	0.50
Molybdenum (Mo)	7439-98-7	231-107-2	0.30
Copper (Cu)	7440-50-8	231-159-6	0.35
Vanadium (V)	7440-62-2	231-171-1	0.08
Phosphorus (P)	7723-14-0	231-768-7	0.030
Sulfur (S)	7704-34-9	231-722-6	0.030

Flux-Core Ingredients (not included in the weld-metal percentages above):

Component (Flux Core)	CAS No.	EINECS No.	% by Wt
Titanium Dioxide (rutile)	13463-67-7	236-675-5	< 8.0
Calcium Fluoride	7789-75-5	232-188-7	< 6.0
Mica	12001-26-2	215-479-3	< 6.0
Calcium Carbonate	1317-65-3	215-279-6	< 2.5
Feldspar	68476-25-5	270-666-7	< 2.5
Potassium Silicate	1312-76-1	233-001-1	< 2.0
Sodium Silicate	1344-09-8	239-981-7	< 2.0
Potassium Oxide	12136-45-7	235-227-6	< 2.0
Bentonite	1302-78-9	215-108-5	< 2.0
Quartz (amorphous silica)	14808-60-7	238-878-4	< 1.0

Other elements or ingredients may be present in quantities much less than 1%.

SECTION 4 — FIRST-AID MEASURES

Inhalation: Move the affected person to fresh air at once. If breathing is difficult or has stopped, give artificial respiration or oxygen by trained personnel and seek medical attention immediately.

Eye Contact: For particulate or fume in the eyes, flush with clean water for at least 15 minutes. For arc-flash burns, move to a darkened area, remove contact lenses if present, rest the eyes, and cover with a clean, non-stick dressing. Obtain medical attention if irritation persists.

Skin Contact: Remove contaminated clothing or PPE and wash the skin with mild soap and water. For thermal or arc-radiation burns, flush with cool water and seek medical attention as needed.

Ingestion: Ingestion is not an expected route of exposure for wire in its as-shipped form. If dust or fume is swallowed and the person is conscious, rinse the mouth with water and obtain medical advice. Do not induce vomiting.

Most Important Symptoms: Short-term overexposure to welding fume may cause metal-fume fever, dizziness, nausea, and irritation of the eyes, nose, and throat. Prolonged overexposure to manganese may affect the central nervous system; prolonged overexposure to iron oxide fume may cause siderosis.

SECTION 5 — FIRE-FIGHTING MEASURES

Flammability: The product as shipped will not burn and is non-explosive.

Suitable Extinguishing Media: Use media appropriate to the surrounding fire. No unsuitable media are known for this product.

Specific Hazards: Welding arcs and sparks can ignite combustible or flammable materials nearby. During welding, fumes and gases may be released (see Sections 2, 8, and 11).

Protective Equipment for Firefighters: Wear self-contained breathing apparatus (SCBA) and full protective clothing when fighting fires where fumes or vapors may be present.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions: No special precautions are required for the solid product. Where dust or fume is generated during use, apply the ventilation and personal-protection controls in Section 8.

Environmental Precautions: Prevent scrap, dust, or grinding residue from entering drains, sewers, or waterways.

Containment & Cleanup: Collect wire and place it back in the original container. Sweep or vacuum any dust while avoiding dispersal, and manage collected material as recyclable scrap where possible (see Section 13).

SECTION 7 — HANDLING AND STORAGE

Safe Handling: Handle with gloves. Keep airborne dust and fume to a minimum and use adequate ventilation during welding. Do not eat, drink, or smoke while handling the product, and wash hands afterward. Follow ANSI Z49.1 and your employer's safe-work practices.

Storage: Store in the original closed packaging in a cool, dry place. Avoid extreme temperature and humidity to preserve weldability. Keep away from incompatible materials such as strong acids, oxidizers, and halogens. Ensure packages are properly labeled at all times.

SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits (mg/m³ unless noted) for fume constituents and flux components. Limits apply to airborne fume and dust generated during welding, not to the product as shipped.

Substance	OSHA PEL	ACGIH TLV	NIOSH REL
Iron oxide fume (as Fe)	10	5 (R)	5
Manganese (as fume)	5 (ceiling)	0.02 (R) / 0.1 (I)	1 / 3 (STEL)
Silicon	15 (dust) / 5 (R)	Withdrawn	10 / 5 (R)
Carbon (as black)	3.5	3 (I)	3.5
Chromium (metal)	1	0.5	0.5
Hexavalent chromium (Cr VI)*	0.005	0.0002	0.001
Nickel (metal)	1	1.5 (I)	0.015
Copper (fume)	0.1	0.2	0.1
Molybdenum	15 (dust)	10 (I) / 3 (R)	—
Vanadium (as V2O5)	0.5 (C, resp. dust)	0.05 (I)	0.05 (C)
Titanium dioxide	15 (total)	10	Lowest feasible
Calcium fluoride (as F)	2.5	2.5	2.5
Quartz (crystalline silica)	0.05 (R)	0.025 (R)	0.05 (R)
Fluorides (as F)	2.5	2.5	2.5
Carbon monoxide (ppm)	50	25	35 / 200 (ceiling)
Carbon dioxide (ppm)	5000	5000 / 30000 (STEL)	5000 / 30000 (STEL)
Nitrogen dioxide (ppm)	5 (ceiling)	0.2	1 (STEL)
Ozone (ppm)	0.1	0.05–0.2	0.1 (ceiling)

*(R) = respirable fraction; (I) = inhalable fraction; (C) = ceiling; STEL = short-term exposure limit. Values reflect OSHA 29 CFR 1910.1000 Z-tables, the NIOSH Pocket Guide, and ACGIH TLVs current as of this revision. *Welding materials containing chromium can generate hexavalent chromium — comply with OSHA 29 CFR 1910.1026. Occupational exposure limits are periodically revised; consult the current OSHA/ACGIH/NIOSH sources.*

Engineering Controls: Provide adequate general and local exhaust ventilation at the arc to keep fume and gas below the applicable exposure limits within the welder's breathing zone.

Eye/Face Protection: Wear a welding helmet or face shield with a filter lens shade of 12–14 (or as appropriate to the process and amperage per ANSI Z49.1). Provide screens or goggles to protect nearby workers.

Skin/Body Protection: Wear welder's gloves, and flame-resistant clothing such as aprons, sleeves, and shoulder protection to guard against radiation, sparks, and shock.

Respiratory Protection: Where ventilation cannot keep exposures below the applicable limits, use a NIOSH-approved fume respirator or air-supplied respirator, particularly in confined spaces.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance / Form	Solid tubular metal wire, silver to gray, wound on spools
Odor	Odorless
Physical State	Solid
pH	Not applicable
Melting Point	Approx. 1370–1500 °C (base alloy)
Flash Point	Not applicable
Flammability	Not flammable as shipped
Solubility (water)	Insoluble
Vapor Pressure / Density	Not applicable
Relative Density	Approx. 7.8 g/cm³ (steel)

SECTION 10 — STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage, handling, and use.

Possibility of Hazardous Reactions: None known under normal conditions.

Conditions to Avoid: Extreme temperature and humidity; contact with incompatible materials.

Incompatible Materials: Strong acids, strong oxidizers, and halogens.

Hazardous Decomposition Products: During welding, the product generates fume and gas containing oxides of iron, manganese, and other alloying elements, and may generate hexavalent chromium, carbon monoxide, nitrogen oxides, and ozone (see Sections 8 and 11).

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of Exposure: Inhalation of fume and gas during welding is the primary route. Skin and eye contact with arc radiation is also significant. Ingestion is not expected under normal use.

Acute Effects: Overexposure to welding fume can cause metal-fume fever, dizziness, nausea, and irritation of the eyes, nose, and throat. Arc rays can burn eyes and skin.

Chronic Effects: Prolonged overexposure to iron oxide fume may cause siderosis. Prolonged manganese overexposure may cause irreversible central-nervous-system effects, including impaired speech and movement. Overexposure to fume has been associated with respiratory effects, and effects on the pancreas and liver have been reported.

Carcinogenicity: IARC classifies welding fume as carcinogenic to humans (Group 1) and lists nickel compounds and crystalline silica accordingly; hexavalent chromium is a known human carcinogen. NTP lists welding fume constituents including nickel and crystalline silica. OSHA specifically regulates hexavalent chromium as a carcinogen. Skin cancer from arc radiation has been reported.

Skin corrosion/irritation, serious eye damage, respiratory/skin sensitization, germ-cell mutagenicity, reproductive toxicity, and specific target-organ toxicity (single/repeated) for the product as shipped: Not classified.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicity: No aquatic toxicity data are available for the product as shipped. Certain constituents (nickel, copper, manganese compounds) may be harmful to aquatic life in released or dissolved form.

Persistence & Degradability: No data available. The product is an inorganic metal article and is not readily biodegradable.

Bioaccumulative Potential: The product may contain potentially bioaccumulating metal constituents (e.g., nickel, copper).

Other Adverse Effects: Do not allow the material or its residues to be released to the environment without proper authorization.

SECTION 13 — DISPOSAL CONSIDERATIONS

Disposal Methods: Minimize waste generation. Where possible, collect scrap and by-products for recycling. Dispose of waste in accordance with applicable federal, state, and local regulations. Unaltered product may be handled as recyclable metal scrap or as advised by your local hazardous-waste authority.

SECTION 14 — TRANSPORT INFORMATION

US DOT / IATA / IMDG: Not regulated as a dangerous good. No UN number, proper shipping name, hazard class, packing group, or marine-pollutant designation applies. No international transport regulations apply.

SECTION 15 — REGULATORY INFORMATION

TSCA Inventory Status (US): The components of this product are listed on the TSCA Inventory.

CERCLA Reportable Quantities (RQ): Copper 5,000 lbs (particulates < 100 µm); Nickel 100 lbs; Chromium and chromium compounds 5,000 lbs (40 CFR 302.4).

SARA Title III Section 313: Reportable toxic chemicals include copper, manganese, chromium, and nickel. See Section 3 for weight percentages.

SARA Section 311/312 Hazard Class: As shipped: Immediate (acute). In use: immediate and delayed (acute).

⚠ **CALIFORNIA PROPOSITION 65 WARNING:** Welding and use of this product can expose you to chemicals including hexavalent chromium compounds, nickel, and titanium dioxide (airborne respirable particles), which are known to the State of California to cause cancer, and hexavalent chromium compounds and nickel, which are known to cause birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

State Right-to-Know: Constituents including manganese, chromium, copper, nickel, silicon, and iron oxide appear on various state hazardous-substance lists (e.g., CA, NJ, PA, MA, MN). Consult the applicable state list for details.

SECTION 16 — OTHER INFORMATION

Rating System	Health / Flammability / Physical (Reactivity)
HMIS®	Health 2 | Flammability 0 | Physical Hazard 0
NFPA 704	Health 2 | Fire 0 | Reactivity 0

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