SAFETY DATA SHEET

COPPER BRIDGE | E7018 Low-Hydrogen Covered Electrode

Conforms to OSHA Hazard Communication Standard 29 CFR 1910.1200 and the Globally Harmonized System (GHS). **SDS No.: CB-E7018 | Revision: 07-2023**

SECTION 1 — IDENTIFICATION

Field	Information
Product Identifier	E7018 Low-Hydrogen Covered Electrode
AWS Classification	E7018 per AWS A5.1
Product Type	Flux-coated carbon-steel covered electrode
Recommended Use	Shielded Metal Arc Welding (SMAW)
Restrictions on Use	Not 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, flux-coated metal electrode that is nonflammable, non-explosive, non-reactive, and odorless.

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 generates fumes, gases, heat, arc radiation, sparks, and electric current. Control these use-phase hazards throughout welding operations.

- Electric shock can kill. Keep live electrical parts away from skin, wet clothing, and gloves; insulate from the work and ground.
- Arc rays can injure eyes and burn skin. Use the correct filter shade and cover exposed skin.
- Fumes and gases can be hazardous and may displace oxygen. Keep your head out of the plume and use adequate ventilation.
- Sparks, slag, and hot metal can cause fire or explosion. Keep combustibles and flammables away from the work area.

SECTION 3 — COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature: Carbon-steel covered-electrode family SDS ingredient ranges; values are not lot test results

Component (Product / Coating)	CAS No.	EINECS No.	% by Wt
Iron	7439-89-6	231-096-4	Balance
Calcium carbonate	1317-65-3	215-279-6	<2.5
Calcium fluoride	7789-75-5	232-188-7	<6.0
Titanium dioxide	13463-67-7	236-675-5	<10
Manganese	7439-96-5	231-105-1	<5
Zircon	14940-68-2	238-878-4	<2
Silicon	7440-21-3	231-130-8	<5
Potassium silicate	1312-76-1	215-199-1	<4
Kaolin	1332-58-7	310-194-1	<5
Titanium	7440-32-6	231-142-3	<5
Other ingredients	—	—	<1 each

Expected welding-fume and gas constituents generated during use (not as-shipped composition):

Component (Use Phase)	CAS No.	EINECS No.	Status
Iron compounds	Varies	Varies	Use-phase; not quantified
Manganese compounds	Varies	Varies	Use-phase; not quantified
Silicon compounds	Varies	Varies	Use-phase; not quantified
Copper compounds	Varies	Varies	Use-phase; not quantified
Aluminum compounds	Varies	Varies	Use-phase; not quantified
Titanium compounds	Varies	Varies	Use-phase; not quantified
Zirconium compounds	Varies	Varies	Use-phase; not quantified
Carbon monoxide / dioxide	630-08-0 / 124-38-9	211-128-3 / 204-696-9	Use-phase gases
Nitrogen dioxide	10102-44-0	233-272-6	Use-phase gas
Ozone	10028-15-6	233-069-2	Use-phase gas

Composition note: Actual product composition may vary within the stated family ranges. Welding fumes are not compositionally identical to the intact covered electrode and may include metal oxides and constituents from the electrode, base metal, and coatings.

SECTION 4 — FIRST-AID MEASURES

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

Eye Contact: For particles or fume, flush with clean water for at least 15 minutes. For arc-flash symptoms, rest the eyes in a darkened area and obtain prompt medical attention.

Skin Contact: Wash dust from skin with soap and water. For thermal or arc-radiation burns, cool with clean running water and obtain medical attention as needed.

Ingestion: Not an expected route of exposure. Rinse the mouth; do not induce vomiting. Contact a poison center or physician if a significant quantity is swallowed or symptoms develop.

Most Important Symptoms / Treatment: Acute effects may include irritation, coughing, dizziness, nausea, and metal-fume fever. Delayed effects may involve the lungs or nervous system. Treat symptomatically and advise medical personnel that welding-fume exposure may have occurred.

SECTION 5 — FIRE-FIGHTING MEASURES

Flammability / Suitable Media: The product will not burn as shipped. Use extinguishing media appropriate to the surrounding fire.

Unsuitable Media: Do not apply water directly to molten metal. Avoid halogenated agents on hot or molten metal unless specifically approved.

Specific Hazards: Welding arcs and sparks can ignite nearby combustibles. Hot or molten metal can react violently with water, and welding fumes and gases may be hazardous.

Firefighter Protection: Wear full protective clothing and positive-pressure self-contained breathing apparatus where smoke, fumes, or oxygen-deficient conditions may be present.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions: Intact covered electrodes present no conventional spill hazard. Wear gloves, use safe lifting practices, and avoid creating or breathing dust from damaged material.

Environmental Precautions: Prevent electrode fragments, metal fines, and cleanup residues from entering drains, soil, or surface water.

Containment & Cleanup: Collect intact electrodes mechanically. Use HEPA-filtered vacuum or wet cleanup for fine particulate; do not dry sweep airborne dust. Recycle clean metal scrap where practical.

SECTION 7 — HANDLING AND STORAGE

Safe Handling: Use adequate ventilation and welding controls. Avoid sharp electrode ends and energized holders; wash after handling and keep food, drink, and tobacco out of welding areas.

Storage: Keep in original closed packaging in a cool, dry location. Protect from moisture, extreme temperature, physical damage, strong acids, oxidizers, and halogens.

SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters: Occupational limits below apply to airborne fume, dust, and gases generated during welding, not to the intact electrode. More protective state, local, or employer limits may apply.

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)
Calcium carbonate	15 total / 5 (R)	10	10 total / 5 (R)
Calcium fluoride (as F)	2.5	2.5	2.5
Fluorides (as F)	2.5	2.5	2.5
Titanium dioxide	15 (total)	10	2.4 fine / 0.3 ultrafine (R)
Titanium as oxide dust	15 (total)	10	TiO_2-based REL
Kaolin	15 total / 5 (R)	2 (R)	10 total / 5 (R)
Zircon (silica basis)	0.05 (R)	0.025 (R)	0.05 (R)
Potassium silicate	Not established	Not established	Not established
Copper fume	0.1	0.2	0.1
Aluminum dust / fume	15 total / 5 (R)	1 (R)	10 total / 5 (R)
Zirconium compounds	5	5	5 / 10 (STEL)
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)

Substance	OSHA PEL	ACGIH TLV	NIOSH REL
Ozone (ppm)	0.1	0.05–0.2	0.1 (ceiling)

(R) = respirable fraction; (I) = inhalable fraction; STEL = short-term exposure limit. Limits may be revised; consult current OSHA, ACGIH, NIOSH, and applicable local requirements.

Engineering Controls: Use local exhaust at the arc and adequate general ventilation to keep contaminants below applicable limits and oxygen at safe levels.

Eye / Face Protection: Wear a welding helmet or shield with the correct filter shade plus safety glasses with side shields. Screen nearby personnel from arc radiation.

Skin / Body Protection: Wear dry welding gloves and flame-resistant clothing that covers exposed skin. Use sleeves, aprons, footwear, and hearing protection as required.

Respiratory Protection: Where ventilation cannot maintain applicable limits, use a NIOSH-approved respirator selected for measured contaminants under a compliant respiratory-protection program.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance / Form	Flux-coated solid metal rod
Odor	Odorless
Physical State	Solid
pH	Not applicable
Melting Point	Approx. 1535 °C (elemental iron reference)
Flash Point	Not applicable
Flammability	Not flammable as shipped
Solubility (water)	Insoluble
Vapor Pressure / Density	Not applicable
Relative Density	Approx. 7.86 (elemental iron reference)

SECTION 10 — STABILITY AND REACTIVITY

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

Possibility of Hazardous Reactions: None known under normal storage, handling, and use conditions.

Conditions to Avoid: Moisture, extreme temperature, physical damage, and uncontrolled hot-work conditions.

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

Hazardous Decomposition Products: Welding can generate metal oxides, carbon monoxide, carbon dioxide, ozone, and nitrogen oxides. Actual fume depends on the electrode, base metal, coatings, process, and contaminants.

SECTION 11 — TOXICOLOGICAL INFORMATION

Routes of Exposure: Inhalation of welding fume and gas is the principal route during use. Eye and skin exposure may occur from particles, spatter, heat, and arc radiation.

Acute Effects: Overexposure may cause irritation, coughing, dizziness, nausea, and metal-fume fever. Arc radiation can injure eyes and burn skin; process gases may cause asphyxiation.

Chronic Effects: Repeated fume exposure may affect the lungs. Iron oxide may cause siderosis, and excessive manganese exposure may cause irreversible neurological effects.

Carcinogenicity: The product as shipped is not classified as carcinogenic. IARC classifies welding fumes and ultraviolet radiation from welding as Group 1 and titanium dioxide as Group 2B.

Other Hazard Classes: Based on available information, the intact electrode is not classified for mutagenicity, reproductive toxicity, specific target-organ toxicity, or aspiration hazard.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicity: No product-specific aquatic data are available. Welding dust and residues may contain constituents harmful to aquatic organisms at sufficient concentration.

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

Bioaccumulative Potential: No product-specific data are available; mobility and accumulation depend on particle size, pH, and environmental conditions.

Other Adverse Effects: Prevent uncontrolled release of electrode fragments, fines, welding dust, and process residues.

SECTION 13 — DISPOSAL CONSIDERATIONS

Disposal Methods: Minimize waste and recycle clean electrodes and steel scrap where practical. Collect welding dust, filters, residues, and contaminated packaging in labeled containers; classify and dispose of them under applicable federal, state, and local requirements. Do not discharge residues to sewers or waterways.

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. Secure packages during transport and prevent release of dust or process residues.

SECTION 15 — REGULATORY INFORMATION

TSCA Inventory Status (US): The product-family constituents identified in Section 3 are listed on, or exempt from, TSCA inventory requirements.

CERCLA: The source SDS identifies manganese as potentially regulated but gives no product-specific reportable quantity. Evaluate the actual release circumstances.

SARA Title III Section 313: The source SDS identifies manganese as potentially reportable. Evaluate actual composition, processing, thresholds, and exemptions.

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 identified in the source SDS, including airborne respirable titanium dioxide and welding-fume constituents known to the State of California to cause cancer or reproductive harm. For more information go to www.P65Warnings.ca.gov.

State Right-to-Know: Constituents including iron/iron oxide, manganese, silicon, calcium fluoride, calcium carbonate, kaolin, titanium dioxide, and zircon may appear on state hazardous-substance lists. Consult the applicable current list before reporting.

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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Prepared by Copper Bridge from source SDS 002-CS 70xx, rev. 07-2023. The stated family composition ranges are not lot results, and welding-fume hazards vary with the electrode, base metal, coatings, process, and controls. This information is believed accurate as of the revision date but is provided without warranty; users remain responsible for suitability, compliance, and workplace controls.

