Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Section 1: Product and Company Identification

Product Name:	TUNGSTEN ELECTRODES FOR WELDING
Product Identifier/Use:	WELDING; METAL-WORKING OPERATIONS
Trade name:	Tungsten (EWP), 2% Ceriated Tungsten (EWCe-2), 2% Lanthanated Tungsten (EWLa-1), 1% Thoriated Tungsten (EWTh-1), 2% Thoriated Tungsten, (EWTh-2), Zirconated Tungsten (EWZr-1), 1.5% Lanthanated Tungsten (EWG)
Classification:	AWS A5.12
Manufacturer:	TECHNIWELD USA LLC.
Physical Address:	6205 BOAT ROCK BLVD ATLANTA, GA 30336
Mailing Address:	PO BOX 44226 ATLANTA, GA 30336
Business Phone:	404-699-9900
Business Fax:	404-699-7800
E-mail Address:	info@TECHNIWELDUSA.COM
Web Address:	TECHNIWELDUSA.COM
Emergency Phone:	CHEMTREC (24-Hour) 1-800-424-9300 OUTSIDE OF USA OR CANADA 1-703-527-3887
Date of Preparation:	JULY 16, 2015
OSHA Regulatory Status:	Non-Regulated

Section 2: Hazards Identification

Important: This section covers the material from which the product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered under Section V. Thorium dioxide is subject to the reporting requirements of Section 313 of Title Ⅲ of the Superfund Amendments and Reauthorization Act of 1986(SARA) and 40 CFR Part 372.

Designation		Chemical composition impurities ≤0.1%		Tip Color
ISO 6848	**AWS A5.12**	**Oxide Additive, %**	**Tungsten, %**	
WT20	EWTH-2	ThO_2: 1.70-2.20	≥ 97.30	Red
WP	EWP	----	≥ 99.95	Green
WL15	EWLa-1.5	LaO_2: 1.30-1.70	≥ 97.80	Gold
WC20	EWCe-2	CeO2: 1.80-2.20	≥ 97.30	Orange/Gray
WL20	EWLa-1	La_2O_3: 0.80-2.20	≥ 98.30	Black
WL10	EWLa-2	La_2O_3: 1.80-2.20	≥ 97.30	Sky-blue
WZ3	EWZR-1ns	ZrO_2: 0.15-0.50	≥ 99.10	Brown

*The term "HAZARDOUS MATERIALS" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard.

Section 3: Composition and Information on Ingredients

Ingredient	CAS No.	OSHA PEL	ACGIH TWA	ACGIH STEL
Tungsten(w)	7440-33-7	-	5mg/m^3	10 mg/m^3
Thorium Dioxide	1314-20-1	-	-	-
Zirconium Oxide	1314-23-4	5mg/m^3	5mg/m^3	10 mg/m^3
Cerium Dioxide	1345-13-7	-	-	-
Lanthanum Dioxide	1312-81-8	-	-	-

Gaseous reaction products may include carbon monoxide and carbon dioxide Ozone and nitrogen oxides may be formed by the radiation from the arc. One method of determining the composition and quantity of the fumes and gases to which the workers are exposed is to take an air sample from inside the welder's helmet while worn or within the worker's breathing zone. See ANSI/AWS F1.1 publication available from the American Welding Society 550 N.W. LeJeune Road, Miami, Florida 33126

Section 4: First Aid Measures

Call for medical assistance. Use first aid procedures recommended by the American Red Cross. If breathing is difficult – give oxygen. If not breathing – use CPR (cardiopulmonary resuscitation).
Carcinogenicity: Thorium dioxide has been identified as a carcinogen by NTP, IARC and others. Evidence for its ability to cause cancer has come solely from its internal medical use.

Section 5: Fire Fighting Measures

Non-flammable: Welding arc and sparks can ignite combustibles. See Z-49.1 referenced in Section 7.

Section 6: Accidental Release Measures

Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

Section 7: Handling and Storage

Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the TLV's in the worker's breathing zone and general area. Train the welder to keep his head out of the fumes.

Section 8: Exposure Controls / Personal Protection

Ventilation: Use plenty of ventilation and/or local exhaust at the arc, to keep the fumes and gases below the threshold limit value within the worker's breathing zone and the general work area. Welders should be advised to keep their head out of the fumes.
Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the threshold limit value.
Eye Protection: Wear a helmet or face shield with a filter lens shade number 12-14 or darker. Shield other workers by providing screens and flash goggles.
Protective Clothing: Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark substantial clothing. Welders should be trained not to allow electrically live parts to contract the skin or wet clothing and gloves. The welders should insulate themselves from the work and ground. Waste Disposal Method: Discard any product, residue, disposal container, or liner in an environmentally acceptable manner approved by Federal, State and Local regulations.

Section 9: Physical and Chemical Properties

These products s shipped are non-hazardous, non-flammable, non-explosive and non-reactive.

Section 10: Stability and Reactivity

Read and understand the manufacturer's instructions and precautionary label on this product. It is recommended that thoriated electrodes are stored in steel boxes, clearly labeled, with the radiation trefoil.

Preparation/Grinding. Grinding creates a minimal hazard due to the thoria in the grinding dust. Grinder should incorporate local dust extraction. Operator should wear a filter mask, gloves and eye protection when handling and grinding thoriated tungsten. Dust extracted from the grindstone should be deposited into an airtight, disposable bag. See American Standard Z49.1 Safety in Welding and Cutting, published by the AMERICAN WELDING SOCIETY, 550 N.W. Lejeune Road, Miami, Florida 33126 and OSHA Publication 2206 (29 CFR 1910).

Section 11: Toxicological Information

Threshold Limit Value:

The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5mg/M3 . The ACGIH 1984-85 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section 10 for specific fume constituents, which may modify this TLV.

Effects of Overexposure:

FUMES AND GASES can be dangerous to your health. Aggravation of pre-existing respiratory or allergic conditions may occur in some workers.

SHORT-TERM (ACUTE) OVEREXPOSURE to welding fumes may result in discomfort such as: dizziness, nausea, or dryness or irritation of nose, throat, or eyes.

LONG-TERM (CHRONIC) OVEREXPOSURE may lead to siderosis (iron deposits in the lung) and is believed by investigators to affect pulmonary function.

ARC RAYS can injure eyes and burn skin.

Section 12: Ecological Information

Not Applicable.

Section 13: Disposal Considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14: Transportation Information

Not applicable.

Section 15: Regulatory Information

HCS CLASSIFICATION: Not Regulated.

U.S. FEDERAL REGULATIONS:

TSCA 8(a) CDR Exempt/Partial Exemption: This material is listed or exempted.

United States Inventory (TSCA 8b): This material is listed or exempted.

SARA 302/304: No products were found.

SARA 311/312 Hazards Identification: Not regulated.

CLEAN AIR ACT SECTION 112 (b) HAZARDOUS AIR POLLUTANTS (HAPS): Not listed.

CLEAN AIR ACT SECTION 602 CLASS I & II SUBSTANCES: Not listed.

DEA LIST I CHEMICALS (PRECURSOR CHEMICALS): Not listed.

DEA LIST II CHEMICALS (ESSENTIAL CHEMICALS): Not listed.

State Regulations

MASSACHUSETTS: This material is not listed.

NEW YORK: This material is not listed.

NEW JERSEY: This material is not listed.

PENNSYLVANIA: This material is not listed.

CALIFORNIA PROP. 65: This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

Canada

WHMIS (CANADA): Not controlled under WHMIS (Canada)

Canadian Lists

CANADIAN NPRI: This material is not listed.

CEPA TOXIC SUBSTANCES: This material is not listed.

CANADA INVENTORY (DSL): This material is listed or exempted.

International Regulations

International Lists

AUSTRALIA INVENTORY (AICS): This material is listed or exempted.

CHINA INVENTORY (IECSC): This material is listed or exempted.

JAPAN INVENTORY: Not determined.

KOREA INVENTORY: This material is listed or exempted.

MALAYSIA INVENTORY (EHS REGISTER): Not determined.

NEW ZEALAND INVENTORY OF CHEMICALS (NZIoC): This material is listed or exempted.

PHILIPPINES INVENTORY (PICCS): This material is listed or exempted.

TAIWAN INVENTORY (CSNN): Not determined.

EUROPE INVENTORY (EINECS): This material is listed or exempted.

CHEMICAL WEAPONS CONVENTION LIST SCHEDULE I CHEMICALS: Not listed.

CHEMICAL WEAPONS CONVENTION LIST SCHEDULE II CHEMICALS: Not listed.

CHEMICAL WEAPONS CONVENTION LIST SCHEDULE III CHEMICALS: Not listed.

Section 16: Other Information

Disclaimer of Liability:

The information in this SDS is believe to be correct as of the date issued. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof .