

## Section 1. Chemical Product and Company Identification

<b>Product name</b>	<b>Classification</b>	<b>Classification</b>
<b>Blueshield:</b> 2% Thoriated;	<b>CSA:</b> -	<b>AWS:</b> EWTh-2;
<b>Description</b>	: GTAW - Tungsten electrodes.	<b>Generic Code</b> : AL-J-006-1
<b>In case of emergency</b>	: 1-514-878-1667	<b>Date of issue</b> : 01/30/2008
<b>Supplier</b>	: Air Liquide Canada Inc. 1250, René-Lévesque West, Suite 1700, Montreal, QC H3B 5E6	

## Section 2. Hazards Identification

<b>Physical state and Appearance</b>	: Solid.
<b>Emergency overview</b>	: These hazards relate to welding fumes (electrodes in use) and not to the electrodes as sold.  WARNING! ELECTRIC SHOCK can kill. FUMES AND GASES can be dangerous to your health. ARC RAYS can injure eyes and burn skin. CANCER HAZARD CONTAINS MATERIAL WHICH CAN CAUSE CANCER MAY BE HARMFUL IF INHALED. Avoid exposure - obtain special instructions before use. Contains material that can cause target organ damage. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
<b>Routes of entry</b>	: Inhalation.
<b>Potential acute health effects</b>	
<b>Eyes</b>	: Hazardous by the following route of exposure: of eye contact (irritant). Inflammation of the eye is characterized by redness, watering and itching.
<b>Skin</b>	: Skin contact may produce burns.
<b>Inhalation</b>	: Hazardous by the following route of exposure: of inhalation.
<b>Ingestion</b>	: Since the product (welding fumes) is a gas and that it is mostly probable that it will be inhaled more than ingested, please consider first to look at the preventive measures in case of inhalation.
<b>Potential chronic health effects</b>	: <b>Carcinogenic effects(*)</b> : Classified 1 by NTP [Thorium oxide]. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available.
<b>Medical conditions aggravated by over-exposure</b>	: Repeated exposure to the fumes emitted while using this material may produce general deterioration of health.

(\*) See Abbreviations (section 16).

## Section 3. Composition, Information on Ingredients

Name	CAS #	% by weight	UN number
Tungsten	7440-33-7	98-100	Not applicable.
Thorium oxide	1314-20-1	0.01-2	Not applicable.

The fumes emitted by the electrodes, in use, are hazardous. This MSDS is written for workers using these electrodes.

See Section 8 for Exposure Limits of the oxides found in the welding fumes.

## Section 4. First Aid Measures

<b>Eye contact</b>	: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention if irritation occurs.
<b>Skin contact</b>	: Wash with soap and water. Get medical attention if irritation develops.
<b>Inhalation</b>	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion</b>	: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If potentially dangerous quantities of this material have been swallowed, call a physician immediately.

## Section 5. Fire Fighting Measures

<b>Flammability of the product</b>	: Non-flammable. Emits toxic fumes when heated.
<b>Explosibility</b>	: Not available.
<b>Fire-fighting media and instructions</b>	: Use extinguishing media suitable for surrounding materials.

## Section 6. Accidental Release Measures

**Small/Large Spill and Leak** : Use appropriate tools to transfer the spilled solid to a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

## Section 7. Handling and Storage

**Handling** : Avoid breathing dusts, vapors or fumes from burning materials. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not ingest. Keep container closed. Wash thoroughly after handling.

**Storage** : All filler metals in their original, unopened containers should be kept in a relatively dry storage area at temperatures between 15°C (60°F) and 30°C (80°F) and 50% maximum relative humidity.

## Section 8. Exposure Controls, Personal Protection

**Engineering controls** : Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. If user operations generate dust, fumes or mist, use ventilation or respirator to keep exposure to airborne contaminants below the exposure limit.

### Personal protection

- Eyes** : Safety glasses with side shields. Face shield with radiation shielding.
- Body** : Full suit. (Fire resistant.)
- Respiratory** : Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear a canister breathing apparatus (respirator) or a supplied-air respirator, when required, to weld or sharpened in a confined space or when room exhaust or ventilation does not keep exposure below the acceptable values.
- Hands** : Gloves. (Fire resistant.)
- Feet** : Metal cap, safety boots.

### Exposure limits

#### Product name

Tungsten (VI) Oxide

#### Exposure limits

ACGIH TLV (United States, 1/2006). STEL: 10 mg/m<sup>3</sup>, (W) 15 minute(s). Form: Insoluble TWA: 5 mg/m<sup>3</sup>, (W) 8 hour(s). Form: Insoluble  
OSHA PEL 1989 (United States, 3/1989). STEL: 10 mg/m<sup>3</sup>, (W) 15 minute(s). Form: Insoluble TWA: 5 mg/m<sup>3</sup>, (W) 8 hour(s). Form: Insoluble

*Consult local authorities for acceptable exposure limits.*

## Section 9. Physical and Chemical Properties

- Physical state and Appearance** : Solid.
- Color** : Grayish-white.
- Odor** : Odorless.
- Melting/freezing point** : 3407.05°C (6164.7°F)
- Specific gravity** : 19.3
- Solubility** : Insoluble in the following materials: cold water, hot water.

## Section 10. Stability and Reactivity

- Stability and reactivity** : The product is stable.
- Hazardous decomposition products** : Metallic oxides. Carbon oxides (CO, CO<sub>2</sub>). Arc radiation can support the production of ozone and nitrogen oxides.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological Information

- Chronic effects and other toxic effects on humans** : **CARCINOGENIC EFFECTS:** See Section 2.  
Acute exposure to welding fumes may result in discomfort such as: dizziness, nausea or dryness of nose, throat or the eyes.

## Section 12. Ecological Information

- Products of degradation** : Some metallic oxides.

## Section 13. Disposal Considerations

- Waste information** : Waste must be disposed of in accordance with federal, state and local environmental control regulations. Recycle, if possible. Radioactive waste.

*Consult your local or regional authorities.*

## Section 14. Transport Information

No transport class is found applicable to this product.

## Section 15. Regulatory Information

- HCS Classification** : These hazards relate to welding fumes (electrodes in use) and not to the electrodes as sold.  
Contains material which may cause cancer.
- U.S. Federal regulations** : TSCA 8(a) PAIR: Tungsten  
**United States inventory (TSCA 8b)**: All components are listed or exempted.  
**Clean Water Act (CWA) 307**: No products were found.  
**Clean Water Act (CWA) 311**: No products were found.  
**Clean Air Act (CAA) 112 accidental release prevention**: No products were found.  
**Clean Air Act (CAA) 112 regulated flammable substances**: No products were found.  
**Clean Air Act (CAA) 112 regulated toxic substances**: No products were found.  
**SARA 302/304/311/312 extremely hazardous substances**: No products were found.  
**SARA 302/304 emergency planning and notification**: No products were found.  
**SARA 302/304/311/312 hazardous chemicals**: Tungsten; thorium oxide  
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification**: Tungsten: Immediate (acute) health hazard, Delayed (chronic) health hazard; thorium oxide: Delayed (chronic) health hazard
- SARA 313**
- Form R - Reporting requirements** : Thorium oxide 0.01-2  
**Supplier notification** : Thorium oxide 0.01-2
- State regulations** : **Massachusetts Substances**: The following components are listed: Tungsten;Thorium oxide  
**New Jersey Hazardous Substances**: The following components are listed: Tungsten;Thorium oxide  
**Pennsylvania RTK Hazardous Substances**: The following components are listed: Tungsten;Thorium oxide  
**WARNING**: This product contains a chemical known to the State of California to cause cancer.
- WHMIS (Canada)** : **These hazards relate to welding fumes (electrodes in use) and not to the electrodes as sold.**  
Class D-2A: Material causing other toxic effects (Very toxic).  
**CEPA Toxic substances**: None of the components are listed.  
**Canadian ARET**: None of the components are listed.  
**Canadian NPRI**: The following components are listed: Thorium dioxide  
**Alberta Designated Substances**: None of the components are listed.  
**Ontario Designated Substances**: None of the components are listed.  
**Quebec Designated Substances**: None of the components are listed.
- This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

## Section 16. Other Information

- Label requirements** : See Section 2.
- Hazardous Material Information System (U.S.A.)** : Health: 2\* Fire: 0 Reactivity: 0
- National Fire Protection Association (U.S.A.)** : Health: 2 Fire: 0 Reactivity: 0
- References** : - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - CRC Handbook of chemistry and physics, 67th edition. CRC Press inc., Boca Raton, Florida. - Manufacturer's Material Safety Data Sheet. ANSI Z400.5, MSDS Standard, 2004. ANSI Z49.1 Safety in Welding and Cutting, The American Welding Society, P.O. Box 351040, Miami, FL 33135. Canadian Standard Association, CSA W117.2, Code for Safety in Welding and Cutting, 2003.
- Abbreviations** : **NTP: National Toxicology program.**  
NTP 1: Known To Be Human Carcinogens.
- Responsible name** : Atrion Regulatory Services, Inc.
- Date of previous issue** : 09/30/2006
- Version** : 3

### Notice to reader

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