

From: [Troy Saylor](#)
To: [Hammond, Michelle](#)
Cc: [Nate Scott](#)
Subject: [External_Sender] RE: REQUEST FOR ADDITIONAL INFORMATION_Alliance Distribution
Date: Friday, August 20, 2021 11:29:17 AM
Attachments: [Alliance_XTRWeld-Brand_Tungsten_EWTh-2_V02curves.pdf](#)

Michelle, thank you for reaching out to us.

Here is my response to your (3) questions:

1. **Question 1**

- a. Alliance Distribution partners does not manufacturer this product nor does it modify it in any way, it arrives packaged and unchanged until it gets to our customers. Specifically, the product does not exceed 50mgs of thorium and because there is no modification at all under our possession, there is nothing to address.
- b. Mass of Thorium in each electrode varies by diameter of the product.
- c. AWS Chemistry recommendation or specification and actual results require thorium Th 90containing electrodes (AWS A5.12:2009 Eth-2 (WTh 20) ThO2)

2. **Question 2**

- a. I have legible copies of the label attached, including each size and package, containing no more than (10 tungsten electrode in each package). The product arrives from the overseas vendor this way in master cartons and remains un-changed.

3. **Question 3**

- a. Training will be provided annually to all staff located at the 720 Garvin Lane, Franklin, KY warehouse. Training will be performed by Troy Saylor or Nathan Scott
- b. This material is safe in the electrode form (though dust may potentially be hazardous in fabricating which we do not perform during our entire possession). No special radiation programs are needed. An SDS is available in each package

Please let me know if I should put this into another format for you or if anything else is needed.

Troy M Saylor

Vice President - Welding | Alliance Distribution | Ph. 615.675.7851 | Cell: 610.217.8849

From: Hammond, Michelle <Michelle.Hammond@nrc.gov>
Sent: Thursday, August 19, 2021 5:00 PM
To: Troy Saylor <troy.saylor@alliancemro.com>



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

.020" X 7"
10 pc Pack



Batch No.:
PN: WTH2020

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

Electrodes can have either a clean finish or a ground finish, clean finish electrodes have been chemically cleaned, while ground finish electrodes have been ground to a uniform size and have a polished surface, making them optimal for heat conduction.

For more Quality MIG & TIG Parts & Products, visit XTRWeld.com



Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

.040" X 7"
10 pc Pack



Batch No.:
PN: WTH2040

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

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Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

1/16" X 7"
10 pc Pack



Batch No.:
PN: WTH2062

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

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Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

3/32" X 7"
10 pc Pack



Batch No.:
PN: WTH2093

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

Electrodes can have either a clean finish or a ground finish, clean finish electrodes have been chemically cleaned, while ground finish electrodes have been ground to a uniform size and have a polished surface, making them optimal for heat conduction.

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Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

1/8" X 7"
10 pc Pack



Batch No.:
PN: WTH2125

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

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For more Quality MIG & TIG Parts & Products, visit XTRWeld.com



Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

5/32" X 7"
10 pc Pack



Batch No.:
PN: WTH2156

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

Electrodes can have either a clean finish or a ground finish, clean finish electrodes have been chemically cleaned, while ground finish electrodes have been ground to a uniform size and have a polished surface, making them optimal for heat conduction.

For more Quality MIG & TIG Parts & Products, visit XTRWeld.com



Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

3/16" X 7"
10 pc Pack



Batch No.:
PN: WTH2187

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

Electrodes can have either a clean finish or a ground finish, clean finish electrodes have been chemically cleaned, while ground finish electrodes have been ground to a uniform size and have a polished surface, making them optimal for heat conduction.

For more Quality MIG & TIG Parts & Products, visit XTRWeld.com



Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages



TUNGSTEN
GROUND
TIG (GTAW)
WELDING

2% Thoriated
ANSI/AWS A5.12M/A5.12:2009 EWTh-2

1/4" X 7"
10 pc Pack



Batch No.:
PN: WTH2250

XTRWeld Tungsten Electrodes used in the GTAW (TIG) welding application are made of Tungsten (W) or a Tungsten alloy; this is because tungsten has the highest melting temperature among pure metals at roughly 3,422 °C (6,192 °F). As a result, the electrode is not consumed during the welding process, though some erosion (called burn-off) can occur.

Electrodes can have either a clean finish or a ground finish, clean finish electrodes have been chemically cleaned, while ground finish electrodes have been ground to a uniform size and have a polished surface, making them optimal for heat conduction.

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Made in China
READ The Safety Warning on back & SDS

Front
2.00" Wide X 7" Tall
Fits all 10PC packages

Product "EWTh-2" Should be with RED Plastic and CLEAR Cover

MFG. For: Alliance Distribution Partners, LLC
XTRWeld.com



WARNING WARNING

Protect yourself and others. Read and understand this information. FUMES and GASES can be dangerous to your health. ARC RAYS can injure eyes and burn skin. ELECRTIC SHOCK can KILL.

- Before use read and understand the manufacturer's instructions, Material Safety Data Sheets (SDS), and your employers' safety practices.
- Keep your head out of the fumes.
- Use enough ventilation, exhaust at the arc, or both, to keep fumes away from your breathing zone and general area.
- Wear correct eye, ear and body protection.
- Do not touch live, electrical parts.

CALIFORNIA PROPOSITION 65: WARNING: This product contains chemicals including [Titanium Dioxide], which are known to the State of California to cause birth defects and cancer. For more information go to www.P65Warnings.ca.gov.

See American National Standard ANSI/ASCZ.49.1, Safety in Welding and Cutting, published by the American Welding Society 550 N.W. LEJEUNE Rd., P.O. Box 351040, Miami, FL 333135. OSHA Safety and Health Standards, 29 CFR1910, available from U.S. Government Printing Office, Washington DC 20402.

DO NOT REMOVE THIS INFORMATION



Front
2.00" Wide X 7" Tall
Fits all 10PC packages

Warning on Back
1.75" Wide X 7" Tall

Fits all 10PC packages



Thoriated Tungsten Electrodes

INTRODUCTION

Thoriated tungsten electrodes contain thorium, a radioactive material that can pose health and environmental risks at elevated exposure levels. The use of these electrodes is exempt from Nuclear Regulatory Commission (NRC) regulations.

Effective August 27, 2014, electrode manufacturers and importers need to possess a specific NRC license to distribute these electrodes. The license imposes requirements for labeling, quality control, reporting, and record keeping.

All persons shipping thoriated tungsten electrodes in the United States need to comply with Department of Transportation (DOT) regulations. DOT requires the thoriated tungsten electrodes to be properly packaged and labeled. The surface of the package must be monitored for radioactivity. For example, the US Postal Service requires the following label on the address side of the package:

“This package conforms to the conditions and limitations specified in 49 CFR 173.426 for radioactive material, excepted package—articles manufactured from natural uranium (or natural thorium), UN2909 and is within Postal Service activity limits for mailing.”

NATURE OF THE HAZARD

Thorium is a low-level radioactive material that primarily emits alpha particles as well as some beta and gamma radiation. These electrodes are normally sharpened by grinding as part of the standard procedure while preparing to perform gas tungsten arc welding (GTAW). Dust particles from this grinding process can cause internal radiation exposure if the dust is accidentally ingested or inhaled, so precaution is necessary. Concern regarding radiation exposure to the external body from these electrodes is minimal.

The risk of internal exposure during welding is negligible in most circumstances since the thoriated electrode is consumed at a very slow rate.

During the grinding of the thoriated tungsten electrodes, radioactive dust is created, posing the potential hazard of internal radiation exposure by inhalation or ingestion unless care is taken to control the dust.

HOW TO REDUCE EXPOSURE

- Choose thorium-free tungsten electrodes such as those containing cerium, lanthanum, yttrium, or zirconium.

- Read, understand, and follow all information in the Safety Data Sheet (SDS) for the selected tungsten electrode.
- Use a high-efficiency dust collection system to capture particles created during the grinding of electrodes or disturbance during housekeeping.
- Evaluate the ventilation system before acceptance and periodically thereafter to minimize personnel and environmental contamination.
- Develop and implement standard operating procedures for the use of thoriated tungsten electrodes, including proper procedures for storage, grinding, use, housekeeping and disposal.
- Provide training in the operation of the welding and grinding equipment, personal hygiene, and safety.

WHAT TO DO WITH THE COLLECTED DUST PARTICLES

- Regularly remove the dust generated by grinding.
- Properly dispose of the dust and spent electrodes in accordance with federal, state, and local regulations.

SUMMARY

Several of the information sources listed indicate that the risk of occupational exposure to radiation during storage, handling, and welding with thoriated tungsten electrodes is negligible where simple precautions are taken. Special care should be taken to control and collect dust from grinding these electrodes in order to

prevent a potential ingestion and inhalation exposure to radioactive dust particles resulting from this operation.

INFORMATION SOURCES

Nuclear Regulatory Commission (NRC). Code of Federal Regulations, Title 10 Energy, Part 40.13, available from the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401; telephone: 800-368-5642; web site: www.nrc.gov.

Department of Transportation (DOT), 49 Code of Federal Regulations, Title 49 Transportation, Part 173, available from the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401; telephone: 855-368-4200; web site: www.dot.gov.

United States Postal Service (USPS). Publication 52, Hazardous, Restricted, and Perishable Mail, Instruction 7A, Radioactive Materials, available from the USPS web site: www.usps.com.

Jankovic, J. T., W. S. Underwood, and G. M. Goodwin. 1999. Exposures from Thorium Contained in Thoriated Tungsten Electrodes. *American Industrial Hygiene Journal* 60: 384 – 389.

Oak Ridge National Laboratory (ORNL): Estimated Radiation Doses from Thorium and Daughters Contained in Thoriated Welding Electrodes, by L. M. McDowell-Boyer (ORNL/NUREG/TM-344). Oak Ridge, TN: ORNL, 1979.