

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Thallium Rotatable Sputtering Target

**Product Code:** TL-M-04-STR

**CAS Number:** 7440-28-0

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.

GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Hazards not otherwise classified No data available

GHS label elements, including precautionary statements

Hazard pictograms



GHS06 GHS08

Signal word Danger

Hazard statements

H300+H330 Fatal if swallowed or if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P284 [In case of inadequate ventilation] wear respiratory protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor  
P320 Specific treatment is urgent (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
WHMIS classification  
D1A - Very toxic material causing immediate and serious toxic effects  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
1  
0  
0  
Health (acute effects) = 1  
Flammability = 0  
Physical Hazard = 0  
Other hazards  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
7440-28-0 Thallium  
Identification number(s):  
EC number: 231-138-1  
Index number: 081-001-00-3

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
General information  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
No special measures required.  
If inhaled: Seek medical treatment in case of complaints.  
In case of skin contact: Generally the product does not irritate the skin.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
If swallowed:  
Do not induce vomiting; immediately call for medical help.  
Information for doctor  
Most important symptoms and effects, both acute and delayed:  
No data available  
Indication of any immediate medical attention and special treatment needed:

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Toxic metal oxide fume

Advice for firefighters

Protective equipment: No special measures required.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: Do not allow material to be released to the environment without official permits.

Methods and materials for containment and cleanup:

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Do not store together with oxidizing and acidic materials.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s) No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems: No further data; see section 7.

## Control parameters

Components with limit values that require monitoring at the workplace:

7440-28-0 Thallium (100.0%)

PEL (USA) Long-term value: 0.1 mg/m<sup>3</sup>  
as TI; Skin

REL (USA) Long-term value: 0.1 mg/m<sup>3</sup>  
as TI; Skin

TLV (USA) Long-term value: 0.02\* mg/m<sup>3</sup>  
as TI; \*inhalable fraction; Skin

EL (Canada) Long-term value: 0.1 mg/m<sup>3</sup>  
as TI; Skin

EV (Canada) Long-term value: 0.1 mg/m<sup>3</sup>  
watersoluble compounds, Skin

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Not required.

Use self-contained respiratory protective device in emergency situations.

Protection of hands: Not required.

Penetration time of glove material (in minutes) No data available

Eye protection: Safety glasses

Body protection: Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: No data available

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 303.5 °C (578 °F)

Boiling point/Boiling range: 1457 °C (2655 °F)

Sublimation temperature / start: No data available

Flammability (solid, gas) No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure at 473 °C (883 °F): 0.13 hPa

Density at 20 °C (68 °F): 11.85 g/cm<sup>3</sup> (98.888 lbs/gal)

Relative density No data available.

Vapor density N/A

Evaporation rate N/A  
Solubility in / Miscibility with  
Water: No data available  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity No data available  
Chemical stability Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions No dangerous reactions known  
Conditions to avoid No data available  
Incompatible materials: Oxidizing agents  
Hazardous decomposition products: Toxic metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity:  
Fatal if inhaled.  
Fatal if swallowed.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.  
LD/LC50 values that are relevant for classification: No data  
Skin irritation or corrosion: Powder: irritant effect  
Eye irritation or corrosion: Powder: irritant effect  
Sensitization: No sensitizing effects known.  
Germ cell mutagenicity: No effects known.  
Carcinogenicity: EPA-I: Data are inadequate for an assessment of human carcinogenic potential.  
Reproductive toxicity: No effects known.  
Specific target organ system toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure.  
Specific target organ system toxicity - single exposure: No effects known.  
Aspiration hazard: No effects known.  
Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Aquatic toxicity: No data available  
Persistence and degradability No data available  
Bioaccumulative potential No data available

Mobility in soil No data available

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Do not allow product to reach groundwater, water courses, or sewage systems, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, ADN, IMDG, IATA N/A

UN proper shipping name

DOT, ADN, IMDG, IATA N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class N/A

Packing group

DOT, IMDG, IATA N/A

Environmental hazards: N/A

Special precautions for user N/A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT): No

UN "Model Regulation": -

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements, including precautionary statements

Hazard pictograms

GHS06 GHS08

Signal word Danger

Hazard statements

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Precautionary statements

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National regulations  
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.  
All components of this product are listed on the Canadian Domestic Substances List (DSL).  
SARA Section 313 (specific toxic chemical listings)  
7440-28-0 Thallium  
California Proposition 65  
Prop 65 - Chemicals known to cause cancer Substance is not listed.  
Prop 65 - Developmental toxicity Substance is not listed.  
Prop 65 - Developmental toxicity, female Substance is not listed.  
Prop 65 - Developmental toxicity, male Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.  
Other regulations, limitations and prohibitive regulations  
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.  
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.