

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (5N) 99.999% Tris(diethylamido)(tert-butyylimido)tantalum(V)

Product Code: TA-OMX-05

CAS Number: 169896-41-7

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
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SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

OSHA HAZARDS: Combustible Liquid, Water Reactive, Corrosive

GHS CLASSIFICATION: Flammable liquids (category 3)

Substances which, in contact with water, emit flammable gases (category 2)

Skin corrosion (category 1B)

Serious eye damage (category 1)



Pictogram

Signal Word Danger

Hazard Statements

H226

Flammable liquid and vapor

H261

In contact with water releases flammable gas

H314

Causes severe skin burns and eye damage

Precautionary Phrases

P231 + P232

Handle under inert gas, protect from moisture

P280

Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310

Immediately call a POISON CENTER or a doctor/physician

P422

Store contents under inert gas

OTHER HAZARDS

Reacts violently with water.

POTENTIAL HEALTH EFFECTS

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissues of the mucous membranes and upper respiratory tract.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns.

Ingestion: May be harmful if swallowed.

NFPA 704 RATINGS (SCALE 0-4): Health: 3 Flammability: 2 Reactivity: 1 SPECIAL: WATER REACTIVE

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: C₁₆H₃₉N₄Ta

Molecular Weight: 468.47 g/mol

Synonyms: TBTDET, Tris(diethylamido) tert-butylimido tantalum

CHEMICAL NAME CAS# PURITY

Tert-butylimido tris(diethylamido) tantalum 169896-41-7 98+%

SECTION 4. FIRST AID MEASURES

GENERAL ADVICE: Consult a physician. Show this safety data sheet to the doctor in attendance.

Move out of dangerous area.

EYE EXPOSURE: Rinse thoroughly with plenty of water for at least 15 minutes. A victim may need help keeping their eyelids open. Seek immediate medical attention. Continue rinsing during transport to hospital.

SKIN EXPOSURE: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Seek medical attention.

INHALATION: Move victim into fresh air. If not breathing, give artificial respiration. Seek medical attention.

INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention.

SECTION 5. FIREFIGHTING MEASURES

EXTINGUISHING MEDIA:

Suitable Use dry chemical.

Unsuitable DO NOT USE WATER!

CONDITIONS OF FLAMMABILITY:

Flammable in the presence of a source of ignition when the temperature is above the flash point. May

burn in presence of air, or emit a flammable gas in the presence of water or water vapor. Keep away from heat/sparks/open flame/hot surface/air/water. No smoking.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS:

Carbon oxides, nitrogen oxides (NO_x), and Tantalum oxides

ADVICE FOR FIRE FIGHTERS

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

For personal protection see section 8.

ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage if safe to do so. Do not allow material to enter drains or streams.

METHODS AND MATERIALS

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

SECTION 7. HANDLING AND STORAGE

PERSONAL PRECAUTIONS

Avoid inhalation of vapor or mist.

Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic charge.

CONDITIONS FOR SAFE STORAGE

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Never allow product to get in contact with water during storage.

Handle and store under inert gas. Air sensitive.

INCOMPATIBILITIES:

Exposure to air, moisture.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

Contains no substances with occupational exposure limit values.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Use a full-face air-purifying respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards.

EYE/FACE PROTECTION: Wear chemical safety goggles, faceshield. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH or EN.

SKIN PROTECTION: Compatible chemical-resistant gloves. Inspect gloves before each use. Use proper glove removal technique to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

BODY PROTECTION: Complete suit protecting against chemicals, flame retardant antistatic protective

clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Pale yellow liquid
FORMULA MASS: 468.47g/mol
ODOR: Pungent smell
ODOR THRESHOLD: No data available
pH: Not available
MELTING POINT/ FREEZING POINT: not available
BOILING POINT: 95 °C @ 0.5 mmHg
FLASH POINT: 46 °C – closed cup
EVAPORATION RATE: No data available
UPPER/LOWER FLAMMABILITY/EXPLOSION LIMITS: no data available
VAPOR PRESSURE: no data available
VAPOR DENSITY: no data available
SPECIFIC GRAVITY: 1.252 g/ml at 25 °C
SOLUBILITY IN WATER: Reacts violently
PARTITION COEFFICIENT: N-OCTANOL/WATER: no data available
AUTO-IGNITION TEMPERATURE: no data available
DECOMPOSITION: No data available
VISCOSITY: No data available

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions.
POSSIBILITY OF HAZARDOUS REACTION: Will not polymerize. Reacts violently with water.
CONDITIONS TO AVOID: Heat, flame, and sparks. Exposure to moisture.
INCOMPATIBLE MATERIALS: Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: (formed under fire conditions) Carbon oxides, nitrogen oxides (NO_x), and Tantalum oxides

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: No data available.
SKIN CORROSIVE/IRRITANT: No data available
SERIOUS EYE DAMAGE/IRRITATION: No data available
RESPIRATORY OR SKIN SENSITIZATION: No data available
GERM CELL MUTAGENICITY: No data available
CARCINOGENICITY:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
REPRODUCTIVE TOXICITY: No data available

STOT-Single Exposure: No data available
STOT-Repeated Exposure: No data available
ASPIRATION HAZARD: No data available
ADDITIONAL INFORMATION:

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY: No data available
PERSISTENCE AND DEGRADABILITY: No data available
BIOACCUMULATIVE POTENTIAL: No data available
MOBILITY IN SOIL: No data available
OTHER ADVERSE EFFECTS: No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed waste disposal service to dispose of this material.
Dispose of contaminated packaging as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT, IATA, IMDG regulated.
Organometallic substance, liquid, water-reactive, flammable (tert-butyylimido tris(diethylamido) tantalum)
UN3399 Class 4.3(3) PG: II
Marine pollutant: No data available.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards:
Combustible liquid, water reactive, corrosive.
SARA 302/313 Components:
No chemicals in this material are subject to reporting requirements of SARA Title III, Section 302 or 313.
SARA 311/312 Hazards
Fire Hazard, Reactivity Hazard, Acute Health Hazard
Massachusetts Right to Know Components
No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know/New Jersey Right to Know Components
Tert-butyylimido tris(diethylamido)tantalum CAS# 169896-41-7
California Prop. 65 Components This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.