

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Tert-butylimido tris(diethylamido) tantalum**

FORMULA: $C_{16}H_{39}N_4Ta$

CAS NO: 169896-41-7

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

Intended Use: For R&D use only.

MANUFACTURER:

WONIK MATERIALS NORTH AMERICA LLC
N115 W19392 EDISON DRIVE
GERMANTOWN, WI 53022

PHONE: +1-262-293-0251

FAX: +1-262-253-1258

IN CASE OF TRANSPORTATION EMERGENCY CONTACT CHEM-TREC 1-800-424-9300

CHEM-TREC INTERNATIONAL: +1-703-741-5500

FOR TECHNICAL INFORMATION CONTACT: +1-262-293-0251

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

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

Hazard Statements

H226	Flammable liquid and vapor
H261	In contact with water releases flammable gas
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Precautionary Phrases

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P223	Do not allow contact with water
P231 + P232	Handle under inert gas, protect from moisture
P235	Keep cool
P280	Wear protective gloves/protective clothing/eye protection/face protection
P233	Keep container tightly closed
P240	Ground and bond container and receiving equipment
P241	Use explosion-proof equipment
P242	Use non-sparking tools
P243	Take action to prevent static discharges
P264	Wash hands thoroughly after handling
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
P402 + P233	Store in well-ventilated place. Keep container tightly closed
P422	Store contents under inert gas
P501	Dispose of content/containers to in accordance with local, regional, national, international regulation

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: 2

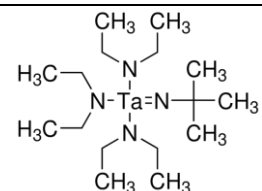
SPECIAL: WATER REACTIVE

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: C₁₆H₃₉N₄Ta

Molecular Weight: 468.47 g/mol

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



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.

Tert-butylimido tris(diethylamido) tantalum

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 AND PERSONAL PROTECTION

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

Contains no substances with occupational exposure limit values.

PERSONAL PROTECTIVE EQUIPMENT

Tert-butylimido tris(diethylamido) tantalum

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 (NOx), and Tantalum oxides

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: No data available.

SKIN CORROSIVE/IRRITANT: No data available

SEROUS 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.

SECTION 11 TOXICOLOGICAL DATA (Cont.)

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 DATA

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 TRANSPORTATION DATA

Organometallic substance, liquid, water-reactive, flammable (tert-butylimido tris(diethylamido) tantalum)

UN3399 Class 4.3(3) PG: II

Marine pollutant: No data available.

DOT, IATA, IMDG regulated.

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-butylimido 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.

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, Wonik Materials North America makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information. DATE PREPARED: 08/2018

SDS DEPT