

MATERIAL SAFETY DATA SHEET

24 HR. EMERGENCY PHONE # CHEM-TREC 1-800-424-9300

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SECTION 1 Product Identification

CHEMICAL NAME: Titanium (IV) t-butoxide
CAS #: 3087-39-6
FORMULA: Ti(OC₄H₉)₄
SYNONYM: Titanium (4+)2-methylpropan-2-olate

SECTION 2 Composition and Information on Ingredients

INGREDIENT:	CAS #	%	ACGIH (TWA)	OSHA (PEL)
Title Compound	3087-39-6	100	no data	no data

SECTION 3 Hazards Identification

EMERGENCY OVERVIEW: The liquid irritates the skin, eyes and respiratory system. Moisture will produce titanium oxide powder and t-butanol vapor which may cause severe eye irritation and drowsiness. May be harmful if swallowed.

PRIMARY ROUTES OF EXPOSURE: Inhalation, ingestion, contact with skin and eyes.

EYE CONTACT: If liquid contacts the eye, irritating titanium oxide may form. t-butanol vapor from hydrolyzed product may cause eye irritation.

SKIN CONTACT: : Dehydrating agent. Liquid may cause mild irritation of the skin.

INHALATION: Irritating to the respiratory tract. May cause headache, dizziness and drowsiness.

INGESTION: Ingestion may cause gastrointestinal distress, nausea, vomiting and headache.

CHRONIC HEALTH EFFECTS: No data is available for this product. In animal studies, t-butanol in high doses has acted as a reproductive effector.

ACUTE HEALTH EFFECTS: No data is available for this product. Titanium oxide hydrolysis product exhibits low toxicity. t-butanol causes severe eye irritation, drowsiness, and gastrointestinal distress.

SECTION 4 First Aid Measures

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

SKIN EXPOSURE: Wash affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

INHALATION: Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.

INGESTION: Seek medical assistance immediately. Keep the victim calm. Give the victim water (only if

conscious). Induce vomiting only if directed by medical personnel.

SECTION 5 Firefighting Measures

FLASH POINT: no data

AUTO IGNITION TEMPERATURE: no data

EXPLOSION LIMITS: no data

EXTINGUISHING MEDIUM: carbon dioxide, dry powder or foam.

SPECIAL FIREFIGHTING PROCEDURES: If involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: If involved in a fire this material may emit toxic organic fumes and titanium dust.

UNUSUAL FIRE OR EXPLOSION HAZARDS: No unusual fire or explosion hazards.

SECTION 6 Accidental Release Measures

SPILL AND LEAK PROCEDURES: Small spills can be absorbed into vermiculite or other suitable adsorbent. Sweep up the material and dispose of properly.

SECTION 7 Handling and Storage

HANDLING AND STORAGE: Store in a tightly sealed container in a dry place. If container is left open, product may absorb moisture from the atmosphere and release t-butanol vapor.

SECTION 8 Exposure Controls and Personal Protection

EYE PROTECTION: Always wear approved safety glasses w/side shields, or safety goggles, face shield when handling a chemicals substance in the laboratory.

SKIN PROTECTION: Chemical-resistant.

VENTILATION: If possible, handle the material in an efficient fume hood.

RESPIRATOR: If in form of fine dust and ventilation is not available a respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 19-10.134.

SECTION 9 Physical and Chemical Properties

COLOR AND FORM: colorless liquid

MOLECULAR WEIGHT:340.35

MELTING POINT (DEG. C.): no data

BOILING POINT: 70^o/2mm

VAPOR PRESSURE: no data

SPECIFIC GRAVITY: .89

SOLUBILITY IN WATER: reacts with water

SECTION 10 Stability and Reactivity

STABILITY: moisture sensitive liquid, (store cold)

HAZARDOUS POLYMERIZATION: No hazardous polymerization.
CONDITIONS TO AVOID: contact with moisture
INCOMPATIBILITY: water, mineral acids, halogens and strong oxidizing agents.
DECOMPOSITION PRODUCTS: carbon monoxide, carbon dioxide, titanium oxide and organic fumes.

SECTION 11 Toxicological Information

RTECS DATA: No information available in the RTECS files. t-butanol hydrolysis product: skin (rabbit) Draize: 500ul/24h, mild. Eye (rabbit) Draize: 100ul/24h, severe. Oral (rat) LD50: 2743mg/kg. Inhalation (rat) LC50: >10000ppm/4h. Intraperitoneal (mouse) LD50 399mg/kg. Oral (rabbit) LD50: 3559mg/kg. Inhalation (rat) TCLo (reprod): 2000.

MUTAGENIC EFFECTS: no data

TETRAOGENIC EFFECTS: no data

CARCINOGENIC EFFECTS: no data

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 Ecological Information

ECOLOGICAL INFORMATION: No information available

SECTION 13 Disposal Considerations

DISPOSAL: Dispose of in according to local state and federal regulations.

SECTION 14 Transportation Information

Non-hazardous

Non-hazardous

SECTION 15 Regulatory Information

TSCA: Listed in the TSCA inventory

SARA (TITLE 313): Title compound not listed

SECTION 16 Other Information

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, ProChem, Inc. 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.

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