



SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Titanium (IV) t-Butoxide**
PRODUCT NUMBER: 3689
CAS NUMBER: 3087-39-6
SYNONYMS: Titanium (4+)-2-methylpropan-2-olate
MANUFACTURER:

Prochem, Inc.
826 Roosevelt Road
Rockford, IL 61109

PHONE: 815-398-1788
FAX: 815-398-1810
TOLL FREE: 800-795-8788

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

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram



Signal Word

Warning

Hazard Statements

H226	Flammable liquid and vapor.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P362	Take off contaminated clothing and wash before reuse.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

HMIS CLASSIFICATION:

Health: 2 Fire: 2 Reactivity Hazard: 1

NFPA RATING:

Health: 2 Flammability: 2 Reactivity Hazard: 1

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.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: $Ti(OC_4H_9)_4$

Molecular Weight: 340.32

CHEMICAL NAME	CAS#	%
Titanium (IV) t-Butoxide	3087-39-6	100

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 to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.

INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: 47.2° C – Closed Cup

AUTO IGNITION TEMPERATURE: Not available

EXPLOSION LIMITS: Not available

EXTINGUISHING MEDIUM: For small fires, use alcohol foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use flooding quantities of water applied as a mist or spray; solid streams of water may be ineffective. Cool all containers with flooding quantities of water.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Carbon oxides and tin oxides

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Avoid breathing vapors, mist, or gas. Vapors can accumulate in low areas.

ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains or allowing to be released into the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Small spills can be absorbed into vermiculite or other suitable absorbent and swept up into proper container for disposal.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Keep away from sources of ignition – No smoking. Take measures to prevent the build up of electrostatic charge.

CONDITIONS FOR SAFE STORAGE: Store in cool, dry, and well-ventilated area. If container is left open, product may absorb moisture from the atmosphere and release t-butanol vapor. Store under inert gas.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS: Contains no substances with occupational exposure limit values.

EYE PROTECTION: Wear chemical safety glasses or goggles and face shield.

SKIN PROTECTION: Wear nitrile or rubber gloves, apron, or lab coat.

VENTILATION: Provide local exhaust, preferably mechanical.

RESPIRATOR: Use an approved respirator.

ADDITIONAL PROTECTION: Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Colorless liquid

ODOR: Not available

MOLECULAR WEIGHT: 340.32

BOILING POINT: 70° C @ .2mm

MELTING POINT: Not available

SPECIFIC GRAVITY: 0.89 gm/ml

VAPOR DENSITY: No data available

SOLUBILITY: Reacts with water

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Heat, flames, sparks, and contact with moisture.

INCOMPATIBILITY: Strong oxidizing agents, water, mineral acids, and halogens

DECOMPOSITION PRODUCTS: Titanium oxides and carbon oxides

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: Draize Test skin – rabbit – 5,000 μ L – 24h – Mild irritation. Draize Test eye – rabbit – 100 μ L -24h – Severe irritation. LD50 Oral – rat – 2,743mg/kg. LC50 Inhalation – rat - >10,000ppm 4h. LD50 Intraperitoneal – mouse – 399mg/kg. LD50 Oral – rabbit – 3,559mg/kg. TCLo(reprod) Inhalation – rat – 2000.

CARCINOGENIC EFFECTS: No components of this product present at levels greater than or equal to 0.1% is identified a carcinogen.

MUTAGENIC EFFECTS: Not available

TETRATOGENIC EFFECTS: Not available

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

SECTION 12 ECOLOGICAL DATA

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

DOT: UN1993 Flammable liquids, n.o.s. (Titanium (IV) t-butoxide) CLASS 3 PG III	IATA: UN1993 Flammable liquid, n.o.s. (Titanium (IV) t-butoxide) CLASS 3 PG III
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Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

TSCA: Listed in the TSCA inventory
DSCL (EEC): Listed on the DSCL inventory
SARA 302/304: Not Listed
SARA 311/312: Fire Hazard, Acute Health Hazard
SARA (TITLE 313): Not Listed
CALIFORNIA PROP. 65: Not Listed
PENNSYLVANIA RIGHT TO KNOW: Titanium (IV) t-butoxide
NEW JERSEY RIGHT TO KNOW: Titanium (IV) t-butoxide
WHMIS CANADA: 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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