SECTION 1            PRODUCT AND COMPANY INFORMATION

PRODUCT NAME:   Titanium (IV) Ethoxide
PRODUCT NUMBER: 3697
CAS NUMBER: 3087-36-3
SYNONYMS:   Titanium ethanolate in isopropyl alcohol. Tetraethoxytitanate, Tetraethyl titanate, tetraethyl orthotitanate

MANUFACTURER:
Prochem, Inc.  PHONE: 815-398-1788
826 Roosevelt Road  FAX: 815-398-1810
Rockford, IL  61109  TOLL FREE: 800-795-6788

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.
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+P312  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician If you feel unwell.
SECTION 2  HAZARDS IDENTIFICATION (Cont.)

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

Take off contaminated clothing and wash before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

HMIS CLASSIFICATION:
- Health: 3
- Fire: 3
- Reactivity Hazard: 1

NFPA RATING:
- Health: 3
- Flammability: 3
- Reactivity Hazard: 1

EYE CONTACT: Causes serious eye irritation.

SKIN CONTACT: Causes severe skin burns.

INHALATION: Irritating to the nose, mucous membranes, and respiratory tract.

INGESTION: Harmful if swallowed.

SECTION 3  COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Chemical Formula</th>
<th>Molecular Weight</th>
<th>CAS Number</th>
<th>Percent Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium (IV) Ethoxide</td>
<td>C₈H₂₀O₄Ti</td>
<td>228.11</td>
<td>3087-36-3</td>
<td>85%</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>C₃H₈O</td>
<td>60.1</td>
<td>67-63-0</td>
<td>5-15%</td>
</tr>
</tbody>
</table>

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.

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: 28°C

AUTO IGNITION TEMPERATURE: 750°F (Isopropanol)

EXPLOSION LIMITS: 2.5-12% (Isopropanol). Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

EXTINGUISHING MEDIUM: Use Carbon dioxide, alcohol resistant foam, or dry chemical. Do NOT use 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: Titanium oxides, carbon oxides, and organic vapors.

SECTION 6  ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Avoid the formation of dust. Avoid breathing vapors, mist, gas, or dust. Remove all sources of ignition. Beware of vapors collecting to form explosive concentrations. 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: Use neutralizing agent. Sweep up and place in suitable container for proper disposal.
SECTION 7  HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Avoid contact with skin and eyes. Use with adequate ventilation. Avoid formation of dusts and aerosols. Keep away from sources of ignition – no smoking. Take measures to prevent the buildup of electrostatic charge. Fumes can combine with air to form explosive mixture.

CONDITIONS FOR SAFE STORAGE: Store in cool, dry, and well-ventilated area. Store under dry inert gas. This product is moisture sensitive – protect from humidity and water.

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, and a complete suit protecting against chemicals.

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: Pale Yellow to clear viscous liquid

ODOR: Alcohol like

ODOR THRESHOLD: No data available

BOILING POINT: 122°C

MELTING POINT: -40°C

SPECIFIC GRAVITY: 1.107 gm/ml

SOLUBILITY: Reacts with water

SECTION 10  STABILITY AND REACTIVITY

STABILITY: Moisture sensitive liquid

HAZARDOUS POLYMERIZATION: Vapors may form explosive mixture with air.

CONDITIONS TO AVOID: Keep away from moisture, heat and sources of ignition including open flame and electrostatic discharge.

INCOMPATIBILITY: Oxidizing agents, water, moisture, mineral acids, alkali metals, acid chlorides, and halogens.

DECOMPOSITION PRODUCTS: Carbon oxides, titanium oxides, and organic vapors.

SECTION 11  TOXICOLOGICAL DATA


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

CHRONIC TOXICITY: Not available

RTECS: No data

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

SECTION 12  ECOLOGICAL DATA

No information 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.
CLASS 3
PG III

**IATA:** UN1993
Flammable liquid, n.o.s.
CLASS 3
PG III

Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

**TSCA:** Listed in the TSCA inventory

**SARA 302/304:** Not Listed

**SARA 311/312:** Fire Hazard, Acute Health Hazard

**SARA (TITLE 313):** Not Listed

**CALIFORNIA PROP. 65:** Not Listed

**MASSACHUSETTS RIGHT TO KNOW COMPONENTS:** No components are subject to the Massachusetts Right to Know Act.

**NEW JERSEY RIGHT TO KNOW COMPONENTS:** Titanium(IV Ethoxide

** Pennslyvania Right to Know Components:** Titanium(IV Ethoxide

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.

**DATE PREPARED:** 05/15

SDS DEPT.