Section 1 - Product and Company Information

Product Name                       TITANIUM DIISOPROPOXIDE
                                      BIS(ACETYL- ACETONATE), 75 WT %
                                      SOLN IN 2-PROPA NONL
Product Number                     325252
Brand                              ALDRICH

Company                            Sigma-Aldrich
Street Address                     3050 Spruce Street
City, State, Zip, Country         SAINT LOUIS MO 63103 US
Technical Phone:                   314 771 5765
Emergency Phone:                   414 273 3850 Ext. 5996
Fax:                               800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name                          CAS #       SARA 313
TITANIUM DIISOPROPOXIDE                 None                  No
BIS(2,4-PENTANE-DIONATE), 75 WT. %      None                  No
SOLN. IN 2-PROPA NONL

Ingredient Name                         CAS #       Percent   SARA 313
TITANIUM DIISOPROPOXIDE                 17927-72-9  >= 70                  No
BIS(2,4-PENTANE-DIONATE)                None                  None
                                      <= 80                  No
2-PROPANOL                              67-63-0     >= 20     Yes
                                      <= 30                  No

Formula                                 C16H28O6Ti

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Irritant.
Irritating to eyes, respiratory system and skin. Risk of serious
damage to eyes.
Target organ(s): Kidneys. Nerves.

HMIS RATING

HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 0

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures
ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS
Flammable Hazards: Yes

EXPLOSION HAZARDS
Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT
53.6 °F  12 °C   Method: closed cup

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors.
Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage
HANDLING
User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS
Moisture sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Government approved respirator. 
Hand: Compatible chemical-resistant gloves. 
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: Clear liquid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Color: Orange</td>
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<tr>
<td>Molecular Weight</td>
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<td>pH</td>
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<td>Freezing Point</td>
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<td>Volatile%</td>
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<td>Explosion Limits</td>
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<td>Solubility</td>
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</table>
Section 10 - Stability and Reactivity

STABILITY
Stable: Stable. 
Conditions of Instability: May decompose on exposure to moist air or water. 
Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Titanium/titanium oxides.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation. 
Skin Absorption: May be harmful if absorbed through the skin. 
Eye Contact: Causes eye irritation. 
Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. 
Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)
Central nervous system. Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE
May liberate 2,4-pentanedione upon decomposition. 
2,4-Pentanedione has the following toxicological hazards: toxic, irritant, neurological hazard, teratogen, possible mutagen, target organ - thymus. In humans, 2,4-pentanedione is reported to cause contact dermatitis and contact urticaria.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Isopropanol [or] Isopropyl alcohol 
UN#: 1219 
Class: 3 
Packing Group: Packing Group II 
Hazard Label: Flammable liquid 
PIH: Not PIH

IATA
Proper Shipping Name: Isopropanol solution
IATA UN Number: 1219
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
Symbol of Danger: F Xi
Indication of Danger: Highly Flammable. Irritant.
R: 11 36/37/38 67
Risk Statements: Highly flammable. Irritating to eyes, respiratory system and skin. Vapors may cause drowsiness and dizziness.
S: 16 24/25 26
Safety Statements: Keep away from sources of ignition - no smoking. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US CLASSIFICATION AND LABEL TEXT
Risk Statements: Irritating to eyes, respiratory system and skin. Risk of serious damage to eyes.
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
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. Sigma-Aldrich Inc., 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 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.