# *MATERIAL SAFETY DATA SHEET*

SHOWLAND GROUP LIMITID

## SECTION 1 - IDENTIFICATION OF SUBSTANCE
## TETRA-ISOPROPYL TITANATE

- **Product details: Tetra-Isopropyl Titanate**
- **Trade name: Tetra-Isopropyl Titanate**
- **CAS-No. : 546-68-9**
- **Manufacturer/Supplier:**

  **SHOWLAND GROUP LIMITED**
  Rm2118, No.553, Wensan road, Hangzhou, China

- **EMERGENCY NUMBER:**
- **TEL: 86-571-88920516**
- **FAX: 86-571-88920516**
  **Information department: Health, Safety and Environmental Department**
  **Emergency information:**
  **During normal hours the Health, Safety and Environmental Department.**
  **After normal hours call 86-571-88920516**

## SECTION 2 - COMPOSITION/DATA ON COMPONENTS
## TETRA-ISOPROPYL TITANATE

**Substances**

**Synonyms : Titanium tetraisopropoxide, Iso-propyl titanate, Titanium tetraisopropanolate, Titanium tetraisopropylate,Tetraisopropoxytitanium(IV), Tetraisopropanolatotitanium, Tetrakis(isopropoxy) titanium, Titanium(IV) i-propoxide, Isopropyl titanate, Tetraisopropyl orthotitanate, Orthotitanic acid tetraisopropyl ester, Isopropyl titanate(IV), Titanic acid tetraisopropyl ester, Isopropyltitanate, Titanium(IV) isopropoxide, Tetraksi(isopropanolato) titanium, Titanic acid isopropyl ester, Ttanic acid tetraisopropyl ester, Titanium isopropoxide, Titanium isopropylate, Tetrakis(1-methylethoxy)titanium**

| | |
|---|---|
| **Formula :** | **C12H28O4Ti** |
| **Molecular weight :** | **284,22 g/mol** |
| **CAS-No. :** | **546-68-9** |
| **EC-No. :** | **208-909-6** |

## SECTION 3 - HAZARDS IDENTIFICATION

**Emergency Overview**
**OSHA Hazards**
**Combustible Liquid, Irritant**
**HMIS Classification**
**Health Hazard: 2**
**Flammability: 2**
**Physical hazards: 0**
**NFPA Rating**
**Health Hazard: 2**
**Fire: 2**
**Reactivity Hazard: 0**
**Potential Health Effects**
**Inhalation May be harmful if inhaled. Causes respiratory tract irritation.**
**Skin May be harmful if absorbed through skin. Causes skin irritation.**
**Eyes Causes eye irritation.**
**Ingestion May be harmful if swallowed.**

## SECTION 4 - FIRST AID MEASURES
## TETRA-ISOPROPYL TITANATE

**General advice**
**Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.**
**If inhaled**
**If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.**
**In case of skin contact**
**Wash off with soap and plenty of water. Consult a physician.**
**In case of eye contact**
**Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.**
**If swallowed**
**Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.**

## SECTION 5 - FIRE FIGHTING MEASURES
## TETRA-ISOPROPYL TITANATE

**Flammable properties**

**Flash point 45 ℃ - closed cup**

**Ignition temperature no data available**
**Suitable extinguishing media**
**For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.**
**Special protective equipment for fire-fighters**
**Wear self contained breathing apparatus for fire fighting if necessary.**
**Further information**
**Use water spray to cool unopened containers.**

## SECTION 6 - ACCIDENTAL RELEASE MEASURES
## TETRA-ISOPROPYL TITANATE

**Personal precautions**
**Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.**
**Environmental precautions**
**Do not let product enter drains.**
**Methods for cleaning up**
**Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.**

## SECTION 7 - HANDLING AND STORAGE
## TETRA-ISOPROPYL TITANATE

**Handling**
**Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.**
**Flash back possible over considerable distance. Container explosion may occur under fire conditions. Keep away**
**from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.**
**Storage**
**Handle under nitrogen, protect from moisture. Store under nitrogen. Keep**

**container tightly closed in a dry and well-ventilated place. Store in cool place. Hydrolyses readily.**

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION
## TETRA-ISOPROPYL TITANATE

**Contains no substances with occupational exposure limit values.**
**Personal protective equipment**
**Respiratory protection**
**Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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 such as NIOSH (US) or CEN (EU).**
**Hand protection**
**Handle with gloves.**
**Eye protection**
**Safety glasses**
**Skin and body protection**
**Choose body protection according to the amount and concentration of the dangerous substance at the work place.**
**Hygiene measures**
**Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.**

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES
## TETRA-ISOPROPYL TITANATE

**Appearance**
**Form liquid clear**
**Colour Colorless to light yellow**
**Safety data**
**pH no data available**
**Melting point 14 ℃ (57 ℉)**
**Boiling point 104 ℃ (219 ℉) at 13 hPa (10 mmHg)**
**232 ℃ (450 ℉) at 1,013 hPa (760 mmHg)**
**Flash point 45 ℃ - closed cup**
**Ignition temperature no data available**
**Lower explosion limit no data available**
**Upper explosion limit no data available**

**Density** **0.970 g/cm3**
**Water solubility** **no data available**

## SECTION 10 - STABILITY AND REACTIVITY
## TETRA-ISOPROPYL TITANATE

**Storage stability**
**May decompose on exposure to moist air or water. Stable under recommended storage conditions.**
**Conditions to avoid**
**Heat, flames and sparks.**
**Materials to avoid**
**Strong oxidizing agents, Strong acids Hazardous decomposition products**
**Hazardous decomposition products formed under fire conditions. - Carbon oxides, Titanium/titanium oxides**
**Hazardous reactions**
**Vapours may form explosive mixture with air.**

## SECTION 11 - TOXICOLOGICAL INFORMATION
## TETRA-ISOPROPYL TITANATE

**Acute toxicity**
**LD50 Oral - rat - 7,236 mg/kg**
**LD50 Dermal - rabbit - > 15.5 g/kg**
**Irritation and corrosion**
**Skin - rabbit - Mild skin irritation - 24 h**
**Eyes - rabbit - Eye irritation - 24 h**
**Sensitisation**
**no data available**
**Chronic exposure**
**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.**
**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.**

**Signs and Symptoms of Exposure**

**To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.**
**Potential Health Effects**
**Inhalation May be harmful if inhaled. Causes respiratory tract irritation.**
**Skin May be harmful if absorbed through skin. Causes skin irritation.**
**Eyes Causes eye irritation.**
**Ingestion May be harmful if swallowed.**
**Additional Information**
**RTECS: NT8060000**

## SECTION 12 - ECOLOGICAL INFORMATION
## TETRA-ISOPROPYL TITANATE

**Elimination information (persistence and degradability) no data available**
**Ecotoxicity effects no data available**
**Further information on ecology no data available**

## SECTION 13 - DISPOSAL CONSIDERATIONS
## TETRA-ISOPROPYL TITANATE

**Product**
**This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.**
**Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.**
**Contaminated packaging**
**Dispose of as unused product.**

## SECTION 14 - TRANSPORT INFORMATION
## TETRA-ISOPROPYL TITANATE

**DOT (US)**
**UN-Number: 2413 Class: 3 Packing group: III**
**Proper shipping name: Tetrapropylorthotitanate (Titanium tetraisopropanolate)**
**Marine pollutant: No**
**Poison Inhalation Hazard: No**

**IMDG**
**UN-Number: 2413 Class: 3 Packing group: III EMS-No: F-E, S-D**
**Proper shipping name: TETRAPROPYL ORTHOTITANATE (Titanium tetraisopropanolate)**
**Marine pollutant: No**

**IATA**
**UN-Number: 2413 Class: 3 Packing group: III**
**Proper shipping name: Tetrapropyl orthotitanate (Titanium tetraisopropanolate)**

## SECTION 15 - REGULATORY INFORMATION
## TETRA-ISOPROPYL TITANATE

**F OSHA Hazards**
**Combustible Liquid, Irritant**
**TSCA Status**
**On TSCA Inventory**
**DSL Status**
**All components of this product are on the Canadian DSL list.**
**SARA 302 Components**
**SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**
**SARA 313 Components**
**SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**
**SARA 311/312 Hazards**
**Fire Hazard, Acute Health Hazard**
**Massachusetts Right To Know Components**
**No components are subject to the Massachusetts Right to Know Act.**
**Pennsylvania Right To Know Components**

**Titanium tetraisopropanolate**
**CAS-No. 546-68-9**
**Revision Date**

**New Jersey Right To Know Components**

**Titanium tetraisopropanolate**
**CAS-No. 546-68-9**
**Revision Date**

**California Prop. 65 Components**
**This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.**

## SECTION 16 - ADDITIONAL INFORMATION
## TETRA-ISOPROPYL TITANATE

# *MATERIAL SAFETY DATA SHEET*

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**The information provided in this Safety Data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.**