

**1. Identification of the substances/ mixture and of the company/ undertaking****1.1 Product Identifiers**

Product Code GRM4525  
Product Name Titanium (IV) butoxide

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Produced by HiMedia Laboratories Pvt. Ltd.  
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**1.4 Emergency Tel. No.**

Emergency Tel.No. Please contact the regional HiMedia representation in your country

**2. Hazards Identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

Flammable liquids (Category 3)  
Skin corrosion/irritation (Category 2)  
Serious eye damage/eye irritation (Category 1)  
Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3)  
Specific target organ toxicity, single exposure; Narcotic effects (Category 3)

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Flammable.  
Irritating to respiratory system and skin  
Risk of serious damage to eyes.  
Vapours may cause drowsiness and dizziness.

**2.2 Label elements****Labelling according Regulation (EC) No 1272/2008 [CLP]**

Pictogram



Signal word Warning

Hazard Statement(s)

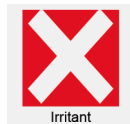
H226 Flammable liquid and vapour  
H315 Causes skin irritation  
H318 Causes serious eye damage  
H335 May cause respiratory irritation  
H336 May cause drowsiness or dizziness

Precautionary Statement(s)

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**According to European Directive 67/548/EEC as amended.**

Symbol(s)



R-Phrase(s)

- R10 Flammable.  
R37/38 Irritating to respiratory system and skin  
R41 Risk of serious damage to eyes.  
R67 Vapours may cause drowsiness and dizziness.

S-Phrase(s)

- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S39 Wear eye/lace protection.

2.3 Other hazards - none

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### 3. Composition/Information on Ingredients

#### 3.1 Substances

Synonym : Orthotitanic acid tetrabutylester; TNBT; TBT organic titanate; Tetrabutyl titanate

Molecular Formula  $C_{16}H_{36}O_4Ti$

Molecular Weight. 340.32

Component		Concentration
Titanium (IV) butoxide		
CAS-No.	5593-70-4	
EC-No.	227-006-8	

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### 4. First Aid Measures

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

##### 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

Never give anything by mouth to an unconscious person. Rinse mouth with water. consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

No data available

#### 4.3 Indication of immediate medical attention and special treatment needed

No data available

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### 5. Fire Fighting Measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Titanium/titanium oxides

#### 5.3 Precautions for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## 5.4 Further information

No data available

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## 6 Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see Section 13.

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## 7 Handling and Storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for preventive fire protection.

### 7.3 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended Storage Temperature : Store below 30°C

### 7.3 Specific end uses

No data available

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## 8 Exposure Controls/Personal Protection

### 8.1 Control parameters

Components with workplace control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### Personal protective equipment

##### Hygiene measure

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands face after working with the substance

##### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (Without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

##### Body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific work place.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK(EN 14387) respirator cartridges as a backup to the 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).

##### Environment exposure controls

Do not empty into drains

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## 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	Colourless to yellow liquid
Odour	No data available
Odour Threshold	No data available
Odour Threshold	No data available
pH	No data available
Melting/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	No data available
Water Solubility	No data available
Partition coefficient: n-octanol/Water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

### 9.2 Other safety information

No data available

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## 10 Stability and Reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

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## 11 Toxicological Information

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

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.

#### Reproductive toxicity

No data available

#### Specific target organ toxicity- single exposure

No data available

#### Aspiration hazard

No data available

## Potential Health Effects

### Inhalation.

Refer Section 2

### Skin

Refer Section 2

### Eyes

Refer Section 2

### Ingestion

Refer Section 2

## Additional Information

RTECS : XR1585000

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## 12 Ecological Information

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

No data available

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## 13 Disposal Considerations

### 13.1 Waste treatments methods

#### Product

Offer surplus and non-recyclable solutions to a licenced disposal company. Contact a licenced professional waste disposal service to dispose of this material.

### 13.2 Contaminated packaging

Dispose of as unused product.

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## 14 Transport Information

### 14.1 UN-No.

ADR/RID: 1993C      IMDG: 1993C      IATA: 1993C

### 14.2 UN proper shipping name

ADR/RID            : Titanium (IV) butoxide

IMDG                : Titanium (IV) butoxide

IATA                 : Titanium (IV) butoxide

### 14.3 Transport hazard class(es)

ADR/RID: 3      IMDG: 3      IATA: 3

### 14.4 Packaging group

ADR/RID: 3      IMDG: 3      IATA: 3

### 14.5 Environmental hazards

ADR/RID: No      IMDG: Marine Pollutant:No      IATA: No

### 14.6 Special precautions for use

No data available

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## 15 Regulatory Information

This safety datasheet complies with the requirements of Regulation(EC) No.1907/2006

### 15.1 Safety health and environment regulations/legislation specific for the substance or mixture

No data available

## **15.2 Chemical Safety Assessment**

No data available

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## **16 Other Information**

### **Further information**

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