



## Safety Data Sheet (SDS)

Revision / Review Date: 5/06/14

### 1. Chemical Product and Company Identification

Product Name: TiO<sub>2</sub>/Titanium Dioxide  
Distributed By: HB Chemical  
1665 Enterprise Parkway  
Twinsburg Oh 44087  
Phone - 330-920-8023

MSDS Prepared By (w Suppliers Input): HB Chemical  
Chemical Name / Family: Titanium Dioxide  
CAS No. 13463-67-7  
REACH No.: 01-2119489379-17-xxxx  
Product Use: White pigment for application in following industries:  
Coatings, plastics, printing inks, paper, man-made fibers, glass,  
vitreous enamels, ceramic products, textile, textile, rubber,  
cement, chemical industry.

OSHA Status Not Hazardous

For emergency health, safety, and environmental information, calls 330-920-8023  
For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

### 2. Hazard(s) Identification

#### Classification of the substance

#### Classification:

The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:

EU CLP 1272/2008	
Hazard classes/Hazard categories	Hazard statement
N/A	N/A

For full text of H- phrases: see section 2.2.

67/548/EEC	
Hazards characteristics	R-Phrases
N/A	N/A

The most important adverse physicochemical effects: Not applicable.  
The most important adverse human health effects: Not applicable.  
The most important adverse environmental effects: Label elements-Not applicable.  
Other hazards-Not applicable.

### 3. Composition / Information on Ingredients

Substance/Mixture: Substance

Ingredients:

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Titanium dioxide	N/A	13463-67-7	236-675-5	>87

### 4. First Aid Measures

Inhalation: Move to a fresh air atmosphere. In case of persistent symptoms, consult a doctor.

Eyes: Rinse immediately with plenty of water. If irritation persists, seek medical attention.

Skin: Wash with soap and water

Ingestion: No adverse health effects anticipated by this route, however, in the event of ingestion, increase intake of liquid in order to flush from the body. In case of persistent symptoms, consult a doctor.

### 5. Fire-Fighting Measures

Extinguishing Media: Use any media appropriate for combustible material in the area.

Special Fire Fighting Procedures: Usual protective equipment for fire fighters.

Specific risks: Product is inert non-flammable and non-combustible.

Special intervention methods: Product is inert non-flammable and non-combustible

### 6. Accidental Release Measures

Personal precautions: Avoid generation of dust. Ensure adequate ventilation. Wear personal protective equipment.

Environmental Precautions: Prevent run-off from entering ground, storm sewers and ditches which lead to natural waterways.

Cleaning Methods: Use any feasible mechanical means (e.g. vacuum, sweeping) but avoid dusting during clean-up. The product can cause slippery conditions if wet. Even at low concentration, the product renders the discharge in liquid effluent highly visible.

## 7. Handling and Storage:

Precautions for safe handling:

Protective measures:

Avoid raising dust. Handling systems and areas should be operated in such a way as to minimize exposure to dust.

Advice on general occupational hygiene:

Avoid raising and breathing dust. Observe good industrial hygiene practice for chemical handling.

Precautions:

Local exhaust ventilation may be necessary. Handle minimizing dust. Take precautionary measures against static discharges.

Advice on usage:

Manual handling guidelines should be adhered to when handling sacks.

**Warning:**

At the final stage of production, titanium dioxide product is packaged at temperatures of approximately 100 to 120°C (212 to 248°F). The material may stay hot for a long time depending on ambient temperatures and inventory storage practices. Due to the potential of elevated pigment temperature, caution should be used while handling pigment and in solvent applications. Each work environment must be assessed to determine hazards.

Conditions for safe storage,  
including any incompatibilities:

Packaging materials: No special requirements.  
Storage condition: Stored in a cool, dry, ventilated area.  
Further information: Use original container. Protect against physical damage; observe all warnings and precautions listed for the product.

Specific end use(s):

Not applicable.

## 8. Exposure Controls / Personal Protection

Control parameters:

Occupational exposure limits: OEL respirable dust: 4 mg/m<sup>3</sup> Total inhalable dust: 10 mg/m<sup>3</sup>

Additional exposure limits under the conditions of use:

Not available.

DNEL/DMEL and PNEC-Values:

Not available.

Exposure Controls:

Production facilities should be provided with running drinking water, local and general aspiration system. In facilities, where titanium dioxide is handled, eating and food storage are not permitted.

Protective equipment:

<u>Respiratory protection:</u>	A respirator must be used if the dust concentration is likely to exceed the occupational exposure limit. An approved dust respirator is recommended as appropriate depending on dust levels and other workplace factors.
<u>Skin protection:</u>	Respect main rules concerning the protection clothes for chemicals handling.
<u>Hand protection :</u>	Glove material: Use protective gloves according to EN374 to prevent skin contact with dust., Break through time: > 60 min
<u>Environmental exposure controls:</u>	Do not allow material to contaminate ground water system.
<u>Eye protection:</u>	Wear dust-proof goggles, (protection class 5) according to EN 166.
<u>Hygiene Measures:</u>	Individuals having sensitive skin may find it beneficial to use a barrier cream or moisturizer when excessive or prolonged contact with the skin is likely.
<u>Environmental exposure controls:</u>	It is recommended that the exhaust air of the air-conditioning is filtered off in bag filters.

## 9. Physical and Chemical Properties

<u>Appearance:</u>	Powdered solid
<u>Colour:</u>	White
<u>Odour:</u>	Odourless
<u>Odour threshold :</u>	Not available
<u>pH:</u>	Not determined
<u>Melting point/range (°C):</u>	>1800°C
<u>Boiling point/range (°C):</u>	Not determined
<u>Flash point (°C):</u>	Not applicable
<u>Evaporation rate:</u>	Not determined
<u>Flammability (solid, gas):</u>	Not applicable
<u>Ignition temperature (°C):</u>	Not applicable
<u>Upper/lower flammability/explosive limits:</u>	Not determined
<u>Vapour pressure (20°C):</u>	Not applicable
<u>Vapour density:</u>	Not applicable
<u>Relative Density (25°C):</u>	Anatase 3.8 g/cm <sup>3</sup> Rutile 4.2 g/cm <sup>3</sup>

<u>Bulk density (kg/m<sup>3</sup>):</u>	500-900kg/cm <sup>3</sup>
<u>Water solubility (g/l) at 20°C:</u>	Practically insoluble
<u>n-Octanol/Water (log Po/w):</u>	Not applicable
<u>Auto-ignition temperature:</u>	Not applicable
<u>Decomposition temperature:</u>	Not applicable
<u>Viscosity, dynamic (mPa s):</u>	Not applicable
<u>Explosive properties:</u>	Not applicable
<u>Oxidising properties:</u>	Not applicable
<u>Other information</u>	
<u>Fat solubility(solvent– oil to be specified):</u>	Insoluble
<u>Surface tension:</u>	Not applicable
<u>Dissociation constant in water( pKa):</u>	Not applicable
<u>Oxidation-reduction Potential :</u>	Not available

## 10. Stability and Reactivity

<u>Reactivity:</u>	The substance is stable under normal storage and handling conditions.
<u>Chemical Stability:</u>	This product is stable under normal conditions.
<u>Possibility of hazardous reactions:</u>	Under normal conditions, not hazardous reactions will occur.
<u>Conditions to Avoid:</u>	The substance is amphoteric (exhibits characteristics of very weak acid and weak base). Reducible, reacts with halogens, interreacts with ammonia and hydrogen peroxide. Reacting with H <sub>2</sub> O <sub>2</sub> generates ortho-titanic acid H <sub>4</sub> TiO <sub>4</sub> (of yellow color). When heated with NH <sub>3</sub> generates TiN. When melted or agglomerated with oxides, metal carbonates titanates and double oxides are generated. With hydrogen, carbon, active metals (magnesium, calcium, sodium) TiO <sub>2</sub> when heated is reduced to lower oxides. When heated with chlorine in the presence of reducing agents (coal) generates TiCl <sub>4</sub> .
<u>Incompatible materials:</u>	None reasonably foreseeable.
<u>Hazardous decomposition products:</u>	None in normal or expected use.

## 11. Toxicological Information

### Toxicokinetics, metabolism and distribution

<u>Non-human toxicological data:</u>	Not available.
<u>Method:</u>	Not available.
<u>Dosis:</u>	Not available.
<u>Routes of administration:</u>	Not available.
<u>Results:</u>	Not available.
<u>Absorption:</u>	Not available.
<u>Distribution:</u>	Not available.
<u>Metabolism:</u>	Not available.
<u>Excretion:</u>	Not available.

### Information on toxicological effects

Acute toxicity; LD50( Oral, Rat) > 10.000 mg/kg  
LD50(Dermal Rabbit) Not applicable  
LC50(Inhalation, Rat) Not applicable

<u>Skin corrosion/Irritation;</u>	Not irritating
<u>Serious eye damage/irritation:</u>	Not irritating
<u>Respiratory or skin sensitization :</u>	Not sensitizing
<u>Germ cell mutagenicity :</u>	Not classified
<u>Carcinogenicity :</u>	Not classified
<u>Reproductive toxicity :</u>	Not classified
<u>STOT- single exposure:</u>	Not classified
<u>STOT-repeated exposure:</u>	Not classified
<u>Aspiration hazard:</u>	Not classified

## 12. Ecological Information

### Toxicity:

<b>Acute toxicity</b>	<b>Time</b>	<b>Species</b>	<b>Method</b>	<b>Evaluation</b>	<b>Remarks</b>	
LC50	1000 mg/l	48h	Fish(Leuciscus idus)	OECD 203	N/A	N/A
EC50	2.0 mg/l	96h	Daphnia magna(Scenedesmus obliquus)	OECD 202	N/A	N/A
EC50	N/A	96h	Algae	OECD 201	N/A	N/A

### Persistence and degradability:

Biodegradability [BD = (BOD5 : COD) · 100 %] : <10% (practically nonbiodegradable)  
Chemical oxygen demand (COD): nonoxidizable.  
Biological oxygen demand (BOD): nonoxidizable.  
The substance half life: > 30 days.  
Persistence and biodegradability-is resistant to degradation and isn't subject to biodegradation.

### Bioaccumulative potential:

Cumulativeness: weak

### Mobility in soil:

Toxic effect on soil invertebrates: bacterial toxicity: EC0> 5000 mg/l (Pseudomonas fluorescens, Escherichia coli; 24 hours).

### Results of PBT&vPvB assessment:

The substance is not persistent bioaccumulative one.

<u>Other adverse effects:</u>	Not applicable.
-------------------------------	-----------------

### **13. Disposal Considerations**

<u>Waste treatment methods:</u>	The product is not hazardous for waste dumping in industrial or sanitary retention ponds. Disposal of the waste in correspondence with the state and local regulations.
---------------------------------	---

<u>Product / Packaging disposal:</u>	Contaminated packages are not considered hazardous. If recycling is not practicable, dispose of in compliance with local regulations.
--------------------------------------	---

### **14. Transport Information**

<u>D.O.T. Shipping Name</u>	Not regulated
-----------------------------	---------------

<u>Air - ICAO (international Civil Aviation Organization)</u>	Not regulated
---	---------------

<u>Sea - IMDG (International Maritime Dangerous Goods)</u>	Not regulated
--	---------------

<u>Transport in Bulk According to Annex II of MARPOL 73/38 and the IBC code:</u>	Not regulated
--	---------------

### **15. Regulatory Information**

Safety, health and environmental regulations/legislation specific for the substance or mixture

<u>Relevant information regarding authorization:</u>	Not applicable.
--	-----------------

<u>Relevant information regarding restriction:</u>	Not applicable.
--	-----------------

<u>Other EU regulations:</u>	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
------------------------------	--

<u>Other National regulations:</u>	Not applicable
------------------------------------	----------------

<b><i>Chemical Safety Assessment has been carried out?</i></b>	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
--	-----	-------------------------------------	----	--------------------------

### **16. Other Information**

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.