

Safety Data Sheet
According to Regulation (EC) No 1907/2006, Annex II,
According to Regulation (EU) No 1272/2008,
Amended by REGULATION (EC) No 453/2010

Titanium Dioxide

SDS Record Number: C555-TCO-010-110003
 Version 1.4 Revision date: 03/06/2016

Printing date: 10/01/2011

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Identification on the label/Trade name:	Titanium Dioxide
Additional identification:	Titanium oxide (TiO ₂)
Grades covered:	BLR-500, BLR-501, BLR-601, BLR-621, BLR-681, BLR-631, BLR-688, BLR-699, BLR-698, BLR-674, BLA-200, TR52, BLR-895, BLR-896, BLR-885, BLR-886, TR-53
Identification of the product:	CAS#13463-67-7; EC#236-675-5
Color Index :	77891
REACH registration No.:	01-2119489379-17-****

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses:

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.

1.2.2 Uses advised against:

Not available.

1.3 Details of the supplier of the safety data sheet:

Supplier(Only representative):	Chemical Inspection & Regulation Service Limited
Supplier(Manufacturer):	HENAN BILLIONS CHEMICALS CO., LTD.
Address:	ZHONGZHAN DISTRICT, JIAOZUO CITY, HENAN PROVINCE, CHINA
Contact person(E-mail):	zhangbo@lomonbillions.com
Telephone:	+86-391-3126618
Fax:	+86-391-3126904

1.4 Emergency telephone Number:

+353 41 980 6916

Available outside office hours?

YES

NO

Section 2 Hazards Identification

2.1 Classification of the substance

2.1.1 Classification:

The substance is classified as following according to 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.

2.1.2 The most important adverse effects

2.1.2.1 The most important adverse physicochemical effects:

Not applicable.

2.1.2.2 The most important adverse human health effects:

Not applicable

2.1.2.3 The most important adverse environmental effects:

Not applicable

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2.2 label elements

Not applicable

2.3 Other hazards

Not available

Section 3 Composition/information on ingredients

Substance/Mixture: Mixture

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Titanium dioxide	01-2119489379-17-****	13463-67-7	236-675-5	80-100%
Aluminium hydroxide	N/A	21645-51-2	244-492-7	0-3%
Amorphous Silica	N/A	7631-86-9	231-545-4	0-3%
Zirconium dioxide	N/A	1314-23-4	215-227-2	0-1%
phosphorus pentoxide	N/A	1314-56-3	215-236-1	0-3%
Potassium monoxide	N/A	12136-45-7	235-227-6	0-0.5%

Section 4 First aid measures

Description of first aid measures:

In case of inhalation:

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

In case of skin contact:

Wash with soap and water.

In case of eyes contact:

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

In case of 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.

Section 5 Fire-Fighting measures

Extinguishing Methods	Use any media appropriate for combustible material in the area.
Specific risks	Product is inert, non flammable and non combustible.
Special intervention methods	Product is inert, non flammable and non combustible.
Protection of fire-fighters	Usual protective equipment for fire fighters.

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Section 6 Accidental release measures

6.1 Personal precautions

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

6.2 Environmental Precautions:

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

6.3 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.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures:

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

7.1.2 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 minimising 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.

7.2 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.

7.3 Specific end use(s):

Not applicable.

Section 8 Exposure control/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure limits:

Substance	CAS No.	EINECS No.	Occupational Exposure Limit Value (8-hour reference period)		Occupational Exposure Limit Value (15-minute reference period)	
			ppm	mg/ m ³	ppm	mg/ m ³
Titanium dioxide	13463-67-7	236-675-5	-	10(Total inhalable dust); 4(Respirable dust)	-	-
Amorphous Silica	7631-86-9	231-545-4	-	6(Total inhalable dust); 2.4(Respirable dust)	-	-
Diphosphorus pentoxide	1314-56-3	215-236-1	-	1	-	2

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.1.3 DNEL/DMEL and PNEC-Values: Not available.

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8.2 Exposure controls

8.2.1 Appropriate engineering 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.

8.2.2 Protective equipment

Respiratory protection

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.

Skin protection

Respect main rules concerning the protection clothes for chemicals handling.

Hand protection

Glove material: Use protective gloves according to EN374 to prevent skin contact with dust., Break through time: > 60 min

Environmental exposure controls

Do not allow material to contaminate ground water system.

Eye protection

Wear dust-proof goggles, (protection class 5) according to EN 166.

Hygiene Measures

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.

8.2.3 Environmental exposure controls:

It is recommended that the exhaust air of the air-conditioning is filtered off in bag filters.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Powdered solid
Colour	white
Odour	Odourless or slight
Odour threshold	Not available
pH	6-8.5 (10% slurry)
Melting point/range (°C)	1560 to 1850°C (approximately)
Boiling point/range (°C)	2500-3000°C
Flash point (°C)	Not applicable
Evaporation rate	Not determined
Flammability (solid, gas)	Non-flammable
Ignition temperature (°C)	Not applicable
Upper/lower flammability/explosive limits	Not determined
Vapour pressure (20°C)	Not applicable
Vapour density	Not applicable
Relative Density (25°C)	Anatase 3.8 g/cm ³ Rutile 4.2 g/cm ³
Bulk density (kg/m ³)	500-900kg/cm ³
Water solubility (g/l) at 20°C	Insoluble
n-Octanol/Water (log P _{ow})	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity, dynamic (mPa s)	Not applicable
Explosive properties	Not explosive
Oxidising properties	Not oxidising
Molecular Formula:	TiO ₂
Molecular Weight:	79.90

9.2. Other information

Fat solubility(solvent– oil to be specified)	Insoluble
Surface tension	Not applicable

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Dissociation constant in water(pKa)	Not applicable
Oxidation-reduction Potential	Not available

Section 10 Stability and reactivity

10.1 Reactivity:

The substance is stable under normal storage and handling conditions.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

Under normal conditions, not hazardous reactions will occur.

10.4 Conditions to avoid:

Incompatible materials. 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 H₂O₂ generates ortho-titanic acid H₄TiO₄ (of yellow color). When heated with NH₃ generates TiN. When melted or agglomerated with oxides, metal carbonates titanates and double oxides are generated. With hydrogen, carbon, active metals (magnesium, calcium, sodium) TiO₂ when heated is reduced to lower oxides. When heated with chlorine in the presence of reducing agents (coal) generates TiCl₄.

10.5 Incompatible materials:

None reasonably foreseeable.

10.6 Hazardous decomposition products:

None in normal or expected use.

Section 11 Toxicological information

11.1 Toxicokinetics, metabolism and distribution

Non-human toxicological data: Not available

Method: Not available

Dosis: Not available

Routes of administration: Not available

Results: Not available

Absorption: Not available

Distribution: Not available

Metabolism: Not available

Excretion: Not available

11.2 Information on toxicological effects

Acute toxicity

LD50(Oral, Rat)	> 5000 mg/kg bw (Titanium dioxide)
	> 5000 mg/kg bw (Amorphous Silica)
LD50(Dermal Rabbit)	Not applicable

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LC50(Inhalation, Rat)	> 6.82 mg/L air/ 4 h (Titanium dioxide) > 2.08 mg/L air / 4 h (analytical) (Amorphous Silica)
Skin corrosion/Irritation	Not irritating
Serious eye damage/irritation	Not irritating
Respiratory or skin sensitization	Not sensitising
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
reproductive toxicity	Not classified
STOT- single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard:	Not classified

Section 12 Ecological information

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
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.

Other adverse effects: Not applicable.

Section 13 Disposal considerations

13.1 Waste treatment methods

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.

13.2 Product / Packaging disposal:

Contaminated packages are not considered hazardous. If recycling is not practicable, dispose of in compliance with local regulations.

Section 14 Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
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UN-Number:	Not regulated	Not regulated	Not regulated
UN Proper shipping name:	Not regulated	Not regulated	Not regulated
Transport hazard Class:	Not regulated	Not regulated	Not regulated
Packaging group:	Not regulated	Not regulated	Not regulated
Environmental hazards:	No	No	No
Special precautions for user:	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not regulated	Not regulated	Not regulated

Section 15 Regulation information

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

Relevant information regarding authorization: Not applicable.
Relevant information regarding restriction: Not applicable.
Other EU regulations: Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
Other National regulations: Not applicable
Chemical Safety Assessment has been carried out? YES NO

Section 16 Other information

16.1 Indication of changes Version 1.1 Amended by EU No 453/2010
 Version 1.2 REACH registration Number is given. Detailed physical and chemical properties is given. Detailed data of Acute toxicity is given.
 Version 1.3 Ingredients changed
 Version 1.4 the concentrations in section 3 are updated

16.2 Training instructions:

Not applicable.

16.3 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.4 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.