



SAFETY DATA SHEET

*Prepared according to the criteria of ST/SG/AC.10/30/Rev 10: GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

Creation date: 20230803

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Version: 1.0

Titanium Dioxide

1. IDENTIFICATION

1.1 GHS product identifier

Product name	Titanium Dioxide
Synonyms, trade names	BCR-856, BCR-858, BR-3661, BR-3662, BR-3663, BR-3668, BR-3669, BA-1220, BA-1221, R-256, R-318, ZHA-120
REGISTRATION NO.	/

1.2 Other means of identification

Company product code	No information available
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1.3 Recommended use of the chemical and restrictions on use

Relevant identified uses	Industrial, formulation, paints and coatings
Uses advised against	No information available

1.4 Supplier's details

1.4.1 Details of the Manufacturer

Name	ZHONGYUAN SHENGBANG (XIAMEN) TECHNOLOGY CO., LTD.
Address	Room 204-1, No. 2366 Fangzhong Road, Huli District, Xiamen, Fujian Province, China
Postal code	361000
Telephone	+86-592-3182202
Fax	/
E-mail	postmaster@sunbangtio2.com

1.5 Emergency telephone

Emergency telephone	+86-18559318606
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2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

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Carc. 2, H351

2.2 GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Warning

| Hazard statements

H351 Suspected of causing cancer

| Precautionary statements

Prevention

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P308+P313 IF exposed or concerned: Get medical advice/attention.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to in accordance with local/regional/national/international regulations.

2.3 Other hazards which do not result in classification

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable.

3.2 Mixture

Name	Product designation	Content (weight percentage, %)	Classification
Titanium Dioxide	CAS nr: 13463-67-7 EC nr: 236-675-5	≥93	Carc. 2, H351
Aluminium oxide	CAS nr: 1344-28-1 EC nr: 215-691-6	0-3	Not Classified
Silicon dioxide	CAS nr: 7631-86-9 EC nr: 231-545-4	0-7	Not Classified
Zirconium dioxide	CAS nr: 1314-23-4 EC nr: 215-227-2	0-5	Not Classified

Note: : Since all components of this substance except Titanium Dioxide are classified as non-hazardous, the

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follow-up toxicological data mainly refer to Titanium Dioxide.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

General advice	In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.
Eye contact	Rinse immediately with plenty of water. If irritation persists, seek medical attention.
Skin contact	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.
Inhalation	Move to a fresh air atmosphere. In case of persistent symptoms, consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable	Use extinguishing media suitable for surrounding fire.
Unsuitable	No information available.

5.2 Special hazards arising from the substances or mixture

Specific hazards during firefighting: Hazardous decomposition products may be formed under fire conditions. Exposure to decomposition products may be a hazard to health.

5.3 Special protective actions for fire-fighters

Special protective equipment: In the event of fire, wear self-contained breathing apparatus.
For firefighters: Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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 Methods and materials for containment and cleaning up

Use any feasible mechanical means (e.g. vacuum, sweeping) but avoid dusting during clean-up. The product can

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cause slippery conditions if wet. Even at low concentration, the product renders the discharge in liquid effluent highly visible.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling: Avoid creating dust. Do not breathe dust. Avoid contact with skin and eyes.
 Advice on protection against fire and explosion: Normal measures for preventive fire protection.
 Dust explosion class: no data available

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep containers tightly closed in a dry, cool and well ventilated place.
 Advice on common storage: Keep away from food, drink and animal feeding stuffs.
 Other data: No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values


Component	Country	Occupational exposure limits	
		Eight hours	Short term
Titanium Dioxide	Australia	10 mg/m ³	-
	Denmark	6 mg/m ³ total dust	12 mg/m ³ total dust
	France	11 mg/m ³ inhalable aerosol	-
	Ireland	10 mg/m ³	-
	Latvia	10 mg/m ³	-
	Poland	10 mg/m ³	-
	Singapore	10 mg/m ³	-
	South Korea	10 mg/m ³	-
Aluminium oxide	Australia	10 mg/m ³	-
	Denmark	5 mg/m ³ inhalable aerosol	10 mg/m ³ inhalable aerosol
	France	10 mg/m ³ respirable aerosol	-
	Ireland	10 mg/m ³	-
	Latvia	6 mg/m ³	-
	Poland	2,5 mg/m ³ (fume, total dust)	10 mg/m ³
	Singapore	10 mg/m ³	-
	South Korea	10 mg/m ³	-

Silicon dioxide	Australia	2 mg/m ³	-
	Belgium	10 mg/m ³	-
	Finland	5 mg/m ³	-
	Ireland	10 mg/m ³	-
	New Zealand	10 mg/m ³	-
	Poland	10 mg/m ³	-
	Singapore	10 mg/m ³	-
	South Korea	10 mg/m ³	-
Zirconium dioxide	Germany (DFG)	0,3 mg/m ³ (Respirable fraction and Multiplied by the material density, except ultrafine particles)	2,4 mg/m ³ (Respirable fraction, Multiplied by the material density, except ultrafine particles and 15 minutes average value)

8.2 Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

8.3 Individual protection measures, such as personal protective equipment (PPE)

Symbols of personal protective equipment	
Hand protection	Wear suitable gloves. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer.
Eye protection	The use of dustproof goggles or glasses with side protections is recommended if dust concentrations are likely to exceed the occupational exposure limit.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. General industrial hygiene practice. Do not breathe dust. Avoid contact with skin, eyes and clothing. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Wash contaminated clothing before re-use.
Skin protection	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory	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.
Thermal hazard	No information available

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Powder
Color	White
Odour	Odorless
Odour threshold	No information available
pH	6.5-8.5 (water extraction)
Melting/freezing point	1560 °C (anatase), 1843 °C (rutile), 1825 °C (brookite)
Initial boiling point and boiling range	3000 °C
Flash point	No information available
Evaporation rate	No information available
Flammability	Not combustible
Lower and upper explosion limit/flammability limit	No information available
Vapour pressure	Not applicable
Vapour density (air=1)	Not applicable
Density (water=1)	3.9 (anatase), 4.7 (rutile), 4.26 (brookite)
Bulk density	No information available
Solubility (water)	Not soluble in water
Partition coefficient n-octanol/water	No information available
Auto-ignition temperature	1860 °C
Decomposition temperature	No information available
Viscosity	Not applicable
Explosive properties	No explosive properties
Oxidising properties	No oxidising properties
Molecular mass:	79.866

10. STABILITY AND REACTIVITY

10.1 Reactive

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: None known.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Materials to avoid: None.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Component	Oral	Dermal	Inhalation
Titanium Dioxide	Rat, LD ₅₀ > 2000 mg/kg bw	No information available	Rat, LC ₅₀ = 5.09 mg/L air (4h)

Carcinogenicity

Component	IARC	NTP
Titanium Dioxide	Listed	Listed

Other

Endpoint	Component	Toxicological Information
Skin corrosion/irritation	Titanium Dioxide	No irritation.
Serious eye damage/irritation	Titanium Dioxide	No irritation.
Skin sensitisation	Titanium Dioxide	No sensitization.
Respiratory sensitization	Titanium Dioxide	No sensitization.
Reproductive toxicity	Titanium Dioxide	NOAEL > 1 000 mg/kg bw/day (nominal, rat)
STOT-single exposure	Titanium Dioxide	No information available.
STOT-repeated exposure	Titanium Dioxide	No information available.
Aspiration hazard	Titanium Dioxide	No information available.
Germ cell mutagenicity	Titanium Dioxide	No information available.

11.2 Information on other hazards

No information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Component	Fish	Aquatic invertebrates	Aquatic algae and cyanobacteria
Titanium Dioxide (Microsized)	Acute: Pimephales promelas, LC ₅₀ > 100 mg/L (nominal, 96h) Long term: LOD < 0.11 µg Ti/L, LOQ < 0.34 µg Ti/L (28d)	Acute: EC ₅₀ ≥ 100 mg/L, LC ₅₀ ≥ 10 000 mg/L (nominal, 48h) Long term: EC ₅₀ > 10 mg/L (nominal)	NOEC ≥ 100 mg/L (freshwater) NOEC ≥ 5 600 mg/L (saltwater)
Titanium Dioxide (Nanosized)	Acute: LC ₅₀ > 100 mg/L (nominal, 96h) Long term: Oncorhynchus mykiss, LC ₅₀ > 1 mg TiO ₂ /L (14d)	Acute: EC ₅₀ ≥ 100 mg/L, LC ₅₀ ≥ 100 mg/L (nominal, 48h) Long term: NOEC: > 1 mg/L ~ ≥ 100 mg/L (nominal)	EC ₅₀ ≥ 50 mg/L

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12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Low potential for bioaccumulation (BCF= 10)

12.4 Mobility in soil

Low mobility in soil (Koc= 23.74)

12.5 Results of PBT and vPvB assessment

Not PBT/vPvB

12.6 Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

Product: Dispose of in accordance with local regulations. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
 Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

Transport pictograph	No information available
Transport Classification	Classification
Land transport (ADR/RID)	
UN Number	Not classified as dangerous goods
UN proper shipping name	No information available
Transport hazard class(es)	No information available
Packing group,if applicable	No information available
Classification code	No information available
Marine transport (IMDG)	
UN Number	Not classified as dangerous goods
UN proper shipping name	No information available
Transport hazard class(es)	No information available
Packing group	No information available
EMS No.	No information available
Remarks	No information available
Air transport (ICAO/IATA)	
UN Number	Not classified as dangerous goods
UN proper shipping name	No information available
Transport hazard class(es)	No information available
Packing group	No information available

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Classification code	No information available
Environmental hazards	No information available
Special precautions for user	No information available

15. REGULATORY INFORMATION

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

Component	EINECS	TSCA	DSL/N DSL	IECSC	NZIoC	PICCS	KECI	AICS
Titanium Dioxide	Listed	Listed	Listed/ Not Listed	Listed	Listed	Listed	Listed	Listed
Aluminium oxide	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Listed	Listed
Silicon dioxide	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Listed	Listed	Not Listed
Zirconium dioxide	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Listed	Listed	Not Listed

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

Note

EINECS	European Inventory of Existing Commercial Chemical Substances.
TSCA	United States Toxic Substances Control Act Inventory.
DSL/NDSL	Canadian Domestic/Non-domestic Substances List.
IECSC	Inventory of Existing Chemical Substances in China
NZIoC	New Zealand Inventory of Chemicals.
PICCS	Philippines Inventory of Chemicals and Chemical Substances.
KECI	Korea Existing Chemicals Inventory
AICS	Australia Inventory of Chemical Substances.

16. OTHER INFORMATION

Issued By	ZHONGYUAN SHENGBANG (XIAMEN) TECHNOLOGY CO.,LTD.
Revision Date	2023/08/08
Reason for modification	-

REFERENCE

- [1] IPCS - The International Chemical Safety Cards (ICSC),
website:<http://www.ilo.org/dyn/icsc/showcard.home>
- [2] HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- [3] IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- [4] eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

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<https://www.echemportal.org/echemportal/substance-search>

- [5] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
[6] US National Institutes of Health: Pubchem, website: <https://pubchem.ncbi.nlm.nih.gov/>
[7] ChemIDplus, website: <https://www.nlm.nih.gov/databases/download/chemidplus.html>
[8] ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
[9] Germany GESTIS-database on hazard substance, website: <https://gestis-database.dguv.de/>
[10] ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

ABBREVIATIONS AND ACRONYMS

CAS: Chemical Abstracts Service

ADR: Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC₅₀: Lethal Concentration 50%

LD₅₀: Lethal Dose 50%

EC₅₀: Effective Concentration 50%

STATEMENT

This safety technical specification (SDS) is prepared according to Prepared according to the criteria of ST/SG/AC.10/30/Rev9: GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS). The data collected are from authoritative international databases and provided by enterprises themselves. Other information is based on our current state of knowledge. We try to make sure all the information is correct. However, due to the diversity of information sources and the limitations of our knowledge, this document is for user reference only. Users should make independent judgments about the suitability of this information for their specific purposes. We are not liable for any loss, damage or expense arising from or in connection with the handling, storage, use or disposal of the Products.

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