

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name	TiONA® 288
CAS No	13463-67-7
Synonyms	Titanium dioxide
Recommended Use	Pigment
Uses advised against	For use in industrial installations only.
Supplier	Tronox Pigment Bunbury Ltd. ABN: 50 008 683 627 Lot 350, Old Coast Road, Australind WA 6233 TEL: (08) 9780-8333 FAX: (08) 9780-8500
Emergency telephone	SGS (APAC) +65 6542 9595 non toll-free +800 ALERT-SGS (+800 253 78 747) toll free
E-mail address	chemprodsteward@tronox.com

Section 2: HAZARDS IDENTIFICATION

GHS - Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label Elements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Other Information

Hazards not otherwise classified (HNOC) Not applicable

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	Titanium dioxide
CAS No	13463-67-7

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Chemical name	CAS No	weight-%
Titanium dioxide	13463-67-7	>80%

Section 4: FIRST AID MEASURES

Inhalation	Remove to fresh air. If symptoms persist, call a physician.
Skin contact	Wash skin with soap and water. If skin irritation persists, call a physician.
Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists: Get

	medical advice/attention.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Symptoms	None known
Self-protection of the first aider	Use personal protective equipment as required.
Note to physicians	Treat symptomatically

Section 5: FIRE FIGHTING MEASURES

Explosive properties	Not an explosive.
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	No information available
Specific hazards arising from the chemical	No information available
Hazardous combustion products	Non-combustible
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions	Avoid contact with skin, eyes or clothing. Avoid creating dust. Use personal protective equipment as required.
For emergency responders	Approach area from upwind. Use personal protection recommended in Section 8.
Environmental Precautions	Do not allow into any sewer, on the ground or into any body of water.
Methods for Containment	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Advice on safe handling	Avoid contact with skin, eyes or clothing. Avoid generation of dust. Use personal protection recommended in Section 8.
General hygiene considerations	When using do not eat, drink or smoke. Take off all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice.
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Packaging materials	Product may be packaged in normal commercial packaging; paper or plastic material.
Materials to avoid	None

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Chemical name	China	Japan	Korea	Australia	Taiwan
Titanium dioxide	TWA: 8 mg/m ³ total dust STEL: 16 mg/m ³ total dust	TWA: 0.3 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³

Chemical name	ACGIH TLV	OSHA PEL	European Union
Titanium dioxide	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	-

Legend
Legend:

Other Information China regulatory reference: GBZ 2.1-2007

Engineering controls Showers
Eyewash stations
Ventilation systems
Extraction to remove dust at its source
Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Respiratory protection In case of inadequate ventilation wear respiratory protection.
Hand protection Wear protective gloves.
Eye/face Protection Wear safety glasses with side shields (or goggles).
Skin and Body Protection Long sleeve clothing.

Environmental exposure controls No information available

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	solid	Odor	Odorless
Appearance	Powder	Odor threshold	Not applicable
Color	white		
Property	Values	Remarks • Method	
pH	6 - 10	10g/100ml aqueous solution	
Melting point/freezing point	1830 °C	Melting point / melting range	
Boiling point / boiling range	2972 °C	-	
Flash Point		Not applicable	
Evaporation Rate		Not applicable	
Flammability (solid, gas)		Not applicable	
Flammability Limit in Air			
Upper flammability limit:	Not flammable		
Lower flammability limit:	Not flammable		
Vapor pressure		Not applicable	
Vapor Density		Not applicable	
Specific gravity	4.0 - 4.2	-	
Water solubility	Insoluble in water	-	
Solubility(ies)	Insoluble in common solvents	-	
Partition coefficient		No data available	
Autoignition Temperature		Not applicable	
Decomposition temperature		Not applicable	
Kinematic viscosity		Not applicable	
Dynamic viscosity		Not applicable	
Explosive properties	Not an explosive		
Oxidizing properties	None known		
Softening point	No information available		
Molecular weight	Not applicable		

VOC content (%)	None
Density	~ 4 kg/L
Bulk Density	No information available

Section 10: STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions
Stability	Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact	Not impact sensitive
Sensitivity to Static Discharge	Not sensitive

Possibility of hazardous reactions	None under normal processing
Hazardous polymerization	None under normal processing
Conditions to Avoid	None known
Incompatible Materials	None known based on information supplied
Hazardous decomposition products	None known based on information supplied

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

Information on likely routes of exposure

Inhalation	As a nuisance dust, prolonged exposures above recommended levels may cause adverse effects on the lung. Temporary drying effect and/or irritation of mucous membranes may result from excessive exposure. Exposure to dust may aggravate pre-existing respiratory conditions.
Eye Contact	No data available
Skin contact	Titanium dioxide does not penetrate either intact or abraded human skin. Prolonged contact may result in rashes/irritations due to drying of the skin and/or mechanical abrasion related to skin-to-clothing contact or skin-to-skin contact.
Ingestion	No data available

Numerical measures of toxicity - Component Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium dioxide	> 5000 mg/kg (Rat)	-	> 6,82 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Titanium dioxide was not classifiable as a skin corrosive or irritant based on in vivo test results for titanium dioxide submitted in the European Union (REACH) joint submission registration dossier for the substance.
Serious eye damage/eye irritation	Titanium dioxide was not classifiable as an eye irritant based on in vivo test results for titanium dioxide submitted in the European Union (REACH) joint submission registration dossier for the substance
Sensitization	No information available
Germ Cell Mutagenicity	Titanium dioxide was negative when tested in vitro in bacterial reverse mutation assays

and in mammalian cell gene mutation and clastogenicity assays as well as when tested in vivo.

Carcinogenicity

Titanium dioxide is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have been shown to cause lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. However, other laboratory animals such as mice and hamsters did not develop lung tumors under similar testing with titanium dioxide. Furthermore, human epidemiology studies do not suggest an association between occupational exposure to titanium dioxide and risk for cancer.

Chemical name	China	IARC
Titanium dioxide	-	Group 2B

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

Reproductive Toxicity

Titanium dioxide was not classifiable as a reproductive hazard based on in vivo test results for titanium dioxide submitted in the European Union (REACH) joint submission registration dossier for the substance.

Developmental Toxicity

None known

Teratogenicity

None known

STOT - single exposure

Titanium dioxide is not classifiable based on a lack of significant and/or severe toxic effects in humans or in experimental animals following acute exposures.

STOT - repeated exposure

Repeated inhalation exposures in rats to poorly soluble dusts such as titanium dioxide lead to a pattern of pulmonary effects including inflammation and fibrosis that are not observed in other rodent species, nonhuman primates, or humans under similar conditions. Therefore, titanium dioxide is not classifiable for repeated exposure.

Target organ effects

Lungs, Respiratory System.

Aspiration Hazard

Not applicable

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Titanium dioxide is of low acute aquatic toxicity.

Persistence and degradability

Not readily biodegradable. Persistent substance with a half life of more than 60 days.

Bioaccumulation

Material does not bioaccumulate.

Mobility

Not mobile

Other adverse effects

No information available.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues/unused products

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container. Improper disposal or reuse of this container may be dangerous and illegal.

Section 14: TRANSPORT INFORMATION

IMDG	Not regulated
IATA	Not regulated

Section 15: REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies
TCSI	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory

International Regulations This SDS is prepared in accordance with GB/T 16483 and GB/T 17519.

China

Section 16: OTHER INFORMATION

Prepared by	Product Stewardship Department
Issue date	27-Jan-2015
Revision date	25-Jul-2019
Revision note	No information available

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 a 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

End of Safety Data Sheet