

Section 1: PRODUCT AND COMPANY IDENTIFICATION**Product Identifier****Product name** TiONA® 288**Other means of identification****Synonyms** Titanium dioxide**CAS No** 13463-67-7**Recommended use of the chemical and restrictions on use****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 Number****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****Classification of the substance or mixture**

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

Label Elements**Signal Word** Not classified

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

Precautionary Statements - Prevention

• Wash hands thoroughly after handling

Precautionary Statements - Storage

• Store in accordance with local regulations

Precautionary Statements - Disposal

• Dispose of contents/container to an approved waste disposal plant

Other Information**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	weight-%	ENCS	ISHL No	CAS No
Titanium dioxide 13463-67-7	>80%	X	Present (5)-5225, (1)-558 (ENCS inventory number, considered an existing substance based on the Industrial Safety and Health Law)	13463-67-7

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.
Self-protection of the first aider	Use personal protective equipment as required.
Symptoms	None known
Note to physicians	Treat symptomatically

Section 5: FIRE FIGHTING MEASURES

Flammable properties	Not flammable.
Explosive properties	Not an explosive.
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	None known based on information supplied.
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

Handling

Advice on safe handling

Avoid contact with skin, eyes or clothing. Avoid generation of dust. Use personal protection recommended in Section 8.

Storage

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.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure guidelines

Personal, workplace, and environmental monitoring may be carried out to prevent exposure above recommended limits.

Chemical name	Japan	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH TLV
Titanium dioxide 13463-67-7	TWA: 0.3 mg/m ³	-	TWA: 10 mg/m ³

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.

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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State

solid

Appearance

Powder

Color

white

Odor

Odorless

Odor threshold

Not applicable

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

Reactivity	None known based on information supplied
Stability	Stable under recommended storage 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

Product Information	Product does not present an acute toxicity hazard based on known or supplied information. Information in this section is a summary of the conclusions of the chemical safety assessment conducted under REACH.
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

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	Japan	IARC
Titanium dioxide 13463-67-7	2	Group 2B

Legend

*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 in soil	Not mobile
Mobility	Not mobile
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
ADR	Not regulated
ICAO (air)	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/NDSL - 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

Chemical name	Dangerous Substances	Organic solvents	Harmful Substances Whose Names Are to be Indicated on the Label	ISHL - Prevention of Hazards Due to Specified Chemical Substances (Class 2)	Prevention of Lead Poisoning
Titanium dioxide 13463-67-7	>=0.1 %	Not applicable	X	-	-

Poisonous and Deleterious Substances Control Law	Not applicable
Labor Standards Act	No information available
Water Pollutants - Protection of Human Health	No information available
Pollution Release and Transfer Registry	Not applicable
Waste Management on Public Cleansing Law	No information available
Soil Contamination Control Law	No information available

This SDS complies with the requirements of JIS Z 7250:2010 and JIS Z 7252:2009 (Japan)

Section 16: OTHER INFORMATION

Prepared by	Product Stewardship Department
Issue date	27-Jan-2015
Revision date	25-Jul-2019
Revision note	SDS sections updated, 1, Address updated
Other Information	This product is intended for industrial use. This product is not intended for consumption, cosmetic, pharmaceutical or medical end use. Tronox will not knowingly sell product for use into these applications.

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