

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name TiONA® 288

Synonyms Titanium dioxide

CAS No 13463-67-7

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
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 FAX: (08) 9780-8500

For further information, please contact

E-mail address chemprodsteward@tronox.com

Emergency telephone SGS (APAC) +65 6542 9595 non toll-free
 +800 ALERT-SGS (+800 253 78 747) toll free

Section 2: HAZARDS IDENTIFICATION

GHS - Classification

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

Label Elements

Signal Word None

Other Information

Other Hazards None known based on information supplied.

Hazards not otherwise classified (HNOC) Not applicable

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Titanium dioxide

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

Section 4: FIRST AID MEASURES

Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists: Get medical advice/attention.
Skin contact	Wash skin with soap and water. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If symptoms persist, call a physician.
Ingestion	Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

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

Symptoms	None known
Note to physicians	Treat symptomatically

Section 5: FIRE FIGHTING MEASURES

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 and material for containment and cleaning up

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.
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.

Incompatible Materials None known based on information supplied

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	Korea
Titanium dioxide	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.

Eye/face Protection Wear safety glasses with side shields (or goggles).

Hand protection Wear protective gloves.

Skin and Body Protection Long sleeve clothing.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	solid	Color	white
Appearance	Powder		
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		Not applicable	
Upper flammability limit:	Not applicable		
Lower flammability limit:	Not applicable		
Vapor pressure		Not applicable	
Vapor Density		Not applicable	
Specific gravity	4.0 - 4.2	-	
Water solubility	Insoluble in water	-	
Solubility in other solvents	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	
Molecular weight	Not applicable		
Other Information			
Explosive properties	Not an explosive		
Oxidizing properties	None known		
Softening point	No information available		
VOC content (%)	None		
Density	~ 4 kg/L		

Bulk Density No information available

Section 10: STABILITY AND REACTIVITY

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

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.

Ingestion No data available

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.

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

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	IARC
Titanium dioxide	Group 2B

Legend

IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans

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.
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
Hazardous to the Aquatic Environment	No information available
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

Proper Shipping Name Not regulated

ICAO (air)

Proper Shipping Name Not regulated

IATA

Proper Shipping Name Not regulated

Section 15: REGULATORY INFORMATION

Chemical name	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	Korea. Harmful Substances Requiring Permission	ISHA - Substances to be controlled - Organic Substances	ISHA - Substances to be controlled - Metals	ISHA - Substances to be controlled - Acids and bases
Titanium dioxide	Not applicable	Not applicable	Not applicable	X	Not applicable

Toxic Chemicals Control Law Not applicable

Dangerous Material Safety Control Not applicable

Wastes Management Dispose of in accordance with federal, state and local regulations

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

This SDS complies with MoEL's Public Notice No. 2016-19

Section 16: OTHER INFORMATION

Prepared by Product Stewardship Department

Issue date 27-Jan-2015

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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