

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product Identifier**

Product name TiONA® 100, TiONA® 113, TiONA® 121, TiONA® 122, TiONA® 128, TiONA® 134
CAS No 13463-67-7
Synonyms Titanium dioxide

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Pigment
Uses advised against For use in industrial installations only

1.3. Details of the supplier of the safety data sheet

Manufacturer The Gulf Titanium Company Ltd.
Sari Street (in front of Airport Municipality)
Al Rabwah district, P.O. Box 13586
Jeddah 21414, Kingdom of Saudi Arabia
Telephone: +966 012 224 8000

Business Contact

Cristal Pigment Australia Ltd.
ABN: 50 008 683 627
Lot 350, Old Coast Road, Australind
WA 6233
TEL: (08) 9780-8333
FAX: (08) 9780-8500

For further information, please contact

E-mail address Regulatory.query@cristal.com

1.4. Emergency telephone number

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

Section 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture**

Classification according to CLASS Regulations & ICOP

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

2.2. Label Elements

Signal Word None

2.3. Other Hazards

None known

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

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

Section 4: FIRST AID MEASURES

4.1. Description of 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. 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.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	No information available.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Avoid creating dust.
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Hazardous combustion products	Non-combustible.
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5.3. Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.
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Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with eyes and skin. Avoid creating dust. Use personal protection recommended in Section 8.
For emergency responders	Approach area from upwind. Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental Precautions	Do not flush into surface water or sanitary sewer system.
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6.3. Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so. 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.

6.4. Reference to other sections

Reference to other sections	See section 13 for more information.
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Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Avoid generation of dust. Use personal protective equipment as required.

General hygiene considerations Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Keep working clothes separately. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

Packaging materials Product may be packaged in normal commercial packaging; paper or plastic material.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	Malaysia	Indonesia	New Zealand	Australia	Taiwan
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³

8.2. Exposure controls

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

Personal Protective Equipment

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

Thermal hazards None under normal processing.
Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State solid
Appearance Powder
Odor None
Color white
Odor threshold Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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 applicable
Lower flammability limit:		Not applicable
Vapor pressure		Not applicable
Vapor Density		Not applicable
Specific gravity	3.7-4.1	-
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	

9.2. Other information

Softening point	No information available
Molecular weight	Not applicable
VOC content (%)	None
Density	~ 4 kg/L
Bulk Density	No data available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity None known based on information supplied.

10.2. Chemical stability

Stability Stable under recommended storage conditions.

Explosion data

Sensitivity to Mechanical Impact Not impact sensitive.

Sensitivity to Static Discharge Not sensitive.

10.3. Possibility of hazardous reactions

Hazardous polymerization None under normal processing.

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to Avoid Dust formation.

10.5. Incompatible materials

Incompatible Materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

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

Ingestion to skin-to-clothing contact or skin-to-skin contact.
No data available.

Component Information

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

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	IARC	New Zealand
Titanium dioxide 13463-67-7	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.

Aspiration Hazard Not applicable.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity	Titanium dioxide is of low acute aquatic toxicity.
<u>12.2. Persistence and degradability</u> Persistence and degradability	Titanium dioxide is persistent and does not bioaccumulate. Not readily biodegradable.
<u>12.3. Bioaccumulative potential</u> Bioaccumulation	Material does not bioaccumulate.
<u>12.4. Mobility in soil</u> Mobility in soil Mobility	Not mobile. Not mobile.
<u>12.5. Results of PBT and vPvB assessment</u> PBT and vPvB assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).
<u>12.6. Other adverse effects</u> Other adverse effects Endocrine Disruptor Information	No information available This product does not contain any known or suspected endocrine disruptors.

Section 13: DISPOSAL CONSIDERATIONS

<u>13.1. Waste treatment methods</u> 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

<u>IMDG</u>	Not regulated
<u>ICAO (air)</u>	Not regulated
<u>IATA</u>	Not regulated

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture **National Regulations**

Malaysia This SDS complies with the requirements of Class Regulations and ICOP.

International Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
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
NZIC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory

Section 16: OTHER INFORMATION

Prepared by	Product Stewardship Department
Issue date	15-May-2009
Revision date	09-Jan-2019
Revision note	SDS sections updated 15 (International Inventories)
Restrictions on use	This product is a pigment intended for industrial use. This product is not intended for consumption, cosmetic, pharmaceutical or medical end use. Cristal will not knowingly sell product for use into these applications

Disclaimer

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