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Version 1

**Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product Identifier****Product name** TiONA® 288**Pure substance/mixture** Substance**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** Cristal Pigment Australia Ltd.  
ABN: 50 008 683 627  
Lot 4, 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 Number** 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  
Regulation (EC) No. 1272/2008 [CLP]*  
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]**Classification according to Directive 67/548/EEC or 1999/45/EC**  
*Full text of R-phrases: see section 16***Hazard symbols**

Not dangerous

**2.2. Label Elements****Product Identifier**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

**2.3. Other Hazards**

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances**

Chemical name	CAS No	weight-%	Classification according to Directive 67/548/EEC or 1999/45/EC	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Titanium dioxide	13463-67-7	>95%	-	-
Aluminum hydroxide	21645-51-2	1-3%	-	No data available

**Full text of R-phrases: see section 16**

**Full text of H- and EUH-phrases: see section 16**

### Section 4: FIRST AID MEASURES

**4.1. Description of first aid measures**

<b>Inhalation</b>	Remove to fresh air.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.

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

**Symptoms** None known.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

### 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**

No information available

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

## Section 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

#### **Personal precautions**

Ensure adequate ventilation, especially in confined areas.

#### **For emergency responders**

Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

Collect spillage.

### 6.3. Methods and material for containment and cleaning up

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

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

### 6.4. Reference to other sections

See section 13 for more information.

## Section 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

#### **Advice on safe handling**

Ensure adequate ventilation, especially in confined areas.

#### **General hygiene considerations**

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.

### 7.3. Specific end use(s)

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Chemical name	Australia	European Union	United Kingdom	France	Spain	Germany
Titanium dioxide 13463-67-7	10 mg/m <sup>3</sup>	-	STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> (a)	TWA: 10 mg/m <sup>3</sup>	-
Aluminum hydroxide 21645-51-2		-	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	-	-	TWA: 4 mg/m <sup>3</sup> TWA: 1.5 mg/m <sup>3</sup>

Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Titanium dioxide 13463-67-7	-	TWA: 10 mg/m <sup>3</sup>	-	-	TWA: 6 mg/m <sup>3</sup>
Aluminum hydroxide 21645-51-2	-	-	TWA: 0.05 mg/m <sup>3</sup>	-	-

Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Titanium dioxide 13463-67-7	STEL 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup>	STEL: 30 mg/m <sup>3</sup> TWA: 10.0 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>
Aluminum hydroxide 21645-51-2	STEL 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup> TWA: 1.2 mg/m <sup>3</sup>	-	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>

**Derived No Effect Level (DNEL)**

Inhalation 10 mg/m<sup>3</sup>

**Predicted No Effect Concentration (PNEC)**

Freshwater = 0.127 mg/L

Freshwater sediment > 1000 mg/kg

Marine water >1 mg/L

Marine sediment >100 mg/kg

**8.2. Exposure controls**

**Engineering controls** Ensure adequate ventilation, especially in confined areas.

**Personal Protective Equipment**

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

**Skin and Body Protection** Suitable protective clothing.

**Respiratory protection** In case of inadequate ventilation wear respiratory protection.

**Environmental exposure controls** No information available.

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties**

Physical State	solid	Odor	odorless
Appearance	powder		
Color	white		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		Not applicable
Melting point/freezing point	1830 °C	-
Boiling point / boiling range		No data available
Flash Point		Not applicable
Evaporation Rate		Not applicable

<b>Flammability (solid, gas)</b>		<b>Not applicable</b>
<b>Flammability Limit in Air</b>		
Upper flammability limit:		Not applicable
Lower flammability limit:		Not applicable
<b>Vapor pressure</b>		Not applicable
<b>Vapor Density</b>		Not applicable
<b>Specific gravity</b>	4.0-4.2	-
<b>Water solubility</b>	Insoluble in water	-
<b>Solubility(ies)</b>	Insoluble in solvents	-
<b>Partition coefficient</b>		No data available
<b>Autoignition Temperature</b>		Not applicable
<b>Decomposition temperature</b>		Not applicable
<b>Kinematic viscosity</b>		Not applicable
<b>Dynamic viscosity</b>		Not applicable

**9.2. Other information**

**VOC content (%)** Not applicable

## Section 10: STABILITY AND REACTIVITY

**10.1. Reactivity**

None known based on information supplied

**10.2. Chemical stability**

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact Not impact sensitive.

Sensitivity to Static Discharge Not sensitive.

**10.3. Possibility of hazardous reactions**

None under normal processing.

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

No information available.

**10.6. Hazardous decomposition products**

None under normal use conditions.

## Section 11: TOXICOLOGICAL INFORMATION

**11.1. Information on toxicological effects**

Product does not present an acute toxicity hazard based on known or supplied information.

<b>Inhalation</b>	No data available.
<b>Eye Contact</b>	No data available.
<b>Skin contact</b>	No data available.
<b>Ingestion</b>	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

<b>Skin corrosion/irritation</b>	No information available.
<b>Serious eye damage/eye irritation</b>	No information available.
<b>Sensitization</b>	No information available.
<b>Germ Cell Mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	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.
<b>Reproductive Toxicity</b>	Titanium dioxide did not cause reproductive effects in experimental animals.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ effects</b>	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.
<b>Aspiration Hazard</b>	No information available.

## Section 12: ECOLOGICAL INFORMATION

**12.1. Toxicity**

Titanium dioxide is of low acute aquatic toxicity.

**12.2. Persistence and degradability**

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

**12.3. Bioaccumulative potential**

Material does not bioaccumulate.

**12.4. Mobility in soil****Mobility in soil**

Not mobile.

**Mobility**

The product is insoluble and floats on water.

**12.5. Results of 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).

**12.6. Other adverse effects**

No information available

**Section 13: DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

<b>Waste from residues/unused products</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.
<b>Contaminated packaging</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Section 14: TRANSPORT INFORMATION****IMDG**

<b>14.1 UN/ID no</b>	Not regulated
<b>Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Marine pollutant</b>	Not applicable
<b>14.6 Special Provisions</b>	None
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	No information available

**RID**

<b>14.1 UN/ID no</b>	Not regulated
<b>Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental Hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	None

**ADR**

<b>14.1 UN/ID no</b>	Not regulated
<b>Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental Hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	None

**ICAO (air)**

<b>14.1 UN/ID no</b>	Not regulated
<b>Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental Hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	None

**IATA**

<b>14.1 UN/ID no</b>	Not regulated
<b>Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental Hazard</b>	Not applicable

14.6 Special Provisions None

## Section 15: REGULATORY INFORMATION

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

#### National Regulations

##### **Australia**

See section 8 for national exposure control parameters

#### International Inventories

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Does not comply
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies
<b>NIZIC</b>	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

### 15.2. Chemical safety assessment

No information available

#### Full text of R-phrases referred to under sections 2 and 3

Not applicable

<b>Prepared by</b>	Product Stewardship Department
<b>Issue date</b>	27-Jan-2015
<b>Revision date</b>	27-Jan-2015
<b>Revision note</b>	Not applicable.

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End of Safety Data Sheet