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Version 11

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

**Product name** TIONA® RCL-3, TIONA® RCL-69, TIONA® RCL-722, TIONA® 595, TIONA® 696

**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  
 TEL: (08) 9780-8333  
 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

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.
<b>Skin contact</b>	Wash skin with soap and water. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If symptoms persist, call a physician.
<b>Ingestion</b>	Rinse mouth. Do NOT induce vomiting. If symptoms persist, call a physician.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	
<b>Symptoms</b>	No information available
<b>Note to physicians</b>	Treat symptomatically

#### Section 5: FIRE FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
<b>Unsuitable Extinguishing Media</b>	None known based on information supplied
<b>Specific hazards arising from the chemical</b>	Avoid creating dust
<b>Hazardous combustion products</b>	Non-combustible
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

#### Section 6: ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Avoid contact with eyes and skin. Avoid creating dust. Use personal protective equipment as required.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system. Do not allow into any sewer, on the ground or into any body of water.
<b>Methods and material for containment and cleaning up</b>	
<b>Methods for Containment</b>	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	Take up mechanically, placing in appropriate containers for disposal.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

#### Section 7: HANDLING AND STORAGE

<b>Advice on safe handling</b>	Avoid contact with skin, eyes or clothing. Avoid generation of dust. Ensure adequate ventilation, especially in confined areas.
<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place.
<b>Packaging materials</b>	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 <sup>3</sup>

**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**

If exposure limits are exceeded, use suitable certified respirators. In case of insufficient ventilation, wear suitable respiratory equipment.

**Eye/face Protection**

Wear safety glasses with side shields (or goggles).

**Hand protection**

Wear protective gloves.

**Skin and Body Protection**

Long sleeve clothing. Wear suitable protective clothing.

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical State</b>	solid	<b>Color</b>	white
<b>Appearance</b>	Powder		
<b>Odor</b>	None		
<b>Odor threshold</b>	Not applicable		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	6-9	10g/100ml aqueous solution
<b>Melting point/freezing point</b>	1830 °C	Melting point / melting range
<b>Boiling point / boiling range</b>	2972 °C	-
<b>Flash Point</b>		Not applicable
<b>Evaporation Rate</b>		Not applicable
<b>Flammability (solid, gas)</b>		Not flammable
<b>Flammability Limit in Air</b>		Not applicable
<b>Upper flammability limit:</b>	Not applicable	
<b>Lower flammability limit:</b>	Not applicable	
<b>Vapor pressure</b>		Not applicable
<b>Vapor Density</b>		Not applicable
<b>Specific gravity</b>	3.7-4.1	(water = 1)
<b>Water solubility</b>	Insoluble in water	-
<b>Solubility in other solvents</b>	Insoluble in common 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
<b>Molecular weight</b>	Not applicable	

**Other Information**

<b>Explosive properties</b>	Not an explosive
<b>Oxidizing properties</b>	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 normal conditions
<u>Explosion data</u>	
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	Dust formation
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	Inert foreign body hazard only.
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*

<b>Germ Cell Mutagenicity</b>	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.
<b>Reproductive Toxicity</b>	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.
<b>Developmental Toxicity</b>	None known
<b>Teratogenicity</b>	None known
<b>STOT - single exposure</b>	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.
<b>STOT - repeated exposure</b>	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.
<b>Target organ effects</b>	Eyes Lungs Respiratory System
<b>Hazardous to the Aquatic Environment</b>	No information available
<b>Aspiration Hazard</b>	No information available

#### Component Information

### Section 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Titanium dioxide is of low acute aquatic toxicity.
<b>Persistence and degradability</b>	Titanium dioxide is persistent and does not bioaccumulate. Not readily biodegradable.
<b>Bioaccumulation</b>	Material does not bioaccumulate
<b>Mobility</b>	Not mobile
<b>Other adverse effects</b>	No information available
<b>Endocrine Disruptor Information</b>	This product does not contain any known or suspected endocrine disruptors.

### Section 13: DISPOSAL CONSIDERATIONS

**Waste from residues/unused products** Dispose of in accordance with federal, state and local 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**

**Industrial Safety and Health Law**

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** 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/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

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

### Section 16: OTHER INFORMATION

<b>Prepared by</b>	Product Stewardship Department
<b>Issue date</b>	15-Apr-2009
<b>Revision date</b>	25-Jul-2019
<b>Other Information</b>	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**