

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

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

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 Regulation 74(a), (b) of the HSNO Act

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)
Classification according to Schedule 6 of the WHS Regulation

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

Synonyms Titanium dioxide

CAS No 13463-67-7

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

| 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

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

Specific hazards arising from the chemical Avoid creating dust

Hazardous combustion products Non-combustible

5.3. Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

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.

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.

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.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

| Chemical name | Australia | New Zealand | Taiwan |
|--------------------------------|---------------------------|---------------------------|---------------------------|
| Titanium dioxide 13463-67-7 | 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 | | Not applicable |
| 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 normal 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

Acute Toxicity

11.1. Information on toxicological effects

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 | 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. |
| Ingestion | 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. |
| 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 | Eyes, Lungs, Respiratory System. |
| Symptoms | No information available |
| Aspiration Hazard | Not applicable |

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Titanium dioxide is of low acute aquatic toxicity.

12.2. Persistence and degradability

Persistence and degradability Titanium dioxide is persistent and does not bioaccumulate. Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation Material does not bioaccumulate

12.4. Mobility in soil

Mobility in soil Not mobile

Mobility Not mobile

12.5. Results of PBT and vPvB assessment

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

Other adverse effects No information available

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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

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

National Regulations

New Zealand

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO).

HSNO Chemical Classification

Not Hazardous

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 | 25-Jul-2019 |
| Revision note | SDS sections updated, 1, Address updated |
| Restrictions on use | 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. |

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