



SAFETY DATA SHEET

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]
Product number	20149
Synonyms; trade names	TITANIA, TRONOX, RUTILE TITANIUM DIOXIDES, ANATASE TITANIUM DIOXIDES, EUTITAN TITANDIOXIDE, TITANIUM DIOXIDE 1700 21000, TITANIUM DIOXIDE 21010, TITANIUM DIOXIDE 1700, 2100025B, TITANDIOXID TIONA AT-1, TITANIUM DIOXIDE CR-512, TITANIUM DIOXIDE R244, ADSORBSIA AS600 MEDIA, TITANIUM DIOXIDE BT-A10, CRISTAL 128, TITANIUM DIOXIDE RUTILE R 238, TITANIUM DIOXIDE RUTILE R 5566, TIONA 168, CRISTAL 121, TITANIUM DIOXIDE 14027 HNL, WHITE PE HO020405, TITANIUM DIOXIDE RUTILE R-5568, TIONA AT1, TIKON TR-35, TIKON TR-33, TITANIUM DIOXIDE TIKON TR33, TITANIUM DIOXIDE TIKON TR35, TITANIUM DIOXIDE TIKON TR36, TITANIUM DIOXIDE JHL, RCL188, TITANIUM DIOXIDE R 2196+, TITANIUM DIOXIDE RUTILE R 5566, TITANIUM DIOXIDE RUTILE R 216
REACH registration number	01-2119489379-17-XXXX
CAS number	13463-67-7
EC number	236-675-5

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

Identified uses	Surface coating Plastics Paper production Pigments for paint and printing inks Cosmetics Pharmaceuticals Food / Feed additive Colourant
-----------------	--

1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
----------	---

1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	20149

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
------------------	----------------

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

Health hazards Carc. 2 - H351

Environmental hazards Not Classified

2.2. Label elements

EC number 236-675-5

Hazard pictograms



Signal word Warning

Hazard statements H351 Suspected of causing cancer by inhalation.

Precautionary statements P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

REACH registration number 01-2119489379-17-XXXX

CAS number 13463-67-7

EC number 236-675-5

Ingredient notes Acute Toxicity Estimate (oral): > 10000 mg/kg
Acute Toxicity Estimate (inhalation): > 6.82 mg/l 4 hours Dust/Mist
Acute Toxicity Estimate (dermal): 10000 mg/kg

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse nose and mouth with water. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention.

Ingestion Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Give plenty of water to drink. Never give anything by mouth to an unconscious person. Do not induce vomiting unless under the direction of medical personnel. Get medical attention if any discomfort continues.

Skin contact After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Get medical attention if any discomfort continues.

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

Eye contact Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

Inhalation Dust may irritate the respiratory system. Coughing, chest tightness, feeling of chest pressure.

Skin contact Prolonged contact may cause dryness of the skin.

Eye contact May cause temporary eye irritation.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards When heated and in case of fire, toxic vapours/gases may be formed. Dust may form explosive mixture with air.

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of the following substances: Carbon.

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Avoid generation and spreading of dust. Eliminate all sources of ignition. Provide adequate ventilation. Avoid inhalation of dust. Keep upwind.

6.2. Environmental precautions

Environmental precautions Avoid discharge into water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if safe to do so. Approach the spillage from upwind. Remove spillage with vacuum cleaner or collect with a shovel and broom, or similar. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. For waste disposal, see Section 13.

6.4. Reference to other sections

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Eye wash facilities and emergency shower must be available when handling this product. Provide adequate ventilation. Do not breathe dust. Do not eat, drink or smoke when using this product. Protect from moisture. Dust may form explosive mixture with air.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Provide eyewash station and safety shower.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store away from the following materials: Strong oxidising agents. Avoid exposure to high temperatures or direct sunlight. Avoid heat, flames and other sources of ignition. Container must be kept tightly closed when not in use.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 4 mg/m³ respirable dust

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ inhalable dust

WEL = Workplace Exposure Limit.

Ingredient comments WEL = Workplace Exposure Limits

DNEL Workers - Inhalation; Long term local effects: 0.170 mg/m³
Consumer - Inhalation; Long term systemic effects: 0.028 mg/m³

PNEC

- Fresh water; 0.184 mg/l
- marine water; 0.0184 mg/l
- Intermittent release; 0.193 mg/l
- Sediment (Freshwater); 1000 mg/kg
- Sediment (Marinewater); 100 mg/kg
- Soil; 100 mg/kg
- STP; 100 mg/l

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Observe any occupational exposure limits for the product or ingredients. Avoid generation and spreading of dust. Provide adequate ventilation.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Dust-resistant, chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

Hand protection	The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear appropriate clothing to prevent skin contamination.
Hygiene measures	When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Provide eyewash station and safety shower.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m ³ . If ventilation is inadequate, suitable respiratory protection must be worn. Particulate filter, type P2. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Powder.
Colour	White.
Odour	Almost odourless.
Odour threshold	No information available.
pH	pH (diluted solution): 6 - 9 @ 100g/l
Melting point	> 1800°C
Initial boiling point and range	2972°C
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	3.7 - 4.1
Bulk density	1.1 g/cm ³
Solubility(ies)	Insoluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

Viscosity	No information available.
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.
<u>9.2. Other information</u>	
Other information	None.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	79.88 Calculation method.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
------------	---

10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
-----------	---

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
------------------------------------	--

10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time.
---------------------	---

10.5. Incompatible materials

Materials to avoid	Strong oxidising agents.
--------------------	--------------------------

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of the following substances: Carbon.
----------------------------------	--

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD ₅₀ mg/kg)	10,000.0
--	----------

Species	Rat
---------	-----

Notes (oral LD ₅₀)	LD ₅₀ > 10000 mg/kg, Oral, Rat
--------------------------------	---

ATE oral (mg/kg)	10,000.0
------------------	----------

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ 10000 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 6.82 mg/l, 4 hours, Dust/Mist Rat

Skin corrosion/irritation

Animal data Not irritating. Rabbit OECD 404

Serious eye damage/irritation

Serious eye damage/irritation Solid particles trapped behind the eyelid may cause abrasive damage.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Not sensitising. Mouse Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro Ames test Negative. OECD 471

Carcinogenicity

Carcinogenicity Suspected of causing cancer by inhalation.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Reproductive toxicity - development No information available.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Toxicokinetics

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Inhalation

Dust may irritate the respiratory system. Coughing, chest tightness, feeling of chest pressure. May cause cancer by inhalation.

Ingestion

May cause discomfort if swallowed.

Skin contact

Skin irritation should not occur when used as recommended.

Eye contact

Solid particles trapped behind the eyelid may cause abrasive damage.

Route of exposure

Inhalation

SECTION 12: Ecological information

Ecotoxicity

The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

12.1. Toxicity

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish NOEC, 48 hours: >1000 mg/l, *Leuciscus idus* (Golden orfe)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >1000 mg/l, *Daphnia magna*

Acute toxicity - aquatic plants EC₅₀, 72 hours: > 100 mg/l, *Pseudokirchneriella subcapitata*
OECD 201

Acute toxicity - microorganisms EC₅₀, 3 hours: > 1000 mg/l,
OECD 209

12.2. Persistence and degradability

Persistence and degradability The product contains inorganic substances which are not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential The product is not bioaccumulating. BCF: 19 - 352, *Oncorhynchus mykiss* (Rainbow trout)

Partition coefficient No information available.

12.4. Mobility in soil

Mobility The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste should be treated as controlled waste. Do not puncture or incinerate, even when empty.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDL

All the ingredients are listed or exempt.
DSL

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]

New Zealand - NZIOC

All the ingredients are listed or exempt.

Taiwan - TCSI

All the ingredients are listed or exempt.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

**TITANIUM DIOXIDE; [IN POWDER FORM CONTAINING 1 % OR MORE OF PARTICLES
WITH AERODYNAMIC DIAMETER $\leq 10 \mu\text{m}$]**

Key literature references and sources for data	Supplier's information.
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	09/08/2021
Version number	3.005
Supersedes date	31/12/2020
SDS number	20149
SDS status	Approved.
Hazard statements in full	H351 Suspected of causing cancer by inhalation.
Signature	Jitendra Panchal

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.