Titanium dioxide

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Date of issue: 05/15/2025 Revision date: 05/15/2025 Version: 1.0

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

1.1. Product identifier

Product form	:	Substance
Substance name	:	Titanium dioxide
Grade Name	:	GTR358, GTR358+, GTR388, GTR398
EC-No.	:	236-675-5
CAS-No.	:	13463-67-7
REACH registration No	:	01-2119489379-17-****

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

1.2.1. Relevant identified uses

Main use category : Pigments

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Only representative	Chemical Inspection and Regulation Service Limited
Address	Regus Harcourt Centre, Block 4, Co. Dublin, D02 HW77, Ireland
E-mail	info@cirs-reach.com

Supplier	G & J Resources Inc.
Address	Unit 502, 7300 Warden Ave; Toronto, ON, Canada L3R 9Z6
Postal Code	L3R 9Z6
Phone	+1 (905) 604-7008
FAX	+1 (905) 604-7009
E-mail	info@gandjresources.com

1.4. Emergency telephone number

Emergency number : +1 (905) 604-7008

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 [CLP]
The substance is not classified, according to the Globally Harmonized System (GHS).

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Titanium dioxide	(CAS-No.) 13463-67-7 (EC-No.) 236-675-5 (REACH-no) 01-2119489379-17-****	≥94.0%	Not classified

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : In case of doubt or persistent symptoms, consult always a physician.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Gently wash with plenty of soap and water.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

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

No additional information available

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing agent suitable for surrounding fire.

Unsuitable extinguishing media : No information available.

5.2. Special hazards arising from the substance or mixture

Product is inert, non flammbale and non combustible

5.3. Advice for firefighters

Precautionary measures fire : Do not allow run-off from fire fighting to enter drains or water courses.

Protection during firefighting : Wear recommended personal protective equipment. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Ensure adequate ventilation, especially in confined areas. Avoid dust formation. Wear suitable protective clothing.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Do not allow run-off from fire fighting to enter drains or water courses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Avoid dust formation. Clean up immediately by sweeping or vacuum.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Take precautionary measures against static discharge. Avoid dust formation. Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Prevent moisture contact. Keep container tightly closed and in well ventilated place.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Titanium dioxide (13463-67-7)		
Austria	MAK (mg/m³)	5 mg/m³ (alveolar dust, respirable fraction)
Austria	MAK Short time value (mg/m³)	10 mg/m³ (alveolar dust, respirable fraction)
Belgium	Limit value (mg/m³)	10 mg/m³
Bulgaria	OEL TWA (mg/m³)	10 mg/m³ (respirable dust)
Croatia	GVI (granična vrijednost izloženosti) (mg/m³)	10 mg/m³ (total dust) 4 mg/m³ (respirable dust)
Denmark	Grænseværdie (langvarig) (mg/m³)	6 mg/m³
Estonia	OEL TWA (mg/m³)	5 mg/m³
France	VME (mg/m³)	10 mg/m³
Greece	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction) 5 mg/m³ (respirable fraction)
Ireland	OEL (8 hours ref) (mg/m³)	10 mg/m³ (total inhalable dust) 4 mg/m³ (respirable dust)
Ireland	OEL (15 min ref) (mg/m3)	30 mg/m³ (calculated-total inhalable dust) 12 mg/m³ (calculated-respirable dust)
Latvia	OEL TWA (mg/m³)	10 mg/m³
Lithuania	IPRV (mg/m³)	5 mg/m³
Poland	NDS (mg/m³)	10 mg/m³ (<2% free crystalline silica and containing no asbestos-inhalable fraction)
Portugal	OEL TWA (mg/m³)	10 mg/m³
Romania	OEL TWA (mg/m³)	10 mg/m³
Romania	OEL STEL (mg/m³)	15 mg/m³
Spain	VLA-ED (mg/m³)	10 mg/m³
Sweden	nivågränsvärde (NVG) (mg/m³)	5 mg/m³ (total dust)
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ (total inhalable) 4 mg/m³ (respirable)
United Kingdom	WEL STEL (mg/m³)	30 mg/m³ (calculated-total inhalable) 12 mg/m³ (calculated-respirable)
Norway	Grenseverdier (AN) (mg/m³)	5 mg/m³
Norway	Grenseverdier (Korttidsverdi) (mg/m3)	10 mg/m³ (value calculated)
Switzerland	MAK (mg/m³)	3 mg/m³ (respirable dust)
Australia	TWA (mg/m³)	10 mg/m³ (containing no asbestos and <1% crystalline silica-inhalable dust)
Canada (Quebec)	VEMP (mg/m³)	10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust)
USA - ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA - IDLH	US IDLH (mg/m³)	5000 mg/m³
USA - OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust)

Titanium dioxide (13463-67-7)	
DNEL/DMEL (Workers)	
Long-term - local effects, inhalation	10 mg/m³

Titanium dioxide (13463-67-7)	
DNEL/DMEL (General population)	
Long-term - systemic effects,oral	700 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.127 mg/l
PNEC aqua (marine water)	1 mg/l
PNEC aqua (intermittent release)	0.61 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	1000 mg/kg dwt
PNEC sediment (marine water)	100 mg/kg dwt
PNEC (Soil)	
PNEC soil	100 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	1667 mg/kg food
PNEC (STP)	
PNEC sewage treatment plant	100 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Boiling Point : Not applicable
Vapor Pressure : Not volatile
Vapor Density : Not volatile
Melting Point : Not applicable
Evaporation Rate : Not volatile
Solubility in Water : Insoluble
pH (water extract) :6.0-8.5
Odor : None
Form : Powder, solid
Color : White
Specific Gravity : 4.0-4.2

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. flames or sparks. Ignition sources.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Titanium dioxide (13463-67-7)	
LD50 oral rat	> 24000 mg/kg bw
LC50 inhalation rat (mg/l)	> 6.82 mg/l/4h

Skin corrosion/irritation : Not irritating
Serious eye damage/irritation : Not irritating
Respiratory or skin sensitisation : Not sensitizing
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

The product contains Titanium Dioxide which is a slight (HMIS scale) or moderate (GTi scale) eye irritant and a slight skin irritant, but is not a skin sensitizer in animals. This product may contain Amorphous Silica which is a mild eye irritant and is a negligible to slight skin irritant when tested as a 50% aqueous paste in animals. Amorphous Silica dust is not expected to be a skin irritant. Animal testing indicates Amorphous Silica is not a skin sensitizer.
In short term inhalation studies of Titanium Dioxide mixtures containing 6% Aluminum Hydroxide and 8% Silicon Dioxide, a slight fibrogenic response occurred in animals exposed to 1,300 mg/m3 for 4 weeks respirable dust. A typical dust cell reaction but no fibrogenic response was noted in animals similarly exposed to Titanium Dioxide, or Titanium Dioxide mixtures containing from 1% to 3% Aluminum Hydroxide, and 2.7 to 6% Silicon Dioxide. Repeated inhalation exposure to Amorphous Silica caused pulmonary changes including reversible inflammation. Long-term exposure caused pulmonary changes including reversible inflammation, vascular obstruction and emphysema. Guinea pigs exposed to Aluminum Hydroxide by inhalation exhibited no evidence of injurious effects but did show progressive accumulation of aluminum in the lungs.
Repeated and long term ingestion of Titanium Dioxide caused no significant toxicological effects. Single, repeated and long-term exposure by ingestion to Amorphous Silica caused no significant toxicological effects. Ingestion of Aluminum Hydroxide caused growth impairment, and bone changes due to phosphate depletion in animals but ingestion of phosphate eliminates these changes; no evidence of other toxicity was noted.
In lifetime inhalation studies of respirable Titanium Dioxide at levels up to 250 mg/m3, no compound-related clinical signs of toxicity were seen in the exposed animals. Slight pulmonary fibrosis was seen at 50 and 250 mg/m3 respirable dust levels but not at 10 mg/m3. There was no evidence of cancer in animals exposed to 10 or 50 mg/m3 respirable Titanium Dioxide.
Microscopic lung tumors were seen in 17 percent of the rats exposed to 250 mg/m3 respirable Titanium Dioxide. The lung tumors seen in the rat were different from common human lung cancers, relative to anatomic type and location, occurred only at dust levels which overwhelmed the animals lung clearance mechanism and, therefore, are of questionab-le biological relevance for man.
In lifetime animal feeding tests at levels up to 50,000 ppm, Titanium Dioxide showed no evidence of cancer or other significant adverse effects in either rats or mice. No animal data are available to define the developmental or reproductive toxicity of Titanium Dioxide. Tests have shown that Titanium Dioxide does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. Animal testing indicates Amorphous Silica does not have carcinogenic or reproductive effects. Amorphous Silica has not produced genetic damage in bacterial cultures.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

11.2.2. Other information

Potential adverse human health effects and symptoms : No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

Titanium dioxide (13463-67-7)	
LC50 fish	1000 ml/l (freshwater fish); 10000mg/l (marine water fish)
EC50 Daphnia 1	1000 mg/l (Daphnia magna)
EC50 Daphnia 2	10000 mg/l (Acartia tonsa)
EC50 72h algae (1)	61 mg/l (Pseudokirchnerella subcapitata)
EC50 72h algae (2)	10000 mg/l (Skeletonema costatum)

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment

Component	
Titanium dioxide (13463-67-7)	PBT: not relevant – no registration required vPvB: not relevant – no registration required

12.6. Endocrine disrupting properties
The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

12.7. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.6. Special precautions for user

- Overland transport
Not applicable

- Transport by sea
Not applicable

- Air transport
Not applicable

- Inland waterway transport

Not applicable

- Rail transport

Not applicable

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Titanium dioxide is not on the REACH Candidate List

Titanium dioxide is not on the REACH Annex XIV List

15.1.2. National regulations

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Germany

VwVwS Annex reference	: Water hazard class (WGK) nwg, Non-hazardous to water (KBwS-Beschluss; ID No. 1345)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen	: The substance is not listed
SZW-lijst van mutagene stoffen	: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	: The substance is not listed

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product