



Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

Titanium Dioxide

Product identifier

Product Code: TD100

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

Relevant identified uses:

White pigment for cosmetics, food and pharmaceutical applications

Uses advised against:

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1.3 Details of the supplier of the safety data sheet

Golden Bough Botanicals Inc 12-1585 Cliveden Ave Delta BC V3M 6M1

1.4 Emergency telephone number

604-540-8700 (Monday-Friday 8:30 am-4:30 pm)

2. POSSIBLE HAZARDS

2.1 Classification of the substance or mixture

May cause eye, skin and respiratory tract irritation. May be harmful if inhaled.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

HMIS Ratings: Health 1 - Flammability: 0 - Reactivity: 0

Routes of exposure:	Inhalation. Eye contact. Skin contact. Inhalation.
Eyes	Dust may cause: mechanical irritation.
Skin	TiO ₂ pigments are not irritant but as with all fine powders can adsorb moisture and natural oils from the surface of the skin during prolonged exposure.
Inhalation	May cause respiratory tract irritation.
Ingestion	May cause discomfort if swallowed. Target organs
Chronic effects	Eyes. Skin. Respiratory system Dusts or powder may irritate the respiratory tract, skin and eyes. Frequent inhalation of fume/dust over a long period of time may increase the risk of developing lung diseases although epidemiological studies among titanium dioxide workers could not demonstrate this.
Signs and symptoms	Upper respiratory tract irritation. Coughing. Irritation of eyes and mucous membranes. Skin irritation.

2.2. Label elements

USA: Label has to comply with OSHA Hazard Communication Standard ((29 CFR 1910.1200).

CANADA: Label has to state D2A and corresponding WHMIS symbol.

2.3 Other hazards

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Characterisation (Substance)

Classification according to DSD -DPD / CLP

Substance identification	ID Numbers	%	Classification	Hazard Statemernts (R/H)
Titanium Dioxide	CAS.	13463-67-7	99 - 100	-
	EINECS	236-675-5		
	INDEX:	-		
	REACH	01-2119489379-17-0005		
		01-2119489379-17-0006		
		01-2119489379-17-0018		
Color Index	C.I. 77891 Pigment white 6			

3.2 Chemical Characterisation (Mixture)

Description: No mixture

Hazardous components: -

4. FIRST AID MEASURES

4.1 Description of first aid measures

General indications:	No hazards which require special first aid measures.
Inhalation:	Move to fresh air. Give symptomatic treatment as necessary.
Skin contact:	Wash with soap and water.
Eye contact:	Wash with water or neutral eyewash solution.
Ingestion:	Do not induce vomiting. Give up to 200 ml water. In case of persistent symptoms, consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

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4.3 Indication of any immediate medical attention and special treatment needed

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5. FIREFIGHTING MEASURES

5.1 Extinguishing media

No restrictions

5.2 Special hazards arising from the substance or mixture

The product itself does not burn. Product is inert, not flammable and incombustible.

5.3 Advice for firefighters

NFPA Ratings: Health 1 - Flammability: 0 - Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Ensure adequate ventilation.

6.2 Environmental precautions

Avoid dust dispersion to the environment. Dust may cause the surroundings to become white.

Prevent

leakages from entering drains and ditches that lead to natural waterways.

6.3 Methods and material for containment and cleaning up

Use any suitable mechanical means (e.g. vacuum, sweeping), but avoid dusting during clean-up.

6.4 Reference to other sections

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7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid dust formation during handling. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. In case of insufficient ventilation, wear suitable respiratory equipment.

7.2 Conditions for safe storage, including any incompatibilities

Fire Precautions:	The product is not flammable
Storage conditions/ packing material:	Keep in a dry place
Incompatible products:	No restrictions

7.3 Specific end use(s)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Substance CAS No.	Titanium dioxide 13463-67-7		Dust, inhalable		Dust, respirable	
	Limit value - Eight hours mg/m ³	Limit value - Short term mg/m ³	Limit value - Eight hours mg/m ³	Limit value - Short term mg/m ³	Limit value - Eight hours mg/m ³	Limit value - Short term mg/m ³
Austria			10	20	5	10
Belgium	10		10		3	
Canada - Québec	10					
Denmark	6 total dust	12 total dust	10	20		
European Union						
France	11 inhalable aerosol		10		5 respirable aerosol	
Germany (AGS)			10	20	3	6
Germany (DFG)			4		1,5	
Hungary			10		6	
Italy						
Japan						
Poland	10	30				
Spain	10 inhalable aerosol		10		3	
Sweden	5 inhalable aerosol		10		5	
Switzerland	3 respirable aerosol		10		3	
The Netherlands						
USA - OSHA	15 total dust		15		5	
United Kingdom	10 inhalable aerosol 4 respirable aerosol					
Remarks:						
	Austria					*STV 15 minutes average value
	France			*Bold type: Restrictive statutory limit values		*Bold type: Restrictive statutory limit values
	Germany(AGS)			*15 minutes average value, insoluble particulates		*15 minutes average value, insoluble particulates
	Germany(DFG)			*long term exposure level, insoluble particulates		*insoluble particulates

(Source: GESTIS - Internationale Grenzwerte für chemische Substanzen - Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA))

8.2 Exposure controls

Engineering measures: Maintain exposures below applicable exposure limits:

Personal Protection Equipment

Industrial hygiene measures: Keep in clean conditions

Respiratory protection: A respirator must be used if the dust concentration is likely to exceed the Occupational exposure limit. At higher concentrations wear particle filter DIN EN 143 - P2. or equivalent approved by NIOSH.

Hand protection: Prolonged exposure should be avoided by wearing suitable protective gloves and clothing.

Eye protection: The use of an approved dustproof goggles is recommended if the dust concentration is likely to exceed the Occupational exposure limit

Skin protection: TiO₂ pigments are not irritant but as with all fine powders can adsorb moisture and natural oils from the surface of the skin during prolonged exposure. Prolonged exposure should be avoided by wearing suitable protective gloves and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Physical State: Powder

Colour: White

Odour: None

Critical Data

Melting point or range:	> 1,800°C
Boiling point or range:	not applicable
Flash point:	not flammable
Ignition temperature:	not flammable
Auto-ignition temperature:	not flammable
Oxidizing properties:	none
Explosive properties:	no danger of explosion.
Explosivity or flammability limit in air:	-
Vapour pressure:	not applicable
Density:	approx. 3,9 g/ml
Solubility:	< 0,01 g/l
pH-value:	approx. 8
Partition coefficient:	not applicable
Viscosity:	not applicable

9.2 Other information

Bulk density: approx. 430 g/l

10. STABILITY AND REACTIVITY

10.1 Reactivity

No special reactivity known

10.2 Chemical stability

Stable under normal use conditions

10.3 Possibility of hazardous reactions

No hazardous reactions known

10.4 Conditions to avoid

Stable under normal use conditions

10.5 Incompatible materials

None known

10.6 Hazardous decomposition products

No hazardous decomposition products

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

LD₅₀ (rats, oral) > 10,000 mg/kg

Inhalative LC₅₀ /4 hrs (Rat): > 6.8 mg/l

Irritation/corrosion:

Titanium dioxide is not irritating

Sensitisation:

No sensitisation known

Chronic Toxicity:

Carcinogenicity:

Suspecting that long term inhalation of TiO₂ dust may be a reason of causing cancer, IARC has classified TiO₂ in 2006 as "possibly carcinogenic" to humans (Group 2B). Unless tumours produced in rats on inhalation of very high concentrations of titanium dioxide are believed to be the result of prolonged "lung overload" and probably not relevant to man..Two major epidemiology studies among titanium dioxide workers in the US and in EUROPE could not demonstrate an elevated lung cancer risk.

Non genotoxic.

Further information:

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12. ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity: Fish LC₀ (Leuciscus idus, 48h): > 1000 mg/l

12.2 Persistence and degradability

Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

The product is practically insoluble in water and not biodegradable.

12.4 Mobility in soil

No data

12.5 Results of PBT and vPvB assessment

According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances. Titanium Dioxide is an inorganic substance, thus a PBT and vPvB assessment is not required.

12.6 Other adverse effects

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13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: No hazardous waste according to European Directive 91/689/EEC and RCRA. Place in an appropriate disposal facility in compliance with local and national regulations.

Contaminated packaging: Containers that cannot be cleaned must be treated as waste and disposed of in an approved industrial incineration facility. The empty and clean containers may be reused in conformity with regulations

Cleanser: Water

14. TRANSPORT INFORMATION

14.1 UN number

The product is not classified as a hazardous material according to the DOT, ADR/RID, IMDG, IATA on the transport of dangerous or hazardous goods.

14.2 UN proper shipping name

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14.3 Transport hazard class(es)

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14.4 Packing group

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14.5 Environmental hazards

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14.6 Special precautions for user

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14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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15. REGULATORY INFORMATION

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

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National Regulations

OSHA: This product is considered hazardous under the OSHA Hazard Communication Standard ((29 CFR 1910.1200).

SARA Title III Sec. 302/303 (Extremely Hazardous Substances):	Not listed
SARA Title III Sec. 311/312 (40 CFR 370)	Hazard Category: None
SARA Title III Sec. 313 (Toxic Chemicals Emissions Reporting):	Not listed
CERCLA Hazardous Substance (40 CFR Part 302):	Not listed

California Proposition 65:	WARNING! This product contains a chemical known to the State of California to cause cancer: Titanium Dioxide (airborne, unbound particles of respirable size) The listing does not cover Titanium Dioxide when it remains bound within a product matrix.
Canada (WHMIS)	This product has been classified as D2A controlled product under WHMIS. The listing does not cover titanium dioxide when it is inextricably bound within a product.

EINECS: (European Inventory of Existing Commercial Chemical Substances)	236-675-5
ELINCS: (European List of Notified Chemical Substances)	not listed
TSCA: (Toxic Substances Control Act (EPA-Inventory)	13463-67-7
AICS: (Australian Inventory of Chemical Substances)	13463-67-7
DSL: (Canadian Domestic Substances List)	13463-67-7
NDSL: (Canadian Non-Domestic Substances List)	not listed
KECI: (Korean Existing Chemicals Inventory)	KE-33900
PICCS: (Philippine Inventory of Chemicals and Chemical Substances)	522 5600
BAGT: (Giftliste des BA für Abfall und Gesundheitswesen der Schweiz)	G 2950
METI: (Ministry of Economy, Trade and Industry - Japan)	1-558
SEPA: (State Environmental Protection Administration - China)	13463-67-7

15.2 Chemical safety assessment

The substance has undergone a safety assessment.

16. OTHER INFORMATION

Changes against last version

Integration of Sachtleben Pigment GmbH site products.

Hazard information which is referred to in section 2 or 3

According to Regulation (EC) No 1272/2008:

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According to Directive (EC) 67/548/EWG:

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(2011-TI-001-US)

DISCLAIMER: 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.