

<b>SAFETY DATA SHEET</b>	Page 1 of 8
	Issued on: September 16, 2020
Trade name: Titanium dioxide	Revised on: October 21, 2025
	Version: 3

1. Identification of the substance/mixture and of the company/undertaking		
1.1.	<b>Product identifier (Product registration number, nanoform, UFI):</b>	Titanium dioxide pigments ( <b>TMP grades</b> ): RC 813, RC 823, RC 833, RC 843, RC 853  REACH registration number: 01-2119489379-17-0014
1.2.	<b>Relevant identified uses of the substance/mixture and uses advised against:</b>	White pigment for application in paints, coatings, plastic material, paper, enamel, ceramics.  For industrial use only.
1.3.	<b>Details of the supplier of the safety data sheet (manufacturer, importer, only representative, downstream user or distributor)</b>	
1.3.1.	Supplier name:	CINKARNA, kemična industrija Celje, d.d.
1.3.2.	Supplier address and phone:	Kidričeva 26, SI-3001 CELJE, SLOVENIA, +386 3 427 60 00
1.3.3.	E-Mail (competent person):	erika.drobnak@cinkarna.si
1.4.	<b>Emergency phone number:</b>	In case of health risk, consult your doctor. Additional information available during working hours from 7 a.m. to 3 p.m.:  +386 3 427 65 84  +386 3 427 60 00
2. Hazards identification		
2.1.	<b>Classification of substance or mixture:</b>	Regulation (EC) No. 1272/2008: Not classified. Not a hazardous mixture.
2.2.	<b>Label elements:</b>	Not applicable.  Additional Labelling: EUH210 Safety data sheet available on request.
2.3.	<b>Other hazards:</b>	Mixture contains no persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) components at levels 0,1 % or higher.
3. Composition/information on ingredients		
3.1. /3.2.	<b>Substances/mixture: Mixture</b>	

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Chemical name	CAS No. EC No. Index No.	REACH Registration No. Reference No.	Concentration (% w/w)	Classification according to Regulation (EC) No. 1272/2008 (CLP)	SCL, M-factor, ATE
Titanium dioxide	13463-67-7 236-675-5	01-2119489379- 17-0014	80 – 99,5	Not classified	/
Trimethylolpropane (TMP)	77-99-6 201-074-9	01-2119486799- 10-XXXX	0,10 – 0,45	Reprotox. Cat. 2; H361fd	/

Additional Information: Please refer to section 16 of the SDS for full hazard statements.

Based upon reproductive toxicity study (OECD 443), the manufacturer and others of its consortium membership self - classified TMP as a suspected reproductive toxicant (Reprotox. Cat. 2). The group also determined new Derived No Effect Levels (DNEL). The new suggested TMP DNEL for workers by inhalation is 3,3 mg/m<sup>3</sup> (Long term, systemic).

#### 4. First aid measures

4.1.	<b>Description of first aid measures</b>	
4.1.1.	Inhalation:	Ensure fresh air. Seek medical help in case the symptoms do not disappear.
4.1.2.	Skin contact:	Rinse the skin with soap and water. Seek medical assistance if necessary.
4.1.3.	Eyes/mycosis contact:	Rinse with copious amount of water. Seek medical help if necessary.
4.1.4.	Ingestion:	Rinse the mouth with water. Seek medical assistance if necessary.
4.2.	<b>Most important symptoms and effects, acute and delayed:</b>	Dust may irritate the respiratory tract or cause coughing.
4.3.	<b>Indication of any immediate medical attention and special treatment needed:</b>	Special care is not required.

#### 5. Firefighting measures

5.1.	<b>Extinguishing media</b>	
5.1.1.	Appropriate media:	Use all extinguishing media that comply with the substances in the local environment.
5.1.2.	Inappropriate media:	Unknown.
5.2.	<b>Specific hazards arising from the substance or mixture:</b>	The product is not reactive, flammable or combustible.
5.3.	<b>Advice for firefighters:</b>	Additional protection is not required. Protection in accordance with other circumstances.

#### 6. Accidental release measures

6.1.	<b>Personal precautions protective equipment and emergency procedures</b>	
6.1.1.	For non-emergency persons:	Avoid inhalation of the dust and contact with skin or eyes. If necessary, use protective equipment such as goggles and gloves.
6.1.2.	For emergency responders:	If necessary, use protective equipment such as goggles and gloves.
6.2.	<b>Environmental precautions:</b>	Do not wash into surface water or sewage system.
6.3.	<b>Methods and material for containment and cleaning up</b>	
6.3.1.	Appropriate spillage retaining techniques (fencing, covering drains, retaining procedures):	Mechanically collect and remove without producing dust. Wet product may cause slippery floor.

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6.3.2.	Appropriate cleaning procedures	
	Neutralization techniques:	Product is neutral.
	Decontamination techniques:	Not required.
	Absorbent materials:	All inert absorbent material is appropriate.
	Cleaning techniques:	Carefully remove into the waste container (chapter 13).
	Suction techniques:	With vacuum cleaner and dust particle filter.
	Required equipment for retaining/cleaning:	Basic protective equipment such as goggles and gloves.
6.3.3.	Inappropriate cleaning or retaining techniques:	Cleaning with compressed air.
6.4.	<b>Reference to other sections:</b>	Section 8 (PPE), section 13 (disposal).

## 7. Handling and storage

7.1.	<b>Precautions for safe handling</b>	
7.1.1.	Recommendations shall be specified to:	Prevent inhalation of dust.
	Safe handling of substance or mixture:	Use basic protective equipment such as goggles and gloves.
	Prevent handling of incompatible substances or mixtures:	Not required.
	Operations and conditions which create new risks by altering the properties of the substance or mixture, and to appropriate countermeasure:	Unknown.
	Reduce the release of the substance or mixture to the environment:	Do not wash into surface water or sewage system.
7.1.2.	General working hygiene (prohibited eating, drinking and smoking within working area; washing hands ...):	Rules of basic working hygiene apply.
7.2.	<b>Conditions for safe storage, including any incompatibilities</b>	
	Management of risk associated with:	
	- explosive atmospheres:	No danger.
	- corrosive substances:	No danger.
	- incompatible substances or mixtures:	No danger.
	- evaporation substances:	The product is not volatile.
	- potential ignition sources:	No danger.
	How to control the effects of:	
	- weather conditions:	Store in closed and ventilated space.
	- ambient pressure:	Not required.
	- temperature:	Not required.
	- sunlight:	Not required.
	- humidity:	Store in closed and ventilated storage area. Long-term storage in humid spaces may influence some quality parameters.
	Securing integrity of substance or mixture by use of:	
	- stabilisers:	Not required.
	- antioxidants:	Not required.

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	Other advice including:	
	- ventilation requirements:	Not required.
	- specific designs for storage rooms or vessels (including retention walls and ventilation):	Not required.
	- quantity limitations regarding storage conditions:	Not required.
	- packaging compatibility:	Not required.
7.3.	<b>Specific end use(s):</b>	Unknown.

## 8. Exposure control/personal protection

8.1.	<b>Control parameters</b>	
8.1.1.	Limit values (LV):	Inhalable 10 mg/m <sup>3</sup> , respirable 1,25 mg/m <sup>3</sup> (general dust)
	DNEL:	1,25 mg/m <sup>3</sup>
8.1.2.	PNEC:	Freshwater: > 0,127 mg/L Freshwater deposits: > 1000 mg/kg Sea water: > 0,62 mg/L Sea water deposits: > 100 mg/kg Soil: > 100 mg/kg Wastewater treatment plant: > 100 mg/kg
8.2.	<b>Exposure control</b>	
8.2.1.	Appropriate engineering controls:	Enable ventilation of working areas in order to keep the workers' exposure within limit values.
8.2.2.	Personal protective equipment:	
	- respiratory protection:	In case dusting occurs, use anti dust respirators FFP3 (EN 149).
	- skin protection:	Work clothing.
	- hand protection:	Gloves.
	- eye/face protection:	Protective goggles closed on the sides (EN 166).
	- heat radiation protection:	Not required.
	Other:	Washing hands before breaks and at the end of working hours.
8.2.3.	Environment exposure control:	Not required.

## 9. Physical and chemical properties

9.1.	<b>Information on basic physical and chemical properties</b>	
	Physical state:	Solid, crystalline
	Color:	White
	Odor:	Odourless
	pH:	Not applicable (solid substance).
	Melting/freezing point:	1843 °C
	Boiling point or initial boiling point and boiling range:	3000 °C

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	Flash point:	Does not flash.
	Auto-ignition temperature:	No data available.
	Flammability (solid, gas):	The product is not flammable.
	Lower and upper explosion limit:	The product is not flammable or explosive.
	Vapor pressure:	Not applicable (solid substance).
	Density and/or relative density:	3,4 - 4,3 kg/dm <sup>3</sup>
	Solubility:	The product is not soluble.
	Partition coefficient (n-octanol-water):	Not applicable (solid substance).
	Decomposition temperature:	The product does not decompose.
	Kinematic viscosity:	Not applicable (solid substance).
	Relative vapour density:	Not applicable (solid substance).
	Particle characteristics:	Amount of particles with an aerodynamic diameter $\leq 10 \mu\text{m}$ in the products from Section 1.1 is below 1 % according to method EN 15051-2; see also Section 11.1 carcinogenicity.

9.2.	<b>Other information</b>	
9.2.1.	Information on physical hazard classes	
	Explosives:	Not applicable.
	Flammable gases:	Not applicable.
	Aerosols:	Not applicable.
	Oxidising gases:	Not applicable.
	Flammable liquids:	Not applicable.
	Flammable solids:	Not applicable.
	Corrosive to metals:	Not applicable.
9.2.2.	Other safety-related parameters:	Not applicable.

<b>10. Stability and reactivity</b>		
10.1.	<b>Reactivity:</b>	The product is not reactive.
10.2.	<b>Chemical stability:</b>	The product is stable under normal conditions.
10.3.	<b>Possible hazardous reactions:</b>	No danger.
10.4.	<b>Conditions to avoid:</b>	Unknown.
10.5.	<b>Incompatible materials:</b>	Unknown.
10.6.	<b>Hazardous decomposition products:</b>	No dangerous decomposition known.

<b>11. Toxicological data</b>		
11.1.	<b>Information on hazard classes as defined in Regulation (EC) No. 1272/2008</b>	
	Acute toxicity:	No classification
		Acute oral toxicity: Titanium dioxide: LD 50 / rat > 5000 mg/kg Trimethylolpropane (TMP): LD 50 / rat > 14000 mg/kg

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		Acute oral toxicity by inhalation: Titanium dioxide: LD 50 / 4h rat > 6,82 mg/L Trimethylolpropane (TMP): LD 50 / 4h rat > 0,29 mg/L
	Skin corrosion/irritation:	Does not cause skin irritation.
	Serious eye damage/irritation:	Does not cause eye irritation or is slightly irritating to eyes.
	Respiratory or skin sensitisation:	Inhalation of dust may cause nose, throat or lung irritation. If not removed in time, it can cause irritation of the mucous membrane. When ingested, it does not have harmful effects.
	Germ cell mutagenicity:	Tests for bacterial cultures and mammal cell cultures did not show any mutagenic effects.
	Carcinogenicity:	Not classified based on available information. Remarks: Pursuant to the judgment of the Court of Justice of the European Union (CJEU) in Joined Cases C-71/23 P and C-82/23 P, confirmed on 1 August 2025, the classification of titanium dioxide (TiO <sub>2</sub> ) as a carcinogenic substance has been annulled.
	Toxicity for reproduction:	It is not toxic for reproduction.
	STOT – single exposure:	Unknown.
	STOT – repeated exposure:	Unknown.
	Aspiration hazard:	Inhalation of dust may cause nose, throat or lung irritation.
11.2.	<b>Other adversative effects</b>	
	Endocrine disrupting properties:	None of the ingredients is listed.

## 12. Ecological information

12.1.	<b>Toxicity:</b>	<p>Toxicity for fish:</p> <p>CAS: 13463-67-7 titanium dioxide</p> <p>LC50 / 96 h / Pimephales promelas (fathead minnow): &gt; 1000 mg/L</p> <p>LC50 / 96 h / Alburnus alburnus: &gt; 1000 mg/L</p> <p>Toxicity for aquatic organisms:</p> <p>CAS: 13463-67-7 titanium dioxide</p> <p>EC50 / 72 h / Pseudokirchneriella subcapitata (green algae): 61 mg/L</p> <p>CAS: 77-99-6 trimethylolpropane</p> <p>EC50 / 72 h / Pseudokirchneriella subcapitata (green algae): &gt;1000 mg/L</p> <p>Toxicity for aquatic invertebrates:</p> <p>CAS: 13463-67-7 titanium dioxide</p> <p>EC50 / 48 h / Daphnia magna (water flea): &gt; 1000 mg/L</p> <p>CAS: 77-99-6 trimethylolpropane</p> <p>EC50 / 48 h / Daphnia magna (water flea): 13000 mg/L</p>
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12.2.	<b>Persistence and degradability:</b>	The product is bio non-degradable and insoluble in water.
12.3.	<b>Bioaccumulative potential:</b>	The product does not accumulate in organisms.
12.4.	<b>Mobility in soil:</b>	Unknown.
12.5.	<b>Results of PBT and vPvB assessment:</b>	Product contains no persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) components at levels 0,1 % or higher.
12.6.	<b>Endocrine disrupting properties:</b>	Mixture does not contain components considered to have endocrine disrupting properties.
12.7.	<b>Other adversative effects:</b>	Unknown.

### 13. Disposal considerations

13.1.	<b>Waste treatment methods:</b>	Disposal and removal in accordance with local and state regulations.
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### 14. Transport information

	<b>ADR, RID, ADN, IMDG, ICAO-TI/IATA-DGR</b>	According to international transport law, the product is not labelled as hazardous.
14.1.	<b>UN number or ID number:</b>	According to international transport law, the product is not labelled as hazardous.
14.2.	<b>UN proper shipping name:</b>	Titanium dioxide.
14.3.	<b>Transport hazard class(es):</b>	Not required.
14.4.	<b>Packaging group:</b>	Not restricted.
14.5.	<b>Environmental hazards:</b>	According to international transport law, the product is not labelled as hazardous.
14.6.	<b>Special precautions for user:</b>	Not required.
14.7.	<b>Maritime transport in bulk according to IMO instruments:</b>	Not restricted.

### 15. Regulatory information

15.1.	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture:</b>	The products are not listed as SVHC, it does not contain any substances of very high concern.
15.2.	<b>Chemical safety assessment:</b>	Chemical safety assessment has been carried out.

### 16. Other information

	Amendments made in the revised edition:	Safety data sheet is amended in all sections in order to harmonize with applicable legislation.
	List of relevant, hazard statements, safety phrases and/or precautionary statements. Write out the full text of any statement which are not written out in full under Sections 2 to 15:	H361 Suspected of damaging fertility or the unborn child. H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
	In the case of mixtures, an indication of which of the methods of evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 was used for the purpose of classification:	Trimethylolpropane (TMP): based on the results of a reproductive toxicity study conducted by TMP suppliers, TMP has been self-classified as a suspected reproductive toxicant (Reprotox. Cat. 2), indicating potential effects on fertility and embryonic development.  As the level of TMP in product is below the threshold value of 3 %, no classification of the mixture under EU regulations is required.
	Training of personnel:	In accordance with the law on safety and health at work.

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	Key literature references and sources for data:	<p>Official Gazette of the Republic of Slovenia No.: 110/03, 16/08, 43/11, 35/05, 54/07, 70/08, 88/08, 126/08, 84/06, 106/06, 110/07, 34/08.</p> <p>Regulation (EC) No.: 1907/2006, 1272/2008, 453/2010, 23/2008, 56/2010, 2015/830.</p>
	A key or legend to abbreviation and acronyms used in the safety data sheet:	<p>PBT – persistent, bio accumulative and toxic</p> <p>vPvB – very persistent and very bio accumulative</p> <p>STOT – specific target organ toxicity</p> <p>DNEL – Derived No Effect Level</p> <p>PNEC – predicted no effect concentration</p> <p>ADR – European agreement concerning the international carriage of dangerous goods by road</p> <p>RID – International rule for transport of dangerous substances by railway</p> <p>ADN – European agreement concerning the International carriage of dangerous goods by inland waterways</p> <p>IMDG – International maritime dangerous goods code</p> <p>ICAO-TI – Technical instructions for the safe transport of dangerous goods by air</p> <p>IATA – International air transport association</p> <p>TMP – Trimethylolpropane</p>

Data specified above are based on research and experience of the supplier at the time of compiling the present MSDS. The supplier may not assume responsibility in case the buyer/user should fail to use the product in accordance with the relevant suggestions and recommendations. No information contained in the present MSDS may release the buyer/user from liability to strictly follow any legal requirements regarding his business activities.