

SAFETY DATA SHEET	Page 1 of 8
	Issued on: 26 August, 2023
Trade name: Titanium dioxide	Revised on: /
	Version: 0

1. Identification		
1.1.	Product identifier:	Titanium dioxide pigments (TMP grades) RC 813, RC 823, RC 833, RC 843, RC 853
1.2.	Other means of identification:	Titanium dioxide
1.3.	Recommended use of the chemical and restrictions on use	
1.3.1.	Recommended use:	Pigment
1.3.2.	Restrictions on use:	White pigment for application in paints, coatings, plastic material, paper, enamel, ceramics. For industrial use only.
1.4.	Details of the supplier of the safety data sheet	
1.4.1.	Supplier name:	CINKARNA, Metallurgical and Chemical Industry CELJE, Inc.
1.4.2.	Supplier address and phone:	Kidričeva 26, SI-3001 CELJE, SLOVENIA, +386 3 427 60 00
1.4.3.	E-Mail (competent person):	boza.suk-lubej@cinkarna.si
1.5.	Emergency phone number:	In case of health risk, consult your doctor. Additional information during working hours from 7 a.m. to 3 p.m.: +386 3 427 65 81 +386 3 427 60 00
2. Hazards identification		
2.1.	Classification	
2.1.1.	Reproductive toxicity:	Category 2
2.2.	Hazards not otherwise classified (HNOC):	Not applicable
2.3.	Label elements	
2.3.1.	Hazard pictogram:	
2.3.3.	Signal Word:	Warning
2.3.2.	Hazard statements:	H361fd Suspected of damaging fertility. Suspected of damaging unborn child.
2.3.3.	Precautionary Statements – Prevention:	P202 Do not handle until all safety precautions have been read and understood.
2.4.	Other information:	In the U.S. (per OSHA HCS), a manufacturer is required to classify a mixture as a reproductive hazard when it contains an ingredient classified as a reproductive hazard at a concentration above the specified concentration limit of 0.1 % unless the manufacturer has data demonstrating that the product does not present that health risk. This hazard classification applies to a single ingredient (Trimethylolpropane) present at levels < 0.45 % by weight in the finished product.

Trade name: Titanium dioxide

3. Composition/information on ingredients

3.1.	Substance:	Not applicable		
3.2.	Mixture			
	Chemical name	CAS No.	Concentration (% w/w)	Trade secret
	Titanium dioxide	13463-67-7	80 – 99.5	*
	Trimethylolpropane (TMP)	77-99-6	0.10 – 0.45	*

Additional Information:

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First aid measures

4.1.	Description of first aid measures		
4.1.1.	General advice:	Get medical advice/attention if you feel unwell.	
4.1.2.	Inhalation:	Ensure fresh air. Seek medical help in case the symptoms do not disappear.	
4.1.3.	Eyes/mycosis contact:	Rinse with copious amount of water. Seek medical help if necessary.	
4.1.4.	Skin contact:	Rinse the skin with soap and water. Seek medical assistance if necessary.	
4.1.5.	Ingestion:	Rinse the mouth with water. Seek medical assistance if necessary.	
4.1.6.	Self-protection of the first aider:	Use personal protective equipment as required.	
4.2.	Most important symptoms and effects, acute and delayed:	Dust may irritate the respiratory tract or cause coughing.	
4.3.	Indication of any immediate medical attention and special treatment needed:	Special care is not required.	

5. Firefighting measures

5.1.	Extinguishing media		
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.	Specific hazards arising from the substance or mixture:	The product is not reactive, flammable or combustible.	
5.3.	Hazardous combustion products:	Non-combustible.	
5.4.	Explosion data		
5.4.1.	Sensitivity to mechanical impact:	Not impact sensitive.	
5.4.2.	Sensitivity to static discharge:	Sensitivity to static discharge.	
5.5.	Special protective equipment for firefighters:	Protective equipment and precautions for firefighters.	

6. Accidental release measures

6.1.	Personal precautions protective equipment and emergency procedures		
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.	

Trade name: Titanium dioxide

6.2.	Environmental precautions:	Do not wash into surface water or sewage system.
6.3.	Methods and material for containment and cleaning up	
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.
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.	Reference to other sections:	Section 8 (PPE), section 13 (disposal)

7. Handling and storage

7.1.	Precautions for safe handling	
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.	Conditions for safe storage, including any incompatibilities	
	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.

Trade name: Titanium dioxide

	- 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:	
	- stabilizers:	Not required.
	- antioxidants:	Not required.
	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.	Specific end use(s):	Unknown.

8. Exposure control/personal protection

8.1.	Control parameters		
8.1.1.	Exposure Limits:		
	Chemical name	CAS No.	ACGIH TLV
	Titanium dioxide	13463-67-7	TWA: 10 mg/m ³
			OSHA PEL TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust
8.1.2.	Limit values (LV):	Inhalable 10 mg/m ³ , respirable 1.25 mg/m ³ (general dust)	
8.2.	Exposure control		
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.	
	- skin protection:	Work clothing.	
	- hand protection:	Gloves.	
	- eye/face protection:	Protective goggles closed on the sides.	
	- heat radiation protection	Not required.	
	- general hygiene considerations:	Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash it before reuse.	
	- thermal hazards:	None under normal processing.	
	Other:	Washing hands before breaks and at the end of working hours.	
8.2.3.	Environment exposure control:	See Section 12 for additional Ecological Information.	

Trade name: Titanium dioxide

9. Physical and chemical properties

9.1.	Information on basic physical and chemical properties	
	Physical state:	Solid, crystalline
	Colour:	White
	Odour:	Odourless
	pH:	Not applicable (solid substance).
	Melting/freezing point:	1843 °C
	Boiling point or initial boiling point and boiling range	3000 °C
	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.
	Vapour pressure:	Not applicable (solid substance).
	Density and/or relative density:	3.4 – 4.3 kg/dm ³
	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 ≤ 10 µm in the products from Section 1.1 is below 1 % according to method EN 15051-2.

9.2. Other information

9.2.1.	Information on physical hazard classes	
	Explosives:	Not applicable.
	Flammable gases:	Not applicable.
	Aerosols:	Not applicable.
	Oxidizing 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.

10. Stability and reactivity

10.1.	Reactivity:	The product is not reactive.
10.2.	Chemical stability:	The product is stable under normal conditions.
10.3.	Possible hazardous reactions:	No danger.
10.4.	Conditions to avoid:	Unknown.
10.5.	Incompatible materials:	Unknown.

Trade name: Titanium dioxide

10.6.	Hazardous decomposition products:	No dangerous decomposition known.
-------	--	-----------------------------------

11. Toxicological data

11.1. Information on likely routes of exposure

11.1.1.	Product Information:	Product does not present an acute toxicity hazard based on known or supplied information.
	- Inhalation:	Inhalation of dust in high concentration may cause irritation of respiratory system.
	- Eye contact:	Inert foreign body hazard only.
	- Skin contact:	Repeated exposure may cause skin dryness or cracking.
	- Ingestion:	Not an expected route of exposure.

11.2. Acute toxicity

Chemical name	CAS No.	Oral LD50	Dermal LD50	Inhalation LC50
Titanium dioxide	13463-67-7	> 5000 mg/kg (Rat)	-	> 6.82 mg/L
Trimethylolpropane (TMP)	77-99-6	> 14000 mg/kg (Rat)	-	> 0.29 mg/L

11.3. Delayed and immediate effects as well as chronic effects from short and long-term exposure

	- Serious eye damage/irritation:	Does not cause eye irritation or is slightly irritating to eyes.
	- Skin corrosion/irritation:	Does not cause skin irritation.
	- Respiratory or skin sensitization:	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. IARC GROUP 2B: Possibly carcinogenic to humans Titanium Dioxide, 13463-67-7 OSHA No component of this product present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA. NTP No ingredient of this product present at levels greater than or equal to 0.1 % is identified as a known or anticipated carcinogen by NTP.
	- Toxicity for reproduction:	Suspected of damaging fertility. Suspected of damaging the unborn child. Mixture contains ingredient suspected toxic for reproduction (TMP) in concentrations up to 0.45 %.
	- STOT – single exposure:	Unknown.
	- STOT – repeated exposure:	Unknown.
	- Aspiration hazard:	Inhalation of dust may cause nose, throat or lung irritation.
	- Endocrine disrupting properties:	None of the ingredients is listed.

Trade name: Titanium dioxide

12. Ecological information

12.1.	Toxicity:	<p>Toxicity for fish:</p> <p>CAS: 13463-67-7 titanium dioxide</p> <p>LC50 / 96 h / Pimephales promelas (fathead minnow): > 1000 mg/L</p> <p>LC50 / 96 h / Alburnus alburnus: > 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): > 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): > 1000 mg/L</p> <p>CAS: 77-99-6 trimethylolpropane</p> <p>EC50 / 48 h / Daphnia magna: 13000 mg/L</p>
12.2.	Persistence and degradability:	The product is bio non-degradable and insoluble in water.
12.3.	Bioaccumulative potential:	The product does not accumulate in organisms.
12.3.1.	TMP Partition coefficient n-octanol/water:	log Pow: - 0.47 (26 °C)
12.4.	Mobility in soil:	Unknown.
12.5.	Results of PBT and vPvB assessment:	Mixture contains no persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative(vPvB) components at levels 0.1 % or higher.
12.6.	Endocrine disrupting properties:	Mixture does not contain components considered to have endocrine disrupting properties.
12.7.	Other adversative effects:	Unknown.

13. Disposal considerations

13.1.	Waste treatment methods:	Disposal and removal in accordance with local and state regulations.
-------	---------------------------------	--

14. Transport information

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

Cinkarna Celje, SAFETY DATA SHEET	Page 8 of 8
Trade name: Titanium dioxide	

14.7.	Maritime transport in bulk according to IMO instruments:	Not restricted.
-------	---	-----------------

15. Regulatory information

15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture:	The products are not listed as SVHC, it does not contain any substances of very high concern.
15.2.	Chemical safety assessment:	Chemical safety assessment has been carried out.
15.3.	US regulations	Titanium dioxide is placed on the California Proposition 65 List as airborne, unbound particles of respirable size.

16. Other information

	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:	H361fd Suspected of damaging fertility. Suspected of damaging unborn child.
	Training of personnel:	In accordance with the law on safety and health at work.
	Key literature references and sources for data:	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. Regulation (EC) No.: 1907/2006, 1272/2008, 453/2010, 23/2008, 56/2010, 2015/830. California Proposition 65.
	A key or legend to abbreviation and acronyms used in the safety data sheet:	PBT – persistent, bio accumulative and toxic vPvB – very persistent and very bio accumulative STOT – specific target organ toxicity DNEL – derived no effect levels ADR – European agreement concerning the international carriage of dangerous goods by road RID – International rule for transport of dangerous substances by railway ADN – European agreement concerning the International carriage of dangerous goods by inland waterways IMDG – International maritime dangerous goods code ICAO-TI – Technical instructions for the safe transport of dangerous goods by air IATA – International air transport association IARC – International Agency for Research on Cancer OSHA – Occupational Safety and Health Administration NTP – National Toxicology Program
	Issued Date:	26 August, 2023
	Revised Date:	/

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 SMDS may release the buyer/user from liability to strictly follow any legal requirements regarding his business activities.