

 Zakłady Chemiczne „Police” S.A.	SAFETY DATA SHEET <i>according to Regulation (EC) 1907/2006</i>	SDS-ZChP- 019/10 Version 09	
	TYTANPOL® - Titanium dioxide	Date of:	
		<i>compilation</i> 02.11.2010	<i>revision</i> 21.09.2021

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

1.1. Product identifier

<i>Trade name</i>	TYTANPOL®
<i>Chemical name</i>	Titanium dioxide
<i>Product Codes (class)</i>	RS, RD-5
<i>Commonly used synonyms</i>	Titanium white, titanium dioxide, PW 6, C.I. 77891
<i>Chemical formula</i>	TiO ₂
<i>CAS number</i>	13463-67-7
<i>WE number</i>	236-675-5
<i>Registration number</i>	01-2119489379-17-0004

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

The most common uses are:

White pigment used as colouring and opacifying agent in the following industries: paints and varnishes, plastics, synthetic fibres, paper, rubber, ceramics, cement, cosmetics and printing. Uses advised against have not been identified.

1.3. Details of the supplier of the safety data sheet

Grupa Azoty Zakłady Chemiczne "Police" S.A.
Internet: grupaazoty.com

ul. Kuźnicka 1, 72-010 Police
Phone: + 48 91 317 1090
Telefax: + 48 91 317 3103

Person responsible for the safety data sheet:

e-mail: reach-sds@grupaazoty.com

1.4. Emergency telephone number

Chief Dispatcher

Emergency phone number: + 48 91 317 1616 (24h)
Phone: + 48 91 317 4201 (24h)

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

According to Regulation (EC) no. 1272/2008 the substance is not classified as hazardous.

Human health effects

<i>Skin effects</i>	Skin is not penetrated, but prolonged contact can cause irritation.
<i>Eyes effect</i>	Feeling of a chemically neutral body in the eyes.
<i>Swallowing</i>	No hazard during normal industrial use.

<i>Inhalation</i>	Chemically neutral dust. Excessive exposure may cause temporary drying effect and/or irritation of mucous membranes.
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2.2. Label elements

According to Regulation (EC) no. 1272/2008 the substance is not classified as hazardous.

2.3. Other hazards

Titanium dioxide is neither a PBT nor a vPvB substance.

Risk of atmosphere dusting.

SECTION 3: Composition/information on ingredients

3.1. Substances

Component	% w/w	CAS number	WE number
Titanium dioxide, TiO ₂ (in powder form containing <1 % of particles with aerodynamic diameter ≤ 10 µm)	min. 90	13463-67-7	236-675-5

SECTION 4: First aid measures

4.1. Description of first aid measures

<i>Inhalation</i>	Move or carry the victim from the dusty area to fresh air. Keep the warm and calm. If not breathing, irregular breathing or when breathing has ceased call a physician and designated personnel shall perform cardiopulmonary resuscitation.
<i>Skin contact</i>	Remove contaminated clothing and shoes, wash with soap and water.
<i>Eye contact</i>	Remove contact lenses. Immediately rinse with a lot of water for at least 15 minutes. If irritation persists, consult a doctor.
<i>Swallowing</i>	The material is non-toxic and does not persist in the digestive tract. No negative effects for the health after exposure through this route are expected, however in the case of ingestion increase intake of liquid to flush the substance from the organism. Should negative symptoms occur and persist, consult with a doctor.

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

Acute and delayed symptoms and effects do not occur in normal conditions of use of (see section 11).

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

Medical assistance is needed in case of inhalation of large amounts of dust.

SECTION 5: Firefighting measures

5.1. Extinguishing media

<i>Suitable extinguishing media</i>	Water and any media appropriate for burning materials.
<i>Unsuitable extinguishing media</i>	None

5.2. Special hazards arising from the substance or mixture

TYTANPOL® pigments are non-flammable and does not increase fire hazard. Packing materials (paper, plastics) are flammable materials. Fire of packing materials extinguish with water. No hazardous combustion products.

5.3. Advice for firefighters

The product is neutral, does not burn and is non-flammable. Usual protective equipment for fire fighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid producing and inhaling dusts. In case of excessive dusting use dustproof goggles and dust mask protecting respiratory system. Provide adequate ventilation.

Pigments are not irritating but can absorb moisture and natural oils from the surface of the skin. In case of prolonged exposure, use protective clothes and gloves.

6.2. Environmental precautions

Prevent run-off from entering ground to storm sewers and water bodies and waterways.

6.3. Methods and material for containment and cleaning up

Spilt titanium dioxide pigment waste shall be swept or collected with a shovel (avoiding dust formation) to a labelled container and transfer for recovery or neutralization following environmental protection regulations.

Product can cause slippery conditions if wet. Even at low concentration, the product renders that discharged waste water is highly visible.

6.4. Reference to other sections

See section 13 for waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

TYTANPOL® pigments may cause dust formation due to their fine grain size. The transport and reloading system should be designed in such a manner to minimize dust release.

It is recommended to use an efficient local and general ventilation.

Pneumatic transport of the product and the use of plastic packaging (bags, film) can generate electrostatic charges. Suitable precautions should be maintained when performing such activities.

TYTANPOL® pigments can be packed without delay after production and depending on storage conditions may retain for a very long time elevated temperature (up to 70°C), therefore care must be taken when handling these products, particularly when introducing them to production with solvents.

Local exhaust ventilation systems may be necessary. Limit dust formation to the minimum and ensure systematic dust removal in production and storage rooms. Take precautions to prevent electrostatic discharge.

Note: If wet the product may result in slippery surfaces!

7.2. Conditions for safe storage, including any incompatibilities

Protect the packaged product against packaging damage, store in a covered place not exposed to outdoor conditions, with relative humidity not exceeding 70%. Pigmenting properties of product may be deteriorated by excessive compression and for this reason during stacking do not exceed number of 3 layers of pallets.

Any unintentional contact with water should be avoided since moisture detrimentally affects the product. Avoid breathing dust. Follow good industrial hygiene practice concerning

chemicals handling. Handling systems and areas should be operated in order to reduce dust exposure.

7.3. Specific end use(s)

Titanium dioxide is not classified as a dangerous substance. Exposure scenarios have not been made.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

	Limit value - Eight hours	Limit value - Short term
	mg/m ³	mg/m ³
<i>Belgium</i>	10	-
<i>Denmark</i>	6 (total dust)	12 (total dust)
<i>France</i>	11 (inhalable aerosol)	-
<i>Ireland</i>	10 (inhalable fraction), 4 (respirable fraction)	-
<i>Latvia</i>	10	36
<i>Poland</i>	10 (inhalable fraction)	-
<i>Romania</i>	10	15 (15 minutes average value)
<i>Spain</i>	10 (inhalable fraction)	-
<i>Sweden</i>	5 (inhalable aerosol)	-
<i>Switzerland</i>	3 respirable aerosol	-
<i>USA - OSHA</i>	15 total dust	-
<i>United Kingdom</i>	10 (inhalable fraction), 4 (respirable fraction)	-

Source of information: <http://limitvalue.ifa.dguv.de/>

8.2. Exposure controls

Personal protection equipment

<i>Eye or face protection</i>	It is recommended to use dustproof goggles or glasses with side protections (tightly fitting around the eyes).
<i>Skin protection</i>	Use protective clothing selected depending on the work performed and the related hazard, resulting from occupational risk assessment on the given work position.
<i>Hand protection</i>	Use protective gloves selected depending on the work performed and the related hazard, resulting from occupational risk assessment on the given work position.
<i>Respiratory protection</i>	Use protective masks selected depending on the work performed and the related hazard (dust concentration in the work environment), resulting from occupational risk assessment on the given work position. Recommended: Dust mask - FFP2 type according to EN 149.

Personal protective equipment for first-aiders

If allowed dust concentration limit is exceeded use an appropriate dust respirator and protective glasses (goggles).

Collective protection equipment

Use installation dust extraction systems and ensure efficient general ventilation and local exhaust ventilation maintaining dust concentration below the occupational exposure limit. If the concentration is exceeded, use personal protection equipment as above.

Personal hygiene measures

People with sensitive skin would benefit from using a barrier cream or lotion, in anticipation of excessive or prolonged skin contact.

Environmental exposure controls

Do not remove the substance to storm sewage and natural water courses. Prevent contamination of underground waters.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<i>Substance type</i>	Inorganic substance						
<i>Appearance/physical state/colour/odour</i>	Solid (at temp. 20°C, 101,3 kPa), white powder, odour barely perceptible						
<i>Melting point (at 1013 hPa)</i>	Rutile: 1843°C						
<i>Boiling point (at 1013 hPa)</i>	3000°C						
<i>Relative density at 20°C</i>	Rutile: 4.26						
<i>Solubility in water</i>	Practically insoluble						
<i>Vapour pressure</i>	Not applicable - solid with melting point of over 300°C						
<i>Surface tension</i>	Not Applicable						
<i>Partition coefficient n-octanol/water</i>	Not applicable to inorganic substances						
<i>Flash point</i>	Not applicable to inorganic substances						
<i>Flammability</i>	Non-flammable						
<i>Explosive properties</i>	No explosive properties						
<i>Auto-ignition temperature</i>	Not Applicable						
<i>Oxidizing properties</i>	No oxidizing properties						
<i>Stability in organic solvents and identity of relevant degradation products</i>	Not applicable to inorganic substances						
<i>Dissociation constant</i>	Not Applicable						
<i>Viscosity</i>	Not applicable to a solid in room temperature						
<i>Particle characteristics</i>	Percentage of particles with aerodynamic diameter $\leq 10 \mu\text{m}$ (EN 15051-3 method): <table border="1"> <thead> <tr> <th>Average (%)</th> <th>Minimum (%)</th> <th>Maximum(%)</th> </tr> </thead> <tbody> <tr> <td>0,009</td> <td>0,007</td> <td>0,012</td> </tr> </tbody> </table>	Average (%)	Minimum (%)	Maximum(%)	0,009	0,007	0,012
Average (%)	Minimum (%)	Maximum(%)					
0,009	0,007	0,012					

9.2. Other information

No further details

SECTION 10: Stability and reactivity**10.1. Reactivity**

Non-reactive.

10.2. Chemical stability

Substance is stable in normal conditions.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None.

10.5. Incompatible materials

Substance Chemically non-reactive, insoluble in acids and bases (with the exception for concentrates sulphuric acid and concentrated hydrofluoric acid).

10.6. Hazardous decomposition products

None known.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

<i>Acute toxicity</i>	oral route	not observed
<i>Irritant/corrosive effects</i>	on skin	not irritant
	to eyes	
	to respiratory tract	
<i>Sensitizing effects</i>	not sensitizing	
<i>Repeated dose toxicity</i>	oral route	not observed
	on skin	
	to respiratory tract	
<i>Mutagenic effects</i>	Genotoxicity: negative	
<i>Carcinogenicity</i>	not observed or no testing available	
<i>Reproductive toxicity</i>	not observed or no testing available	

SECTION 12: Ecological information**12.1. Toxicity**

Titanium dioxide does not meet toxicity criterion (T).

Assessment of threat to aquatic environment (including sediment)

<i>Short-term toxicity to fish</i>	LC50 ¹ for fish (freshwater) > 1000 mg/l LC50 for fish (saltwater) > 10000 mg/l
<i>Chronic toxicity for fish</i>	NOEC for fish (freshwater) ≥ 500 - 1000 mg/l
<i>Short-term toxicity to aquatic invertebrates</i>	EC50 ² /LC50 for freshwater invertebrates > 1000 mg/l EC50/LC50 for marine invertebrates > 10000 mg/l

¹ LC50 Lethal concentration

² EC50 Half maximal effective concentration

<i>Chronic toxicity for aquatic invertebrates</i>	EC50: > 10 mg/l for aquatic invertebrates (<i>Daphnia magna</i>)
<i>Algae and aquatic plants</i>	NOEC \geq 100 mg/l for algae/cyanobacteria (freshwater) NOEC \geq 5600 mg TiO ₂ /l for algae/cyanobacteria (marine waters)
<i>Benthic organisms</i>	EC10/LC10 or NOEC (freshwater) > 100000 mg/kg dry weight EC10/LC10 or NOEC (saltwater) > 14989 mg/kg dry weight
<i>Aquatic microorganisms (wastewater treatment plant)</i>	EC10/LC10 or NOEC > 10000 mg/l

Assessment of threat to terrestrial environment

<i>Soil organisms, including microbes, plants and invertebrates</i>	EC10/LC10 or NOEC > 1000 mg/kg dry weight
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12.2. Persistence and biodegradability

Titanium dioxide does not fulfill persistent (P) nor very persistent (vP) criteria.

12.3. Bioaccumulative potential

Titanium dioxide does not fulfill the B and vB criteria.

12.4. Mobility in soil

Titanium dioxide pigments have very low mobility, because they are insoluble in water and other solvents.

12.5. Results of PBT and vPvB assessment

Titanium dioxide is neither a PBT nor a vPvB substance.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Remove the waste of the titanium dioxide pigment and packaging wastes according to environmental regulations (including both wastes and packaging regulations) and transfer adequately to the recovery or disposal.

Packaging not classified as hazardous waste.

In case of titanium dioxide spill - see Section 6 of the safety data sheet.

SECTION 14: Transport information

The Titanium dioxide is not classified, i.e. it is not considered a hazardous material in accordance with the UN Orange Book and international transport codes e.g. RID (railway), ADR (road transport) i IMDG (sea transport)

14.1. UN-Number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(-es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for users

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****EU Regulations**

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EEC and 2000/21/EC (with later changes).
- 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (with later changes).

15.2. Chemical safety assessment

Chemical safety assessment has been performed.

SECTION 16: Other information**Trainings**

Personnel with direct contact with the Substance shall be familiarized with this safety data sheet

Revisions

Sections: 1, 3, 9, 16.