

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 1

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product Identifier

Product Name: Titanium White Rutile

Article No.: 46200

UFI: --

1.2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:

*Coloring agent, pigment
Only for industrial purposes.*

Uses advised against:

1.3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company: Kremer Pigmente GmbH & Co. KG

Address: Hauptstr. 41-47, 88317 Aichstetten, Germany

Tel./Fax.: Tel +49 7565 914480, Fax +49 7565 1606

Internet: www.kremer-pigmente.com

E-Mail: info@kremer-pigmente.com

Importer: --

1.4. Emergency No.

Emergency No.: +49 7565 914480 (Mon-Fri 8:00 - 17:00)

1.4.2 Poison Center:

2. Hazards Identification

2.1. Classification of the Substance or Mixture

*Classification according to Regulation
(EC) No. 1272/2008 (CLP/GHS)*

This product does not require classification and labelling as hazardous according to CLP/GHS.

Possible Environmental Effects:

2.2. Label Elements

*Classification according to Regulation
(EC) No. 1272/2008 (CLP/GHS)*

This product does not require classification and labelling as hazardous according to CLP/GHS.

Hazard designation:

Not applicable.

Signal word:

Hazard designation:

Safety designation:

Hazardous components for labelling:

2.3. Other Hazards

*After skin contact: can cause mechanical irritation or drying of the
next page: 2*

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 2

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

skin.

After eye contact: dust can lead to mechanical irritation.

3. Composition/Information on Ingredients

3.1. Substance

3.2. Mixture

Chemical Characterization: Titanium dioxide

Information on Components / Hazardous Ingredients:

Titanium dioxide; REACH Reg. No. 01-2119489379-17-0016

90 - 100 % CAS-Nr: 13463-67-7
EINECS-Nr: 236-675-5
EC-Nr: 022-006-00-2

Additional information:

4. First Aid Measures

4.1. Description of the First Aid Measures

General information:

Seek medical attention in case of complaints.

After inhalation:

Supply fresh air.

Consult physician if symptoms persist.

After skin contact:

Wash with soap and rinse with plenty of water.

If symptoms persist, consult a physician.

After eye contact:

Rinse open eye for several minutes under running water.

Seek medical attention if irritation persists.

After ingestion:

Do not induce vomiting.

Rinse mouth with plenty of water.

If symptoms persist consult physician.

4.2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Skin contact: can cause mechanical irritation or drying of the skin.

Eye contact: can cause mechanical irritation.

Effects:

No further information available.

4.3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

Treat symptomatically.

5. Fire-Fighting Measures

5.1. Extinguishing Media

Suitable extinguishing media:

next page: 3

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 3

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

*Product itself does not burn.
Use extinguishing media for surrounding fire.*

Unsuitable extinguishing media:

None known.

5.2. Special Hazards arising from the Substance or Mixture

Special hazards:

No risk of fire or explosion.

5.3. Advice for Firefighters

Protective equipment:

*Wear suitable protective clothing.
Wear self-contained respiratory protective device.*

Further information:

*Not combustible.
Cool exposed containers with water spray.*

6. Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear protective clothing.

6.2. Environmental Precautions

Environmental precautions:

Prevent contamination of soil, drains and surface waters.

6.3. Methods and Material for Containment and Cleaning Up

Methods and material:

*Take up mechanically and collect in suitable containers for disposal. Avoid dust formation.
Rinse with lots of water.*

6.4. Reference to other Sections

For information for safe handling see Section 7.

7. Handling and Storage

7.1. Precautions for Safe Handling

Instructions on safe handling:

*Provide adequate ventilation.
Do not swallow or inhale.*

Hygienic measures:

*Do not eat or drink during work. Do not smoke.
A nearby eyewash facility should be available for emergencies.*

7.2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

*Store in tightly sealed containers in a dry room.
Protect product from wetness.*

Requirements for storage areas and

next page: 4

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 4

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

containers:

Store in correctly labelled containers.

Information on fire and explosion protection:

Product is not combustible.

Storage class:

13; Non combustible solids (TRGS 510)

Further Information:

7.3. Specific End Use(s)

Further information:

No information available.

8. Exposure Controls/Personal Protection

8.1. Parameters to be Controlled

Parameters to be controlled (DE):

TRGS 900

Titanium dioxide (CAS 13463-67-7):

TLV: 10 mg/m³ inhalable fraction (general dust limit)

TLV: 1.25 mg/m³ air-borne fraction (general dust limit)

Peak limit category 2

Category II: substances with a resorptive effect.

Parameters to be controlled:

Derived No-Effect Level (DNEL):

Predicted No-Effect Concentration (PNEC):

Additional Information:

8.2. Exposure Controls

Technical protective measures:

Ensure adequate ventilation, especially in confined areas.

Personal Protection

General protective measures:

Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.

Respiratory protection:

Required in case of insufficient ventilation.

Recommended: Particle filter P

Hand protection:

Chemical protective gloves (EN 374 (Europe), F739 (US)).

Protective glove material:

For prolonged or repeated contact use gloves. Wash hands before breaks and at the end of work.

Eye protection:

Safety glasses with protective shields (EN 166).

next page: 5

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 5

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

Body protection:

Not required.

Environmental precautions:

Prevent from getting into the soil, surface water and sewage system.

9. Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

<i>Form:</i>	<i>powder</i>
<i>Color:</i>	<i>white</i>
<i>Odor:</i>	<i>odorless</i>
<i>Odor threshold:</i>	<i>no information available</i>
<i>pH-Value:</i>	<i>not applicable</i>
<i>Melting temperature:</i>	<i>1843°C</i>
<i>Boiling temperature:</i>	<i>3000°C</i>
<i>Flash point:</i>	<i>not flammable</i>
<i>Evaporation rate:</i>	<i>not applicable</i>
<i>Flammability (solid, gas):</i>	<i>non-combustible</i>
<i>Upper explosion limit:</i>	<i>no information available</i>
<i>Lower explosion limit:</i>	<i>no information available</i>
<i>Vapor pressure:</i>	<i>not applicable</i>
<i>Vapor density:</i>	<i>No information available.</i>
<i>Density:</i>	<i>3.4 - 4.3 g/cm³</i>
<i>Solubility in water:</i>	<i>insoluble</i>
<i>Coefficient of variation (n-Octanol/Water):</i>	<i>no information available</i>
<i>Auto-ignition temperature:</i>	<i>No information available.</i>
<i>Decomposition temperature:</i>	<i>No data available.</i>
<i>Viscosity, dynamic:</i>	

next page: 6

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 6

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

not applicable

Explosive properties:

not explosive

Oxidizing properties:

not oxidizing

Bulk density:

9.2. Further Information

Solubility in solvents:

Viscosity, kinematic:

Burning class:

Solvent content:

Solid content:

Particle size:

0.2 - 0.4 μm

Method: BI-XDC X-ray Disc Centrifuge

median mass based hydrodynamic diameter

Particle size distribution: For information on the particle percentage with aerodynamic diameter $\leq 10 \mu\text{m}$, see section 11.1 Information on Toxicological Effects - Additional toxicological information

Other information:

10. Stability and Reactivity

10.1. Reactivity

No decomposition if used according to specifications.

10.2. Chemical Stability

Stable if used according to specifications.

10.3. Possibility of Hazardous Reactions

This material is considered to be stable.

10.4. Conditions to Avoid

Conditions to avoid:

No information available.

Thermal decomposition:

No data available.

10.5. Incompatible Materials

No information available.

10.6. Hazardous Decomposition Products

None known.

10.7. Further Information

11. Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

LD50, oral:

> 5000 mg/kg (rat; OECD 425)

next page: 7

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 7

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

<i>LD50, dermal:</i>	> 2000 mg/kg (rat)
<i>LC50, inhalation:</i>	> 6.82 mg/l (4h; rat)
<i>Primary effects</i>	
<i>Irritant effect on skin:</i>	Non irritating (rabbit; OECD 404)
<i>Irritant effect on eyes:</i>	Non-irritating to eyes (rabbit; OECD 405)
<i>Inhalation:</i>	No information available.
<i>Ingestion:</i>	No information available
<i>Sensitization:</i>	No sensitizing effects known (guinea pig; OECD 406). Non sensitizing (OECD 429, Mouse Local Lymph Node Assay (LLNA))
<i>Mutagenicity:</i>	<i>In vitro genetic-toxicity:</i> Not mutagenic (OECD 471, Bacterial Reverse Mutation Test) Gene mutation (OECD 476, mouse lymphoma cells): negative <i>In vitro Mammalian Chromosomal Aberration Test (OECD 473):</i> negative Comet-Assay: positive (OPPTS 870.5140) <i>In vivo genetic-toxicity:</i> <i>In vivo mammalian alkaline comet assay (rat, intratracheal; OECD 489):</i> negative <i>Mammalian micronucleus test (rat, swallowing; OECD 474):</i> negative <i>Chromosomal Aberration Test (mouse, intraperitoneal; OECD 475):</i> negative <i>Gene mutation test (mouse, intravenous injection; OECD 488):</i> negative
<i>Reproductive toxicity:</i>	Not classified based on available information. <i>Effect on fertility:</i> One-generation study: negative (swallowing, rat; OECD 443) <i>Effects on the development of the unborn child:</i> <i>Prenatal development toxicity study: negative (swallowing, rat; OECD 414)</i>
<i>Carcinogenicity:</i>	<i>Titanium dioxide:</i> <i>Inhalation: negative (rat, 2 years)</i> <i>Oral: negative (rat, 105 weeks); Oral: negative (mouse, 103 weeks)</i> Product is not cancerogenic.
<i>Teratogenicity:</i>	No information available.

next page: 8

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 8

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

Specific target organ toxicity (STOT):

Titanium dioxide:

Single exposure:

Skin contact: No significant health effects observed in animals tests at concentrations of 20 mg/l/4h or less.

Swallowing: No significant health effects observed in animals tests at concentrations of 20 mg/l/4h or less.

Inhalation: No significant health effects observed in animals tests at concentrations of 5.0 mg/l/4h or less.

Repeated exposure:

Swallowing: No significant health effects observed in animals tests at concentrations of 100 mg/kg bw or less.

Inhalation: No significant health effects observed in animals tests at concentrations of 0.2 mg/l/6h/d or less.

Swallowing: No significant health effects observed in animals tests at a concentration of 200 mg/kg bw or less.

Oral (rat, 28d; OECD 407): NOAEL: 24000 mg/kg; LOAEL: > 24000 mg/kg; Inhalation (rat, 24 months; OECD 453): NOAEL: 0.01 mg/l; LOAEL: 0.5 mg/l; Oral (rat, 90d; OECD 408): NOAEL: 962 mg/kg; LOAEL: > 562 mg/kg

Additional toxicological information:

Inhalation: Long-term overexposure can irritate the respiratory tract.

After skin contact: dust can cause mechanical irritation or drying of the skin.

Eye contact: dust particles can cause mechanical irritation.

In lifelong animal studies rats were exposed to 10, 50 and 250 mg/m³ respirable TiO₂ over a period of 2 years. A slight fibrosis in the lungs was observed at the exposed values of 50 and 250 mg/m³. Microscopic lung tumors were also observed in 13 % of the rats exposed to 250 mg/m³, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms.

In further studies, these tumors were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance to humans. The pulmonary inflammatory response to TiO₂ particles exposure was also found to be much more severe in rats than in other rodent species.

In February 2006, the IARC has re-evaluated Titanium Dioxide pertaining to Group 2B: "Possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumors, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence.

The conclusions of several epidemiology studies on over 20000 TiO₂ industrial workers in Europe and the USA did not suggest a cancerogenic effect of TiO₂ dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with the exposure to TiO₂ dust.

Based upon all available study results, Chemours scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

*The Commission Regulation (EU) 2020/217, amending Regulation
next page: 9*

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 9

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

(EC) No. 1272/2008, introduces a new harmonized classification for certain forms of TiO₂ as a category 2 carcinogen by inhalation which applies from 1 October 2021. To be classified, the TiO₂ must be in powder form and contain 1 % or more of particles with aerodynamic diameter ≤ 10 µm.

Through a rigorous evaluation of available test methods and available standards, EN 15051-2 (Workplace exposure - Measurement of the dustiness of bulk materials - rotating drum method) was identified as the best available method for complying to the regulation.

Data from the testing following EN 15051-2 consistently shows that TiO₂ grades contain < 1 % particles with aerodynamic diameter ≤ 10 µm and therefore do not meet the criteria for classification. The respirable and thoracic dust content of TiO₂ grades fall in the very low or low dustiness categories by the EN 15051-2 method.

12. Ecological Information

12.1. Aquatic Toxicity

Fish toxicity:

LC50: > 1000 mg/l (96h, fish; OECD 203)

LC50: > 10000 mg/l (96h, marine species; OECD 203)

Daphnia toxicity:

EC50: > 1000 mg/l (48h, Daphnia magna; OECD 202)

Bacteria toxicity:

not determined

Algae toxicity:

ErC50: > 100 mg/l (72h, Pseudokirchneriella subspicatus; OECD 201)

EC50: >10000 mg/l (72h, Skeletonema costatum; ISO 10253)

NOEC: >100 mg/l (72h, Pseudokirchneriella subcapitata; OECD 201)

NOEC: 5600 mg/l (72h, Skeletonema costatum; ISO 10253)

12.2. Persistency and Degradability

No information available.

12.3. Bioaccumulation

Bioconcentration factor (BCF): 352 (Oncorhynchus mykiss)

12.4. Mobility

No information available.

12.5. Results of PBT- und vPvP Assessment

On the basis of available data, the product does not contain any PBT or vPvB substances in percentage greater than 0.1 %.

12.6. Other Adverse Effects

Water hazard class:

Not hazardous.

Behaviour in sewage systems:

Further ecological effects:

Endocrine Disrupting Properties:

This substance/mixture does not contain any components with

next page: 10

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 10

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

endocrine disrupting properties in a percentage of 0.1 or greater, according to Article 57(f) of the REACH Regulation (EC) No. 1907/2006 or the Delegated Regulation (EC) 2017/2100 or the Delegated Regulation (EC) 2018/605.

AOX Value:

13. Disposal Considerations

13.1. Waste Treatment Methods

Product:

Dispose of according to official national and local regulations.

European Waste Code (EWC):

According the European Waste Catalogue, the Waste Codes are not product specific, but application specific.

The waste key number must be determined as per the European Waste Type List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority.

Uncleaned packaging:

Non-contaminated packaging may be recycled.

Waste Code No.:

14. Transport Information

14.1. UN Number

ADR, IMDG, IATA

14.2. UN Proper Shipping Name

ADR/RID:

No hazardous goods according to ADR / DOT (US) (land transportation).

IMDG/IATA:

Not hazardous goods

14.3. Transport Hazard Classes

ADR Class:

not applicable

Hazard no.:

Classification code:

Tunnel restriction code:

IMDG Class (sea):

not applicable

Hazard no.:

EmS No.:

IATA Class:

Hazard no.:

14.4. Packaging Group

next page: 11

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 11

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

ADR/RID:

not applicable

IMDG:

IATA:

14.5. Environmental Hazards

None

14.6. Special Precautions for User

Not classified as a dangerous good under transport regulations.

14.7. Transportation in Bulk according to Annex II of MARPOL 73/78 and IBC-Code

not applicable

14.8. Further Information

15. Regulatory Information

15.1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

0, not hazardous (according to the German Regulation AwSV)

Local regulations on chemical accidents:

Seveso III Directive: not applicable under Directive 2012/18/EC.

Employment restrictions:

Restriction and prohibition of application:

EC. REACH, Section XVII, Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Preparations and Articles: not applicable

Technical instructions on air quality:

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this product.

REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59): not applicable

15.3. Further Information

Listed in the following inventories:

EINECS (EU), TSCA (US), AICS (AUS), DSL (CA), PICCS (PH), ENCS (JP), KECI (KR), INV (CN)

EC. REACH, Annex XIV, Candidate List of Substances of very High Concern (SVHC): not regulated / not applicable

Regulation (EC) 1005/2009 - Substances that Deplete the Ozone Layer: not regulated / not applicable

Regulation (EU) 2019/1021 - Persistent organic pollutants: not regulated / not applicable

Regulation (EC) 649/2012 concerning the export and import of dangerous chemicals: Not applicable

SARA 311/312: no hazards

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65: WARNING! This product can expose you to

next page: 12

Safety Data Sheet

According to regulation (EC) No. 1907/2006 (REACH)



46200 Titanium White Rutile

Page 12

Revised edition: 11.08.2021

Version: 2.1

Printed: 05.10.2021

chemicals including Titanium dioxide, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Pennsylvania Right to Know Regulated Chemical(s): Titanium dioxide; Silicon dioxide, amorphous

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.