

MSDS (Material Safety Data Sheet)
According to REGULATION (EU) 2015/830.

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

1.1 Product identifier

Trade name: Titanium Dioxide (all grades)

Synonyms: CR-1120, CR-1160, CR-2140, SUR-100, R-2140, R-2160, R-2180, R-2240, R-2280, A-2380, A-1710, A-1810, R-2340

CAS No.: 13463-67-7

Molecular Weight: 79.90

Chemical Formula: TiO₂

REACH Registration No.: 01-2119489379-17-xxxx

Revise date: 2019-02-28

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

White pigment for applications in coatings, inks, fibers, plastics, paper, etc.

Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet

Supplier: Tinox Chemie GmbH

Address: Lütticher Straße132, 40547 Düsseldorf Deutschland

Tel: +49 (0)211 52809600

Fax: +49 (0)211 52809609

E-mail: info@tinoxchem.de

1.4. Emergency telephone: +49 (0)211 52809600

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance is classified as following according to REGULATION (EC) No 1272/2008.

EU CLP 1272/2008
Hazard statement
N/A

Hazard overview

Physical hazards: Not classified

Health hazards: Not classified

Environmental hazards: Not classified

Specific hazards: 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.

Main symptoms: Upper respiratory tract irritation. Coughing. Irritation of eyes and mucous membranes. Skin irritation.

2.2. Label elements

Label according to Regulation (EC) No 1272/2008 as amended
No special labeling required.

2.3 Other hazards

Not a PBT or vPvB substance or mixture.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Characterization (Mixture)

Component	TiO ₂	ZrO ₂	Al ₂ O ₃	SiO ₂
CAS number	13463-67-7	1314-23-4	1344-28-1	14808-60-7
Percentage	≥92.0%	0-4%	0-8%	0-6%
Hazardous	No	No	No	No

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation: Remove to fresh air.

Ingestion: If swallowed, give several glasses of water to drink. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: Wipe off excess material from skin then flush skin with plenty of water. Remove contaminated clothing and shoes.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

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

Dust may irritate the respiratory tract, skin and eyes. Coughing. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 General Information:

Flash point: N.A.

Method: N.A.

LEL: N.A

UEL:N.A

Unusual fire hazards: None
Fire: Not considered to be a fire hazard. Will not burn.
Explosion: Sealed containers may rupture when heated.

5.2 Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

5.3 Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Sealed containers of this material may rupture at moderate temperatures (release of water vapor).

SECTION 6: Accidental release measures

Soil Release: Dig holding area such as lagoon, pond or pit for containment. Cover with plastic sheet or tarp to minimize spreading and protect from contact with water.

Water Release: just wash out

Occupational Release: Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8.

Spills:

Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Avoid raising dust. Handling systems and areas should be operated in such a way as to minimise exposure to dust.

7.1.2 Advice on general occupational hygiene:

Avoid raising and breathing dust. Observe good industrial hygiene practice for chemical handling.

Precautions: Local exhaust ventilation may be necessary. Handle minimising dust. Take precautionary measures against static discharges.

Advice on usage: Manual handling guidelines should be adhered to when handling sacks.

Warning: At the final stage of production, titanium dioxide product is packaged at temperatures of approximately 100 to 120° C (212 to 248° F). The material may stay hot for a long time depending on ambient temperatures and inventory storage practices. Due to the potential of elevated pigment temperature, caution should be used while handling pigment and in solvent applications. Each work environment must be assessed to determine hazards.

7.2 Conditions for safe storage, including any incompatibilities:

Packaging materials: No special requirements.

Storage condition: Stored in a cool, dry, ventilated area.

Further information: Use original container. Protect against physical damage; observe all warnings and precautions listed for the product.

7.3 Specific end use(s):

Not applicable.

SECTION 8: Exposure controls/personal protection

Airborne Exposure Limits: None established.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls.

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Clothing: Wear appropriate clothing.

Gloves: impervious gloves or specified by manufacturer

SECTION 9: Physical and chemical properties

Appearance: white powder

Odor: Odorless.

Color: white

Solubility: Insoluble in water.

Molecular Weight: 79.90

Molecular Formula: TiO₂

Specific Gravity: 3.9-4.2

pH: neutral

% Volatiles by volume @ 21C (70F): 0

Vapor Density (Air=1): No information found.

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc=1): No information found

Coefficient of Water/Oil Distribution: Not available

SECTION 10: Stability and reactivity

10.1 Stability: Stable under ordinary conditions of use and storage.

10.2 Reactivity: Stable at normal temperatures and pressure

10.3 Conditions to Avoid: Stable at normal temperatures and pressure

10.4 Polymerization: Will not polymerize.

10.5 Hazardous Decomposition Products: not occur

10.6 Hazardous Polymerization: Will not occur.

SECTION 11: Toxicological information

11.1 Information on toxicological effects.

Irritation: Inhalation of dust or mist can cause irritation of eyes, nose, throat and lungs.

Eye contact: Powder/particle can cause mechanical irritation.

Skin contact: Can cause irritation if not wash off from skin promptly.

Skin absorption: Not expected to be absorbed through intact skin.

Ingestion: Not expected to produce adverse effects.

11.2 Effects of Chronic exposure.

Titanium Dioxide: In lifetime inhalation studies of rats, airborne, respirable –size titanium dioxide particles have been shown to cause an increase in lungs tumors at concentrations associated with substantial particle lungs burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related the particle size and the amount of exposed surface area that comes into contact with the lung. However, test with other laboratory such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that causes lung cancer. Epidemiology studies do not suggest an increase risk of cancer in humans from occupational exposure to titanium dioxide.

Titanium dioxide has been characterized by IARC as possible carcinogenic to humans (Group 2B) through inhalation (Not ingestion) It has not been characterized as potential carcinogen by either NTP or OSHA.

Alumina oxide, Zirconium oxide, Silicon oxide: Inhalation of dust particles composed of these material may cause drying of mucous membranes and irritation of nose, throat and lungs with nosebleeds, cough, difficulty breath or shortness of breath. Based on animal studies, long time inhalation exposure to high doses of ultrafine particles could lead pulmonary and inflammation and could be a factor in subsequent development of chronic lung disease. Silicon oxide does not induce the lung effects associated with crystalline silica.

Medical conditions Aggravated: Respiratory disorder.

Toxicity: Titanium dioxide

Oral	LD 50	>10,000 mg/kg (rate)
Dermal	LD 50	>10,000 mg/kg (rabbit)
Inhalation	LD (4 hr)	>6.8 mg/l (rat)

SECTION 12: Ecological information

12.1 Toxicity: The product is not expected to be hazardous to the environment.

12.2 Persistence and degradability: The degradability of the product has not been stated.

12.3 Bioaccumulative potential: Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Partition coefficient n-octanol/water (log Kow): Not available.

Bioconcentration factor (BCF): Not available.

12.4 Mobility in soil Mobility in general: Not available.

12.5 Results of PBT and vPvB assessment: The product is insoluble in water and will sediment in water systems. Not a PBT or vPvB substance or mixture.

12.6 Other adverse effects: Not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The product is not hazardous for waste dumping in industrial or sanitary retention ponds. Disposal of the waste in correspondence with the state and local regulations.

13.2 Product/Packaging disposal:

Contaminated packages are not considered hazardous. If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number:	Not regulated	Not regulated	Not regulated
UN Proper shipping name:	Not regulated	Not regulated	Not regulated
Transport hazard Class:	Not regulated	Not regulated	Not regulated
Packaging group:	Not regulated	Not regulated	Not regulated

Environmental hazards:	No	No	No
Special precautions for user:	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not regulated	Not regulated	Not regulated

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 143/2011 Annex XIV Substances Subject to Authorisation

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not regulated.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not regulated.

15.2 Chemical safety assessment

The substance has undergone a safety assessment.

SECTION 16: Other information

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Other Information:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.