

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

Product identifier

Trade name or designation of the mixture Tronox® Titanium Dioxide, All Grades

Registration number -

Synonyms CR-470, CR-800, CR-800E, CR-813, CR-822, CR-826, CR-828, CR-834, CR-880, 8300, 8400, 8670, 8700, 820, 8120.

SDS number B-5017

Product code 77891, Pigment White #6

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Supersedes date -

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

Identified uses White pigment for applications in coatings, inks, fibers, plastics, paper, glass, vitreous enamels, and ceramics.

Uses advised against None known.

Details of the supplier of the safety data sheet

Company name Tronox Pigments (Holland) BV
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The Netherlands
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Emergency CHEMTREC 1-760-476-3961 (Access code: 333318)

Section 2: Hazards identification

Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

This preparation does not meet the criteria for classification according to Directive 1999/45/EC as amended.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary

Physical hazards Not classified for physical hazards.

Health hazards Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.

Environmental hazards Not classified for hazards to the environment.

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.

Label elements

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

Hazard statements The substance does not meet the criteria for classification.

Precautionary statements

Prevention Observe good industrial hygiene practices.

Response Flush skin thoroughly with water.

Storage Store in a sealed container.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information Not applicable.

Other hazards None known.

Section 3: Composition/information on ingredients

Mixture

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Titanium dioxide	86 - 97	13463-67-7 236-675-5	01-2119489379-17-0021 01-2119489379-17-0022	-	#
Classification:					
DSD:	-				
CLP:	-				
Silicon dioxide	0 - 15	7631-86-9 231-545-4	-	-	#
Classification:					
DSD:	-				
CLP:	-				
Aluminium hydroxide	0 - 10	21645-51-2 244-492-7	-	-	
Classification:					
DSD:	-				
CLP:	-				
Zirconium dioxide	0 - 2	1314-23-4 215-227-2	-	-	#
Classification:					
DSD:	-				
CLP:	-				

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

#: This substance has workplace exposure limit(s).

Composition comments Components listed make up an inseparable chemically reacted pigment.

Section 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Description of first aid measures

Inhalation Move to fresh air. Get medical attention if any discomfort continues.

Skin contact Flush skin thoroughly with water. Get medical attention if irritation develops or persists.

Eye contact Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get immediate medical attention.

Ingestion Rinse mouth thoroughly. Do not induce vomiting without advice from poison control centre. Never give anything by mouth to an unconscious person. If ingestion of a large amount does occur, call a poison control centre immediately.

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

Indication of any immediate medical attention and special treatment needed Treat symptomatically.

Section 5: Firefighting measures

General fire hazards The product is not flammable.

Extinguishing media

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media No restrictions known.

Special hazards arising from the substance or mixture None known.

Advice for firefighters

- Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.
- Special firefighting procedures** Move containers from fire area if you can do so without risk. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** Avoid inhalation of dust and contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained.
- For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods and material for containment and cleaning up Avoid dust formation. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container. For waste disposal, see Section 13.

Reference to other sections See Section 8 for personal protective equipment. For waste disposal, see Section 13.

Section 7: Handling and storage

Precautions for safe handling Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Use Personal Protective Equipment recommended in section 8 of the MSDS. Wash thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Titanium dioxide is a stable chemical compound that does not decompose during storage but can pick up moisture from the environment if not stored properly affecting product performance. Store indoors in a dry place, away from rain and wet floors. Use on a first-in first-out basis from receipt of the shipment.

Specific end use(s) White pigment for applications in coatings, inks, fibers, plastics, paper, glass, vitreous enamels, and ceramics.

Section 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Silicon dioxide (7631-86-9)	TWA	6 mg/m ³	Inhalable dust.
		2.4 mg/m ³	Respirable dust.
Titanium dioxide (13463-67-7)	TWA	10 mg/m ³	Inhalable
Zirconium dioxide (1314-23-4)	STEL	4 mg/m ³	Respirable.
	TWA	10 mg/m ³	
		5 mg/m ³	

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

DNEL Not available.

PNEC Not available.

Exposure controls

Appropriate engineering controls Ventilate as needed to control airborne dust. Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust.

Individual protection measures, such as personal protective equipment

General information Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear dust-resistant safety goggles where there is danger of eye contact.

Skin protection

- Hand protection Wear suitable gloves. Suitable gloves can be recommended by the glove supplier.

- Other Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2). Seek advice from local supervisor.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Do not breathe dust. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Contain spills and prevent releases and observe national regulations on emissions.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	White powder.
Physical state	Solid.
Form	Powder.
Colour	White.
Odour	Odourless.
pH	5 - 8.5 (10% slurry)
Melting point/freezing point	1830 - 1850 °C (3326 - 3362 °F)
Boiling point, initial boiling point, and boiling range	2500 - 3000 °C (4532 - 5432 °F)
Flammability (solid, gas)	Not available.
Oxidising properties	Not applicable.
Explosive properties	Not applicable.
Relative density	4.1 Approx. (@ 20°C)
Solubility (water)	Insoluble
Bulk density	600 kg/m ³ Approx. (@ 20°C)
Other information	No relevant additional information available.

Section 10: Stability and reactivity

Reactivity	Not available.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Avoid dust formation.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.

Section 11: Toxicological information

General information Not available.

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and malaise.
Inhalation	Dust may irritate respiratory system.
Skin contact	Dust may irritate skin.
Eye contact	Dust may irritate the eyes.

Symptoms Dusts or powder 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.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components

Test results

Aluminium hydroxide (21645-51-2)	Acute Oral LD50 Rat: > 5000 mg/kg
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Skin corrosion/irritation Dust may irritate skin.

Serious eye damage/eye irritation Dust may irritate the eyes.

Respiratory sensitisation None known.

Skin sensitisation Not a skin sensitiser.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer. IARC has classified TiO₂ as 2B Possibly carcinogenic to humans. However, the only evidence of carcinogenicity is in rats exposed to very high concentrations. Two major epidemiology studies among titanium dioxide workers in the US and in EUROPE could not demonstrate an elevated lung cancer risk.

Boffetta et. al. Mortality among workers employed in the titanium dioxide production industry in Europe. *Cancer Causes Control*. 2004 Sep;15(7):697-706.

Fryzek et. al. A cohort mortality study among titanium dioxide manufacturing workers in the United States. *J Occup Environ Med*. 2003 Apr;45(4):400-9.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. IARC Monographs, Volume 93 (Summary)

IARC Monographs. Overall Evaluation of Carcinogenicity

Silicon dioxide (CAS 7631-86-9)

3 Not classifiable as to carcinogenicity to humans.

Titanium dioxide (CAS 13463-67-7)

2B Possibly carcinogenic to humans.

Reproductive toxicity None known.
Specific target organ toxicity - single exposure None known.
Specific target organ toxicity - repeated exposure None known.
Aspiration hazard Not classified.
Mixture versus substance information Not available.
Other information No other specific acute or chronic health impact noted.

Section 12: Ecological information

Toxicity No toxicity data noted for the ingredient(s).
Persistence and degradability The degradability of the product has not been stated.
Bioaccumulative potential Bioaccumulation is unlikely to be significant because of the low water solubility of this product.
Mobility The product is insoluble in water and will sediment in water systems.
Environmental fate - Partition coefficient Not available.
Mobility in soil Not available.
Results of PBT and vPvB assessment Not available.
Other adverse effects Not available.

Section 13: Disposal considerations

Waste treatment methods
Residual waste Dispose of in accordance with local regulations.
Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code 06 11 99
Waste codes should be assigned by the user based on the application for which the product was used.
Disposal methods/information Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies.

Section 14: Transport information

ADR

The product is not covered by international regulation on the transport of dangerous goods.

RID

The product is not covered by international regulation on the transport of dangerous goods.

ADN

The product is not covered by international regulation on the transport of dangerous goods.

IATA

The product is not covered by international regulation on the transport of dangerous goods.

IMDG

The product is not covered by international regulation on the transport of dangerous goods.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code No information available.

Section 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Directive 96/61/EC concerning integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER)

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. The product does not need to be labelled in accordance with EC directives or respective national laws.

National regulations

Not available.

Chemical safety assessment

No Chemical Safety Assessment has been carried out.

Section 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.

References

ACGIH
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-phrases under Sections 2 to 15

None.

Training information

Follow training instructions when handling this material.

Further information

Nanoparticle Statement- The average primary particle size of this product is larger than the nanoparticle size range as described by ISO/TC 229 and should not be considered as manufactured nanoparticles or nanomaterials. As with other particulate materials there will be a distribution of particle sizes around the average and a small portion of these may be covered by the nanoparticle definition. In this product, the primary particle size is in the 200-300 nm range. However, the primary particle size does not represent the size of particles in this product as supplied since these tend to aggregate or agglomerate into larger particles.

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

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