

1 Identification**Product identifier**

Trade name: KRONOS Titanium Dioxide (purified grades)
Product Codes KRONOS 1171, KRONOS 2071, KRONOS 3333

CAS Number: 13463-67-7
EC number: 236-675-5

Relevant identified uses of the substance or mixture White pigment for application in Foodstuffs, cosmetics, pharmaceuticals
Uses advised against for country-specific information, see section 15

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KRONOS (US), Inc.
5430 LBJ Freeway, Suite 1700
Dallas, Tx 75240
+1 (972) 233-1700

Emergency telephone number: CHEMTREC: +1-800-424-9300 for transportation emergencies only (U.S.)
KRONOS: +1-800-866-5600 for other product information (8:00 am – 5:00 pm, central time U.S.)

2 Hazard(s) identification

Classification of the substance or mixture The substance is not classified, according to the Globally Harmonized System (GHS).

Label elements
GHS label elements Not applicable
Hazard pictograms Not applicable
Signal word Not applicable
Hazard statements Not applicable

Other hazards No further relevant information available.

3 Composition/information on ingredients

Chemical characterization: Substances
CAS No. Description: 13463-67-7 Titanium dioxide
EC number: 236-675-5

4 First-aid measures**Description of first aid measures**

General information No special measures required.

After inhalation Supply fresh air; consult doctor in case of complaints.

After skin contact Wash with water and soap and rinse thoroughly.

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After eye contact Rinse opened eye for several minutes under running water.
If symptoms persist consult doctor.

After swallowing No special measures required.

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents Use fire fighting measures that suit the environment.
The product is not flammable.

Special hazards arising from the substance or mixture None

Advice for firefighters
Protective equipment: Use protective measures that suit the hazard conditions.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Avoid formation of dust.
Ensure adequate ventilation

Environmental precautions: No special measures required.

Methods and material for containment and cleaning up: Collect mechanically.
Avoid formation of dust.

Reference to other sections See Section 8 for information on personal protective equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling Provide vacuum dust collection if dust is formed.
Information about protection against explosions and fires: The product is not flammable
Titanium dioxide product may be packaged at temperatures of approximately 100 to 120 °C (212 to 248 °F) and stay hot for a long time depending on ambient temperatures and inventory storage practices. Due to the potential of elevated pigment temperature,

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caution should be used while handling pigment and when used in or near volatile solvent applications.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Store in dry conditions.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

CAS: 13463-67-7 Titanium dioxide

 ACGIH - TLV Long-term value: 10 TWA, mg/m³
 respirable fraction 1mg/m³ TWA

 OSHA - PEL Long-term value: 15* mg/m³
 *total dust, 8 hr TWA

Exposure controls Use local exhaust ventilation if airborne concentrations would otherwise exceed applicable exposure limits.

 Personal protective equipment
 General protective and hygienic measures

 The usual precautionary measures for handling chemicals should be followed.
 Titanium dioxide pigments are not irritant but as with all fine powders can absorb moisture and natural oil from the surface of the skin during prolonged exposure. Prolonged exposure should be avoided by wearing suitable protective gloves and clothing.

 Breathing equipment: If workplace exposure limits are exceeded, use respiratory protection according to national regulations.
 The respirator must be selected by a technically qualified individual.

 Protection of hands: Check protective gloves prior to each use for their proper condition.
 Preventive skin protection by use of skin-protecting agents is recommended.

Material of gloves: The selection of suitable gloves depends on the type of job, the characteristics of all substances to be handled and on further marks of quality, which may vary from manufacturer to manufacturer. If the product is used in a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

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Eye protection:	Safety glasses
Body protection:	Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Powder
Color:	White
Odor:	Odorless
Odor threshold:	Not relevant

pH-value (100 g/l) at 20°C (68°F): 7 - 8.5

Melting point/Melting range: >1800°C (>3,272°F)

Boiling point/Boiling range: Not relevant

Flash point: Not applicable

Flammability (solid, gaseous): Product is not flammable.

Ignition temperature: Not applicable

Danger of explosion: Product is not explosive.

Density:	20°C	Anatase	3,9 g/cm³ (30 lbs/ U.S. gal.)
		Rutile	4,2 g/cm³ (35 lbs/U.S. gal.)

Bulk density at 20°C (68°F): 500-800 kg/m³

Vapor density: Not applicable.

Evaporation rate: Not applicable.

Solubility in / Miscibility with

Water: Insoluble

Partition coefficient (n-octanol/water): Not applicable

Viscosity:
dynamic: Not applicable.

Other information: No further relevant information available.

10 Stability and reactivity

Reactivity: The substance is stable under normal use conditions.

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Chemical stability
**Thermal decomposition /
conditions to be avoided:**

No decomposition under normal use conditions.

**Possibility of hazardous
reactions**

No dangerous reactions known

Conditions to avoid

No further data; see Section 7.

Incompatible materials:

No further data; see Section 7.

**Hazardous decomposition
products:**

No dangerous decomposition products known.

11 Toxicological information
Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification:
CAS: 13463-67-7 Titanium dioxide
Oral LD50 > 5,000 mg/kg (rat) (OECD 425)
Dermal LD50 > 5,000 mg/kg (rabbit)
Inhalative LC50/4h > 6.8 mg/l (rat)
**Primary irritant effect:
on the skin:**
**OECD 404:
No irritant effect.
No irritant effect**
on the eye:
**OECD 405:
No irritant effect
Like any foreign body, particles (dust) can cause mechanical
irritation.**
Sensitization:
**OECD 406, OECD 429
No sensitizing effects.**
Subacute to chronic toxicity:
CAS: 13463-67-7 Titanium dioxide
Oral NOAEL 3,500 mg/kg/d (rat) (90 d)
**Dermal NOAEL (-)
no relevant data available**
Inhalative NOAEC 10 mg/m³ (rat) (90 d)
**Additional toxicological
information:**
**Titanium Dioxide
On February 18, 2020, the European Union (EU) published the
delegated regulation classifying certain powder titanium dioxide
(TiO₂) as a suspected carcinogen (Category 2) via inhalation under
EU Regulation No 1272/2008 on classification, labelling, and**

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packing (CLP) of substances and mixtures. Classification requirements will come into force on October 1, 2021, mandating hazard labels be placed on certain TiO₂ powder products and certain powder mixtures containing TiO₂ sold into the EU market. This classification of TiO₂ is not based on new science but instead on older scientifically questioned animal test data. Other studies and extensive data, including separate epidemiologic studies of TiO₂ workers, have shown no TiO₂-specific links to cancer. TiO₂ has been characterized by IARC as possibly carcinogenic to humans (Group 2B) through inhalation (not ingestion). It has not been characterized as a potential carcinogen by either NTP or OSHA.

Carcinogenic categories**IARC (International Agency for Research on Cancer)**

: 2B

NTP (National Toxicology Program)

Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information**Toxicity****Toxicity to fish****CAS: 13463-67-7 Titanium dioxide****LC50 > 10,000 mg/l (Sheepshead minnow)**
(semi-static, OECD 203 (acute toxicity for fish))> 1,000 mg/l (Pimephales promelas)
(static, EPA-540/9-85-006, Acute Toxicity Test for Freshwater Fish)**Toxicity to Daphnia and other aquatic invertebrates****CAS: 13463-67-7 Titanium dioxide****LC50 > 10,000 mg/l (Acartia tonsa)**
(ISO 14669 (1999); ISO 5667-16 (1998))> 1,000 mg/l (Daphnia magna)
(static, OECD 202 (daphnia acute immobilisation test))**Toxicity to algae and aquatic plants****CAS: 13463-67-7 Titanium dioxide****EC50 > 100 mg/l (Pseudokirchneriella subcapitata)**
(static, OECD 201 (freshwater alga and cyanobacteria, growth inhibition test))> 10,000 mg/l (Skeletonema costatum)
(ISO 10253)

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Toxicity to sediment organisms

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 NOEC ≥ 100,000 mg/kg dw (*Hyalella azteca*)
 (semi-static, ASTM 1706)

Persistence and degradability Not relevant for inorganic substances.

Bioaccumulative potential Does not accumulate in organisms

Mobility in soil The substance is immobile in soil.

Other adverse effects No further relevant information available.

13 Disposal considerations

 Waste treatment methods
 Recommendation

 Material is not a hazardous waste.
 Disposal must be made according to all federal, state, and local
 (municipal) regulations.

 Uncleaned packagings:
 Recommendation:

 Material is not a hazardous waste.
 Disposal must be made according to all federal, state, and local
 (municipal) regulations.

14 Transport information

 UN-Number
 DOT, ADR/RID/ADN, ADN, IMDG, IATA Not applicable
 UN proper shipping name
 ADR/RID/ADN, ADN, IMDG, IATA Not applicable
 Transport hazard class(es)

 DOT, ADR/RID/ADN, ADN, IMDG, IATA
 Class Not applicable
 Packing group
 DOT, ADR/RID/ADN, IMDG, IATA Not applicable
 Environmental hazards: Not an environmentally hazardous substance.
 Special precautions for user Not applicable.
 Transport in bulk according to Annex II of
 MARPOL73/78 and the IBC Code Not relevant.

15 Regulatory information

 Safety, health and environmental regulations/legislation specific for the substance or mixture
 Limitation of use Not approved for use as a food and feed additive in the European
 Union and Switzerland.

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SARA**Section 355 (Extremely hazardous substances):**

Substance is not listed

Section 313 (Specific toxic chemical listings):

Substance is not listed

Section 311 (TIER 1 notification)

Substance is not listed.

TSCA and Canada DSL Status:: **ACTIVE****Hazardous Air Pollutants**

Substance is not listed.

Proposition 65**Chemicals known to cause cancer:**

Substance is listed

Additional information:

The listing is for titanium dioxide as "airborne, unbound particles of respirable size" and does not cover titanium dioxide when it remains within a product matrix.

OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)**New Jersey Right-to-Know List:**

Substance is listed.

New Jersey Special Hazardous Substance List:

Substance is not listed.

Pennsylvania Right-to-Know List:

Substance is listed.

Pennsylvania Special Hazardous Substance List:

Substance is not listed.

Carcinogenic categories**EPA (Environmental Protection Agency)**

Substance is not listed.

TLV (Threshold Limit Value Notation established by ACGIH): **A4 Not classifiable as human carcinogen****EU REACH registration status:** 01-2119489379-17-xxxx**Substances of very high concern (SVHC) according to EU REACH, Article 57**

The product is not listed as SVHC, it does not contain any substances of very high concern.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Contact:**KRONOS (US), Inc.**
5430 LBJ Freeway, Suite 1700
Dallas, Tx 75240

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**Safety Data Sheet
acc. to OSHA HCS**

Printing date 09/01/2022

Version 3.00

Reviewed on 09/01/2022

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**Date of preparation / last
revision**

e-mail: SDS-NA@kronosww.com

09/01/2022

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

*** Data compared to the previous
version altered.***** Data altered compared to the previous version .**

US