

1 Identification

Product identifier

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

CAS Number: **13463-67-7**

Other means of identification

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.**

(Contd. on page 2)

Printing date 10/09/2025
Version 7.00
Reviewed on 10/07/2025
Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 1)

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

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

(Contd. on page 3)

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

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 2)

practices. Due to the potential of elevated pigment temperature, 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 irritants 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.

Eye protection:

Safety glasses

(Contd. on page 4)

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 3)

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Physical state

Solid.

Color:

White

Odor:

Odorless

Odor threshold:

Not relevant

Melting point/Melting range:

>1800°C (>3,272°F)

Boiling point/Boiling range:

Not relevant

Flammability:

Product is not flammable.

Flash point:

Not applicable

Auto igniting:

Not applicable

pH-value (100 g/l) at 20°C (68°F):

5.5 - 8.5

Viscosity:

dynamic:

Not applicable.

Solubility in / Miscibility with

Water:

Insoluble

Partition coefficient (n-octanol/water):

Not applicable

Vapor pressure:

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.

Other information

Appearance:

Form:

Powder

Important information on protection of health and environment, and on safety.

Danger of explosion:

Product is not explosive.

Evaporation rate

Not applicable.

10 Stability and reactivity

Reactivity

The substance is stable under normal use conditions.

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.

(Contd. on page 5)

US

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 4)

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.

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 availableInhalative NOAEC 10 mg/m³ (rat) (90 d)

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.

(Contd. on page 6)

US

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 5)

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)

Toxicity to sediment organisms

CAS: 13463-67-7 Titanium dioxide

NOEC ≥ 100,000 mg/kg dw (Hyalomma 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.

(Contd. on page 7)

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 6)

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.

Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code

Not relevant

Special precautions for user

Not applicable.

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.

SARA

Section 355 (Extremely hazardous substances):

Substance is not listed

Section 313 (Specific toxic
chemical listings):Product contains traces of toxic chemicals subject to reporting
requirements of 40 CFR 372:

CAS: 7439-92-1 Lead: <5 ppm

CAS: 7439-97-6 Mercury: <0.1 ppm

Section 311 (TIER 1 notification)

Substance is not listed.

TSCA and Canada DSL Status:

: ACTIVE

Hazardous Air Pollutants

Substance is not listed.

(Contd. on page 8)

US

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 7)

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

16 Other information

This information pertains solely to the identified product and includes our reliance on regulations in effect and information from third parties as of the date hereof. It remains the sole responsibility of the customer to determine the suitability of the product when used in specific processes and applications or combined with other materials and to ensure compliance with all relevant laws, regulations, and standards governing those uses. The provision of this information does not constitute a warranty, guarantee, or representation of any kind. No contractual obligations, either express or implied, are created between KRONOS and any recipient of this information.

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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

(Contd. on page 9)

US

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

Printing date 10/09/2025

Version 7.00

Reviewed on 10/07/2025

Trade name: KRONOS Titanium Dioxide (purified grades)

(Contd. of page 8)

REL: Recommended Exposure Limit

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

US