

1 Identification**Product identifier**

Trade name: KRONOS Titanium Dioxide (non-pigmentary)
Product Codes KRONOS 1020; KRONOS 3025; KRONOS 3900

CAS Number: 13463-67-7

Other means of identification

EC number: 236-675-5

Relevant identified uses of the substance or mixture

Additive for application in
Glass, vitreous enamels, ceramic products

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: +1-800-424-9300 (CHEMTREC) for transportation emergencies only (US)
+1-800-866-5600 for other product information (8:00 AM – 5:00 PM, US central time)

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

3 Composition/information on ingredients**Chemical characterization: Substances**

CAS No. Description: CAS: 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.

After eye contact Rinse opened eye for several minutes under running water.

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	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	Not required.
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 7 for information on safe handling 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:	No special measures required. The product is not flammable
Conditions for safe storage, including any incompatibilities	
Requirements to be met by storerooms and receptacles:	No special requirements.

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**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

**Appropriate engineering
controls** No further data; see Section 7.

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

Body protection: Protective work clothing.

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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 determined

Flammability:

Product is not flammable.

Flash point:

Not applicable

Auto igniting:

Not applicable

pH-value (100 g/l) at 20°C (68°F):

7 - 10

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):

350 - 900 kg/m³

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.

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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 mg/kg/d
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.

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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 (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.

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Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, ADR/RID/ADN, ADN, IMDG, IATA Not applicable

UN proper shipping name

ADR/RID/ADN Not applicable

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 applicable.

Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

Not dangerous according to the above specifications.

Special precautions for user

Not applicable.

15 Regulatory information

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

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: <10 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.

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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.

Contact:

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Abbreviations and acronyms:

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.

Conformes to U.S. OSHA HCS 2024