

**Safety Data Sheet
according to HPR, Schedule 1**

Printing date 05/08/2024

Version 8.00

Reviewed on 05/07/2024

1 Identification

Product identifier

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

CAS Number: 13463-67-7

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 Canada Inc.
3390, Marie-Victorin
Varenes QC, J3X 1T4

Emergency telephone number: +1-514-397-1550 for transportation emergencies only (Canada)
+1-800-424-9300 (Chemtrec) for transportation emergencies only (U.S.)
+1-800-866-5600 for other product information (8:00 am – 5:00 pm, central time U.S.)

2 Hazard 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: 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.

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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 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

Handling
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

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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

Additional information about
design of technical systems: No further data; see Section 7.

Control parameters

Components with limit values that require monitoring at the workplace:

CAS: 13463-67-7 Titanium dioxide

EL (Canada) TWA: 10* 3** mg/m³
IARC 2B, +total dust; **resp. fraction

OEL-QUEBEC long-term value 10*; N.E. mg/m³
* total dust; ** respirable dust

ACGIH - TLV (USA) TWA: 10 TWA, mg/m³
respirable fraction 1mg/m³ TWA

OSHA - PEL (USA) TWA: 15* mg/m³
*total dust, 8 hr TWA

Exposure controls

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.

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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: 5 - 8

Melting point/Melting range:	>1800°C
Boiling point/Boiling range:	Not determined

Flash point: Not applicable

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

Auto igniting: Not applicable

Danger of explosion: Product is not explosive.

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

Bulk density at 20°C:	350 - 900 kg/m ³
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

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 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 packing (CLP) of substances and mixtures. Classification

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requirements came 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.

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)

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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:	Disposal must be made according to official regulations.

14 Transport information

UN-Number	Not applicable
DOT/TDG, ADR, ADN, IMDG, IATA UN proper shipping name	Not applicable
ADR, ADN, IMDG, IATA Transport hazard class(es)	Not applicable
DOT/TDG, ADR, ADN, IMDG, IATA Class	Not applicable
Packing group	Not applicable
DOT/TDG, ADR, IMDG, IATA Environmental hazards	Not applicable.
Special precautions for user	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.

15 Regulatory information

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

TSCA and Canada DSL Status:

: ACTIVE

**CERLCA/SUPERFUND (40 CFR
117, 302)**

Substance is not listed

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**WORKPLACE HAZARDOUS
MATERIALS INFORMATION
SYSTEM (WHMIS)
EPA (Environmental Protection Agency)**

Not a controlled product

Substance is not listed.

Additional Occupational
Exposure Limit Values:

OEL-NEW BRUNSWICK:
OEL-ALBERTA:
mg/m³

TWA: 1997 ACGIH TLV mg/m³
Long-term value: 10*; N.E.**

* total dust; ** respirable dust
Long-term value: 10*; 5** mg/

OEL-NW TERRITORIES:
m³

* total dust; ** respirable dust
Long-term value: 10*; N.E.**

OEL-NOVA SCOTIA:
mg/m³

* total dust; ** respirable dust

OEL-ONTARIO:
mg/m³

Long-term value: 10*; N.E.**

OEL-SASKATCHEWAN:

* total dust; ** respirable dust
Long-term value: 10* mg/m³

* total dust;
20 mg/m³, 15-min avg.

OEL-YUKON TERRITORIES:

Long-term value: 10* mg/m³

* total dust;
20 mg/m³, 15-min avg.

OEL-NEWFOUNDLAND, LABRADOR: Long-term value: 10*; N.E.**
mg/m³

* total dust; ** respirable dust
STEL: 10 A mg/m³

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:

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Date of the latest revision of the
safety data sheet

05/07/2024 / 7.00

Abbreviations and acronyms:

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

* Data compared to the previous
version altered.

Amended according to HPR, Schedule 1