

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 16.10.2025

Version number 8.00 (replaces version 7.00)

Revision: 13.10.2025

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

1.1 Product identifier

Trade name:

KRONOS Titanium dioxide (TMP grades)

Product Codes

KRONOS 1071; KRONOS 2043; KRONOS 2047;
KRONOS 2056; KRONOS 2064; KRONOS 2066;
KRONOS 2075; KRONOS 2076; KRONOS 2160;
KRONOS 2190; KRONOS 2225; KRONOS 2300;
KRONOS 2310; KRONOS 2360; KRONOS 2365;
KRONOS 2450; KRONOS 2800; KRONOS 2900

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

Identified uses of the substance or mixture

White pigment for application in
Coating materials, printing inks, man-made fibres, plastics, paper,
glass, vitreous enamels, ceramic products
Manufacture of titanium metal

Uses advised against

None

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

KRONOS INTERNATIONAL, Inc.
Peschstrasse 5
51373 Leverkusen, Germany
Tel.: INT +49 214 356-0

**EMERGENCY TELEPHONE
NUMBER:**

KRONOS INTERNATIONAL, Inc. (Germany)
Tel.: INT + 49 214 356-4444

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to
Regulation (EC) No 1272/2008

The product is not classified, according to the CLP regulation.

2.2 Label elements

Labelling according to
Regulation (EC) No 1272/2008

Hazard pictograms

not applicable

Signal word

not applicable

Hazard statements

not applicable

Additional information:

EUH210 Safety data sheet available on request.

2.3 Other hazards

Results of PBT and vPvB
assessment

The product does not fulfill the criteria for PBT and vPvB according to Annex XIII of REACH.

Determination of endocrine-
disrupting properties

The product does not contain any substances above the legal limits that have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Dangerous components:

CAS: 77-99-6	Trimethylolpropane	0.1 - 0.45%
EINECS: 201-074-9	Repr. 2, H361fd	
Reg.nr.: 01-2119486799-10-xxxx		

Non-hazardous components

Titanium dioxide
CAS number: 13463-67-7
EC number: 236-675-5
EU REACH Registration number: 01-2119489379-17-xxxx

Additional information:

Pigmentary titanium dioxide (not a nanomaterial according to European Commission Recommendation 2022/C 229/01)

Based upon a reproductive toxicity study (OECD 443), the manufacturer and others of its consortium membership self-classified TMP as a suspected reproductive toxicant (Repr. Cat 2). The group also determined new Derived No Effect Levels (DNEL). The new suggested TMP DNEL for workers by inhalation is 3.3 mg/m³ (long-term, systemic).

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: No special measures required.

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

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

After eye contact: Rinse opened eye for several minutes under running water. In case of persistent symptoms consult physician.

After swallowing: No special measures required.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Use fire fighting measures that suit the environment.

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The product is not flammable.

5.2 Special hazards arising from the substance or mixture

None

5.3 Advice for firefighters

Protective equipment:

Use protective measures that suit the hazard conditions.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Not required.

6.2 Environmental precautions:

No special measures required.

6.3 Methods and material for containment and cleaning up:

Collect mechanically.
Avoid causing dust.

6.4 Reference to other sections

See Section 8 for information on personal protective equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide vacuum dust collection if dust is formed.

Information about protection against explosions and fires:

The product is not flammable.

7.2 Conditions for safe storage, including any incompatibilities
Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Not required.

Further information about storage conditions:

Store under dry conditions.

7.3 Specific end use(s)

There are no further specific end uses than those named in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Components with critical values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Not required.

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DNELs
Worker

CAS: 77-99-6 Trimethylolpropane

Dermal (Worker): 0.94 mg/kg/d (Systemic long-term effects)

Inhalative (Worker): 3.3 mg/m³ (Systemic long-term effects)

8.2 Exposure controls

Individual protection measures, such as personal protective equipment

General protective and hygienic measures:

The usual precautionary measures should be adhered to in handling chemicals.

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. Store protective clothing separately.

Breathing equipment:

If workplace exposure limits are exceeded, use respiratory protection according to national regulations.

Hand protection

Requirements according to EN 374

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 does not only depend on the material, but also on further marks of quality and varies 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.

Eyeface protection

Safety glasses

Body protection:

Protective work clothing.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties
General Information

Physical state

Solid

Colour:

White

Smell:

Odourless

Odour threshold:

Not relevant

Melting point/freezing point:

>1800°C

Boiling point or initial boiling point and boiling range

Not relevant

Flammability

Product is not flammable.

Flash point:

Not applicable

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Auto-ignition temperature:	Not applicable
pH (100 g/l) at 20°C	6.0 - 9.5
Viscosity:	
Kinematic viscosity	Not applicable
Solubility in / Miscibility with Water:	Insoluble
Partition coefficient n-octanol/water (log value)	Not determined.
Density and/or relative density	
Density:	20°C Anatase 3,9 g/cm ³ Rutile 4,2 g/cm ³
Apparent density at 20°C:	500-900 kg/m³
Vapour density	Not applicable.
Particle characteristics	See section 3.

9.2 Other information

Appearance:

Form: Powder

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

Explosive properties: Product is not explosive.

Evaporation rate	Not applicable.
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Information with regard to physical hazard classes	not applicable
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SECTION 10: Stability and reactivity

10.1 Reactivity	The substance is stable under normal use conditions.
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10.2 Chemical stability

Thermal decomposition / Conditions to be avoided:	No decomposition under normal use conditions
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10.3 Possibility of hazardous reactions	No dangerous reactions known
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10.4 Conditions to avoid	No further data; see Section 7
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10.5 Incompatible materials: No further data; see Section 7

10.6 Hazardous decomposition products:	No dangerous decomposition products known
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SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Based on available data, the classification criteria are not met.
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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)

CAS: 77-99-6 Trimethylolpropane

Oral LD50 14,700 mg/kg (rat)

Dermal LD50 > 10,000 mg/kg (rabbit)

Inhalative LC50 850 mg/m³ (rat)

Primary irritant effect:

Skin corrosion/irritation

OECD 404:

No irritant effect

Serious eye damage/irritation

OECD 405:

No irritant effect

Like any foreign body, particles (dust) can cause mechanical irritation.

Respiratory or skin sensitisation OECD 406, OECD 429

No sensitizing effects.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

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)

CAS: 77-99-6 Trimethylolpropane

Oral NOAEL 67 mg/kg (rat)
subchronic 90-days study

Toxicokinetics, metabolism and distribution

Dermal absorption can be considered negligible, as titanium dioxide has been shown not to penetrate human skin to any appreciable degree.

11.2 Information on other hazards

Endocrine disrupting properties

The product does not contain any substances above the legal limits that have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605.

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Trade name: KRONOS Titanium dioxide (TMP grades)

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SECTION 12: Ecological information

12.1 Toxicity Based on available data, the classification criteria are not met.

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)

12.2 Persistence and degradability

Not relevant for inorganic substances.

12.3 Bioaccumulative potential

Does not accumulate in organisms

12.4 Mobility in soil

The product is immobile in soil.

12.5 Results of PBT and vPvB assessment

The mixture does not contain any components that are to be considered as PBT or vPvB according to the criteria of the REACH Regulation.

PBT:

The product does not fulfill the criteria for PBT and vPvB according to Annex XIII of REACH.

vPvB:

The product does not fulfill the criteria for PBT and vPvB according to Annex XIII of REACH.

12.6 Endocrine disrupting properties

The product does not contain any substances above the legal limits that have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or

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Commission Delegated Regulation (EU) 2018/605.

12.7 Other adverse effects

No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

European waste catalogue

Waste code number according to origin of waste

Uncleaned packagings:

Recommendation:

Disposal according to official regulations

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN, ADN, IMDG, IATA

not applicable

14.2 UN proper shipping name

ADR/RID/ADN

not applicable

ADN, IMDG, IATA

not applicable

14.3 Transport hazard class(es)

ADR/RID/ADN, ADN, IMDG, IATA

Class

not applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA

not applicable

14.5 Environmental hazards

Not an environmentally hazardous substance

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO

instruments

Not relevant

SECTION 15: Regulatory information

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

Directive 2012/18/EU

Named dangerous substances -

ANNEX I

None of the ingredients is listed.

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

REGULATION (EU) 2019/1148

Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients is listed.

Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

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15.2 Chemical Safety Assessment
Substances of very high concern (SVHC) according to REACH, Article 57

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

Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 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.

Relevant phrases H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Department issuing data sheet: Global Quality Management

Contact: KRONOS INTERNATIONAL, Inc.
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Date of previous version: 26.03.2024

Version number of previous version: 7.00

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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Repr. 2: Reproductive toxicity – Category 2

Sources Material Safety Data Sheet of the manufacturer.
REACH-Registration Dossier

* Data compared to the previous version altered.

Amended according to Regulation (EU) no 2020/878