



Ti-Pure™ Titanium Dioxide Pigment - Plastics Grades

Version 4.0

(replaces: Version 3.0)

Revision Date 26.01.2016

Ref. 15000002100

This Safety Data Sheet adheres to the standards and regulatory requirements of the European Community and may not meet the regulatory requirements of other countries.

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

1.1. Product identifier

Product name : Ti-Pure™ Titanium Dioxide Pigment - Plastics Grades

Types : R-101, R-103, R-104, R-105, R-108, R-350

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

Use of the Substance/Mixture : Colouring agent, Pigment, For industrial use only.

1.3. Details of the supplier of the safety data sheet

Company : Chemours Netherlands B.V.
Baanhoekweg 22
NL-3313 LA Dordrecht
Netherlands

Telephone : +31-(0)-78-630-1011

Telefax : +31-(0)-78-630-1181

E-mail address : sds-support@chemours.com

1.4. Emergency telephone number

Emergency telephone number : +(44)-870-8200418 (CHEMTREC - Recommended)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008 (CLP)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2. Label elements

Labelling according to Regulation (EU) 1272/2008 (CLP)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.



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2.3. Other hazards

Contact with dust can cause mechanical irritation or drying of the skin.
Dust contact with the eyes can lead to mechanical irritation.
May cause nose, throat, and lung irritation.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Classification according to Directive 67/548/EEC	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration
Titanium dioxide (CAS-No.13463-67-7) (EC-No.236-675-5)		
		$\geq 90 - \leq 99 \%$
Aluminum hydroxide (CAS-No.21645-51-2) (EC-No.244-492-7)		
		$\geq 0 - \leq 5 \%$
Silicon dioxide, amorphous (CAS-No.7631-86-9) (EC-No.231-545-4)		
		$\geq 0 - \leq 4 \%$

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation : Remove person to fresh air. If signs/symptoms continue, get medical attention.
Skin contact : Wash off with soap and water.
Eye contact : Rinse with plenty of water.
Ingestion : No specific intervention is indicated. Consult a physician if necessary.

4.2. Most important symptoms and effects, both acute and delayed

Risks : No special protective equipment required.
Symptoms : irritant effects

4.3. Indication of any immediate medical attention and special treatment needed



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Treatment : No specific intervention is indicated.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which shall not be used for safety reasons : None known.

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : Not a fire or explosion hazard.

5.3. Advice for firefighters

Special protective equipment for firefighters : No special protective equipment required.

Further information : The product itself does not burn.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Avoid breathing dust.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up : Pick up and arrange disposal without creating dust. After cleaning, flush away traces with water.

Other information : For disposal considerations see section 13.

6.4. Reference to other sections

Not applicable



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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Avoid breathing dust.

Advice on protection against fire and explosion : An electrostatic charge can potentially build up when pouring or conveying product from plastic bags. Do not use plastic bags in the presence of flammable or explosive vapors.
This is a fully oxidized mineral product. As such it cannot support combustion or participate in a dust explosion.

Dust explosion class : Not applicable

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

Components with workplace control parameters

Type Form of exposure	Control parameters	Update	Regulatory basis	Remarks
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Titanium dioxide (CAS-No. 13463-67-7)

Time Weighted Average (TWA):	10 mg/m3	02 2012	UAE. Abu Dhabi. TLVs. Maximum Allowable Limits for Air Pollutants in Working Areas (AD EHSMS RF - Occupational Standards and Guideline Values, Schedule A)	
Time Weighted Average (TWA): Respirable.	4 mg/m3	10 2010	UAE. Dubai. OELs. Maximum Allowable Limits for Indoor Air Pollutants. Industrial Operation Regulation IO-11.0: Appendix, Tables 2 & 2A	
Time Weighted Average (TWA): Inhalable	10 mg/m3	10 2010	UAE. Dubai. OELs. Maximum Allowable Limits for Indoor Air Pollutants. Industrial Operation Regulation IO-11.0: Appendix, Tables 2 & 2A	



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Time Weighted Average (TWA):	10 mg/m3	2006	UAE. OELs. Maximum Allowable Limits for Air Pollutants in Working Areas [Law to Protect the Air from Pollution, Resolution of the Cabinet of Ministers No. 12 of 2006]
Time Weighted Average (TWA):	10 mg/m3	2002	GCC. TLVs. Exposure Limits for Hazardous Chemical Substances (Common System for the Management of Hazardous Chemicals in the Gulf Cooperation Council for the Arab States of the Gulf, Annex 3)

Silicon dioxide, amorphous (CAS-No. 7631-86-9)

Time Weighted Average (TWA):	10 mg/m3	02 2012	UAE. Abu Dhabi. TLVs. Maximum Allowable Limits for Air Pollutants in Working Areas (AD EHSMS RF - Occupational Standards and Guideline Values, Schedule A)
Time Weighted Average (TWA):	3 mg/m3	02 2012	UAE. Abu Dhabi. TLVs. Maximum Allowable Limits for Air Pollutants in Working Areas (AD EHSMS RF - Occupational Standards and Guideline Values, Schedule A)

8.2. Exposure controls

- Engineering measures : Use sufficient ventilation to keep employee exposure below recommended limits.
- Eye protection : Safety glasses with side-shields
- Hand protection : Gloves
- Skin and body protection : No personal body protection normally required.
- Protective measures : No other specific measures identified.
- Hygiene measures : Wash hands before breaks and at the end of workday.
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Form : crystalline
- Colour : white
- Odour : odourless



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Odour Threshold	: Not applicable
pH	: Not applicable
Melting point	: 1 843 °C
Boiling point	: 3 000 °C
Flash point	: does not flash
Flammability (solid, gas)	: The product is not flammable.
Auto-ignition temperature	: Not applicable
Vapour pressure	: Not applicable
Density	: Not applicable
Relative density	: 3,6 - 4,3
Bulk density	: Not applicable
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: Not applicable
Solubility in other solvents	: Not applicable
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable
Relative vapour density	: Not applicable
Evaporation rate	: Not applicable

9.2. Other information

Phys.-chem./other information : None.

SECTION 10: Stability and reactivity

10.1. Reactivity : None reasonably foreseeable.

10.2. Chemical stability : Stable



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10.3. Possibility of hazardous reactions : None known.

10.4. Conditions to avoid : None known.

10.5. Incompatible materials : None known.

10.6. Hazardous decomposition products : Not applicable

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / Rat : > 5 000 mg/kg

Acute inhalation toxicity

LC50 / 4 h Rat : > 6,82 mg/l

Acute dermal toxicity

LD50 / Rabbit : > 10 000 mg/kg

Skin irritation

Rabbit

Classification: Not classified as irritant

Result: Slight or no skin irritation

Eye irritation

Rabbit

Classification: Not classified as irritant

Result: Slight or no eye irritation

Sensitisation

Mouse Local lymph node test

Result: Did not cause sensitisation on laboratory animals.

Guinea pig Buehler Test

Result: Did not cause sensitisation on laboratory animals.

Repeated dose toxicity



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Oral Rat

No toxicologically significant effects were found.

Inhalation Rat

No toxicologically significant effects were found.

Mutagenicity assessment

Did not cause genetic damage in animals. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Carcinogenicity assessment

In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m³ of respirable TiO₂. Slight lung fibrosis was observed at 50 and 250 mg/m³ levels. Microscopic lung tumours were also observed in 13 percent of the rats exposed to 250 mg/m³, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms. In further studies, these tumours were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO₂ particles exposure was also found to be much more severe in rats than in other rodent species. In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumours, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence. The conclusions of several epidemiology studies on more than 20000 TiO₂ industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO₂ dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO₂ dust. Based upon all available study results, Chemours scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

Human experience

Excessive exposures may affect human health, as follows:

Inhalation

Respiratory system: May cause nose, throat, and lung irritation.

Skin contact

Skin: Contact with dust can cause mechanical irritation or drying of the skin.

Eye contact

Eyes: Dust contact with the eyes can lead to mechanical irritation.

SECTION 12: Ecological information

12.1. Toxicity



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Toxicity to fish

LC50 / 96 h / Pimephales promelas (fathead minnow): > 1 000 mg/l

Toxicity to aquatic plants

EC50 / 72 h / Pseudokirchneriella subcapitata (green algae): > 100 mg/l
Toxicity to aquatic invertebrates

EC50 / 48 h / Daphnia magna (Water flea): > 1 000 mg/l

12.2. Persistence and degradability

Biodegradability

Pigments are practically not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation

Does not bioaccumulate.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Non-classified PBT substance / Non-classified vPvB substance

12.6. Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Dispose of as special waste in compliance with local and national regulations.

Contaminated packaging : If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14: Transport information

ADR

14.1. UN number: Not applicable

14.2. UN proper shipping name: Not applicable

14.3. Transport hazard class(es): Not applicable



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- 14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IATA_C

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IMDG

- 14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

Water contaminating class : nwg not water endangering
(Germany)

SECTION 16: Other information

Other information professional use

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed



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EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Restrictions on use

These products may not be directly added to food or pharmaceuticals and are not recommended for use in medical devices or cosmetics.

Do not use or resell Chemours™ materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use. For further information, please contact your Chemours representative.

Further information

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Significant change from previous version is denoted with a double bar.

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