

SAFETY DATA SHEET



Ti-Pure™ TS-1510 Titanium Dioxide Pigment

Version	Revision Date:	SDS Number:	Date of last issue: 12.04.2023
1.2	05.12.2023	10874981-00003	Date of first issue: 24.10.2022

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : Ti-Pure™ TS-1510 Titanium Dioxide Pigment

SDS-Identcode : 130000149917

Manufacturer or supplier's details

Company : Chemours International Operations Sàrl

Address : 150, Route du Nant d'Avril
CH-1217 Meyrin, Geneva Switzerland

Telephone : +41 (0) 22 719 15 00

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

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

Telefax : +41 (0) 22 723 21 87

Recommended use of the chemical and restrictions on use

Recommended use : Colouring agent
Pigment

Restrictions on use : For industrial use only.

2. HAZARDS IDENTIFICATION

GHS Classification

Reproductive toxicity : Category 2

GHS-Labeling

Hazard pictograms :



Signal word : Warning

Hazard statements : H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/

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attention.

Storage:

P405 Store locked up.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Components

Chemical name	CAS-No.	Classification	MAC value mg/m ³ / TSEL value	Concentration (% w/w)
Titanium dioxide	13463-67-7		MPC-TWA: 10 mg/m ³ aerosols of pre- dominantly fibro- genic action, Class 4 - Low hazard Data Source: RU OEL	>= 90 - <= 100
Trimethylolpropane	77-99-6	Repr.2; H361fd	MPC-STEL: 50 mg/m ³ Class 4 - Low hazard Data Source: RU OEL	>= 0,1 - < 1
Aluminium hydroxide	21645-51-2		MPC-TWA: 6 mg/m ³ aerosols of pre- dominantly fibro- genic action, Class 4 - Low hazard Data Source: RU OEL	>= 0,1 - < 1
Silicon dioxide, amorphous	7631-86-9		MPC-TWA: 1 mg/m ³ aerosols of pre- dominantly fibro- genic action, Class 3 - Moder- ately dangerous Data Source: RU OEL MPC-STEL: 3	< 0,1

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			mg/m3 aerosols of pre- dominantly fibro- genic action, Class 3 - Moder- ately dangerous Data Source: RU OEL	
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For explanation of abbreviations see section 16.

4. FIRST AID MEASURES

- | | |
|---|---|
| General advice | : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice. |
| If inhaled | : If inhaled, remove to fresh air.
Get medical attention. |
| In case of skin contact | : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse. |
| In case of eye contact | : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists. |
| If swallowed | : If swallowed, DO NOT induce vomiting.
Get medical attention.
Rinse mouth thoroughly with water. |
| Most important symptoms and effects, both acute and delayed | : irritant effects
Suspected of damaging fertility. Suspected of damaging the unborn child. |
| Protection of first-aiders | : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| Notes to physician | : Treat symptomatically and supportively. |

5. FIREFIGHTING MEASURES

Flammable properties

- | | |
|--|---------------------|
| Flash point | : Not applicable |
| Ignition temperature | : No data available |
| Upper explosion limit / Upper flammability limit | : No data available |

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Lower explosion limit / Lower flammability limit : No data available

Flammability (solid, gas) : Will not burn
Not expected to form explosive dust-air mixtures.

Suitable extinguishing media : Not applicable
Will not burn

Unsuitable extinguishing media : Not applicable
Will not burn

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : No hazardous combustion products are known

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

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- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Do not swallow.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Take care to prevent spills, waste and minimize release to the environment.
See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Conditions for safe storage : Keep in properly labelled containers.
Store in accordance with the particular national regulations.
- Materials to avoid : No special restrictions on storage with other products.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Data Source
Titanium dioxide	13463-67-7	MPC-TWA (aerosol)	10 mg/m ³	RU OEL
Further information: aerosols of predominantly fibrogenic action, Class 4 - Low hazard				
Trimethylolpropane	77-99-6	MPC-STEL (vapour and/or gas)	50 mg/m ³	RU OEL
Further information: Class 4 - Low hazard				
Aluminium hydroxide	21645-51-2	MPC-TWA (aerosol)	6 mg/m ³	RU OEL
Further information: aerosols of predominantly fibrogenic action, Class 4 - Low hazard				
Silicon dioxide, amorphous	7631-86-9	MPC-TWA (Aerosol - total mass)	1 mg/m ³	RU OEL
Further information: aerosols of predominantly fibrogenic action, Class 3 - Moderately dangerous				
		MPC-STEL (Aerosol - total mass)	3 mg/m ³	RU OEL
Further information: aerosols of predominantly fibrogenic action, Class 3 - Moderately dangerous				

- Engineering measures** : Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.

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Personal protective equipment

- Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
- Filter type : Particulates type
- Hand protection
- Material : Chemical-resistant gloves
- Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
- Eye protection : Wear the following personal protective equipment:
Safety glasses
- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
- Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : crystalline
- Colour : white
- Odour : odourless
- Odour Threshold : No data available
- pH : No data available
- Melting point/freezing point : 1.843 °C
- Initial boiling point and boiling : 3.000 °C

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range

Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Will not burn Not expected to form explosive dust-air mixtures.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	3,6 - 4,3
Solubility(ies) Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle size	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None known.
Conditions to avoid	:	None known.

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Incompatible materials : None.

Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Components:**Titanium dioxide:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 425

Acute inhalation toxicity : LC50 (Rat): > 6,82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Acute toxicity estimate (Rat): > 2.000 mg/kg
Method: Expert judgement
Assessment: The substance or mixture has no acute dermal toxicity

Trimethylolpropane:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0,85 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Aluminium hydroxide:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 423
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5,09 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

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Silicon dioxide, amorphous:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat): > 2,08 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 5.000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:**Titanium dioxide:**

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Trimethylolpropane:

Species	:	Rabbit
Result	:	No skin irritation

Aluminium hydroxide:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Silicon dioxide, amorphous:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:**Titanium dioxide:**

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Trimethylolpropane:

Species	:	Rabbit
Result	:	No eye irritation

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Aluminium hydroxide:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Silicon dioxide, amorphous:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Respiratory or skin sensitisation**Skin sensitisation**

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:**Titanium dioxide:**

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	negative

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	negative

Exposure routes	:	Inhalation
Species	:	Mouse
Result	:	negative

Exposure routes	:	Inhalation
Species	:	Humans
Result	:	negative

Trimethylolpropane:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	negative

Aluminium hydroxide:

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406

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Result : negative

Germ cell mutagenicity

Not classified based on available information.

Components:**Titanium dioxide:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

Test Type: comet assay
Method: OPPTS 870.5140
Result: positive

Genotoxicity in vivo : Test Type: In vivo mammalian alkaline comet assay
Species: Rat
Application Route: intratracheal
Method: OECD Test Guideline 489
Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 475
Result: negative

Test Type: Transgenic rodent germ cell gene mutation assay
Species: Mouse
Application Route: Intravenous injection
Method: OECD Test Guideline 488
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Trimethylolpropane:

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Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Aluminium hydroxide:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Result: positive
Remarks: Based on data from similar materials

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: equivocal
Remarks: Based on data from similar materials

Test Type: in vitro micronucleus test
Result: positive
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative

Silicon dioxide, amorphous:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: Ingestion
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Product:

Remarks : 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 mech-

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anisms.

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.

Components:**Titanium dioxide:**

Species	: Rat
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 2 Years
Result	: negative

Species	: Rat
Application Route	: Ingestion
Exposure time	: 105 weeks
Result	: negative

Species	: Mouse
Application Route	: Ingestion
Exposure time	: 103 weeks
Result	: negative

Carcinogenicity - Assessment	: Weight of evidence does not support classification as a carcinogen
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Aluminium hydroxide:

Species	: Rat
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 86 weeks
Result	: negative
Remarks	: Based on data from similar materials

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Silicon dioxide, amorphous:

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	103 weeks
Result	:	negative

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen
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Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:**Titanium dioxide:**

Effects on fertility	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: Ingestion Method: OECD Test Guideline 443 Result: negative
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Effects on foetal development	:	Test Type: Prenatal development toxicity study (teratogenicity) Species: Rat Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative
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Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity
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Trimethylolpropane:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: positive
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Effects on foetal development	:	Species: Rat Application Route: Ingestion Method: OECD Test Guideline 443 Result: positive
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Reproductive toxicity - Assessment	:	Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Some evidence of adverse effects on development, based on animal experiments.
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Aluminium hydroxide:

Effects on fertility	:	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative
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Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

Silicon dioxide, amorphous:

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

Not classified based on available information.

Components:

Titanium dioxide:

Exposure routes : Skin contact
Assessment : No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less

Exposure routes : Ingestion
Assessment : No significant health effects observed in animals at concentrations of 2000 mg/kg bw or less

Exposure routes : inhalation (dust/mist/fume)
Assessment : No significant health effects observed in animals at concentrations of 5.0 mg/l/4h or less

STOT - repeated exposure

Not classified based on available information.

Components:

Titanium dioxide:

Exposure routes : Ingestion
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Exposure routes : inhalation (dust/mist/fume)
Assessment : No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Exposure routes : Ingestion
Assessment : No significant health effects observed in animals at concentrations of 200 mg/kg bw or less.

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Repeated dose toxicity**Components:****Titanium dioxide:**

Species	: Rat, male and female
NOAEL	: 24.000 mg/kg
LOAEL	: > 24.000 mg/kg
Application Route	: Ingestion
Exposure time	: 28 Days
Method	: OECD Test Guideline 407
Remarks	: No significant adverse effects were reported

Species	: Rat, male and female
NOAEL	: 0,01 mg/l
LOAEL	: 0,5 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 24 Months
Method	: OECD Test Guideline 453
Remarks	: No significant adverse effects were reported

Species	: Rat, male and female
NOAEL	: 962 mg/kg
LOAEL	: > 962 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days
Method	: OECD Test Guideline 408
Remarks	: No significant adverse effects were reported

Trimethylolpropane:

Species	: Rat
NOAEL	: 67 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days

Aluminium hydroxide:

Species	: Rat
NOAEL	: > 100 mg/kg
Application Route	: Ingestion
Exposure time	: 364 Days
Method	: OECD Test Guideline 426
Remarks	: Based on data from similar materials

Species	: Rat
NOAEL	: > 0,2 mg/kg
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 12 Months
Remarks	: Based on data from similar materials

Silicon dioxide, amorphous:

Species	: Rat
NOAEL	: 1,3 mg/m3
Application Route	: inhalation (dust/mist/fume)

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Exposure time : 13 Weeks

Aspiration toxicity

Not classified based on available information.

Components:**Titanium dioxide:**

No aspiration toxicity classification

12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Titanium dioxide:**

Toxicity to fish : LC50 (Fish): > 1.000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Marine species): > 10.000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia sp. (water flea)): > 1.000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

EC50 (No species specified): > 1.000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

EC50 (Skeletonema costatum (marine diatom)): > 10.000 mg/l
Exposure time: 72 h
Method: ISO 10253

NOEC (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 3 d
Method: OECD Test Guideline 201

NOEC (Skeletonema costatum (marine diatom)): 5.600 mg/l
Exposure time: 3 d
Method: ISO 10253

Trimethylolpropane:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 1.000 mg/l

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Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 13.000 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 1.000 mg/l
Exposure time: 21 d

Toxicity to microorganisms : EC50: > 1.000 mg/l
Exposure time: 3 h

Aluminium hydroxide:

Toxicity to fish : LL50 (Salmo trutta (brown trout)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EL50 (Selenastrum capricornutum (green algae)): > 100 mg/l
Exposure time: 96 h

Silicon dioxide, amorphous:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 10.000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.000 mg/l
Exposure time: 24 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 10.000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (Desmodesmus subspicatus (green algae)): 10.000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Persistence and degradability**Components:****Trimethylolpropane:**

Biodegradability : Result: Not readily biodegradable.

SAFETY DATA SHEET



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Biodegradation: 6 %
Exposure time: 28 d

Bioaccumulative potential

Components:

Titanium dioxide:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 352

Trimethylolpropane:

Partition coefficient: n-octanol/water : log Pow: -0,47

Mobility in soil

No data available

Other adverse effects

No data available

Hygienic standards:

(Allowable concentration in air, water, including fishery waters, soil)

Components	Air	Water	Soil	Data Source
Titanium dioxide 13463-67-7	TSEL: 0,5 mg/m ³	MPC: 1 Milligrams per cubed decimeter (the substance) Limiting health hazard indicator: toxic Hazard class: 4 MPC: 0,06 Milligrams per cubed decimeter (Titanium) Limiting health hazard indicator: toxic Hazard class: 4	No data avail- able	List 2 List 5
Trimethylolpropane 77-99-6	TSEL: 0,3 mg/m ³	No data available	No data avail- able	List 2
Silicon dioxide, amor- phous 7631-86-9	TSEL: 0,02 mg/m ³	MAC: 20 mg/l (Silicon) Limiting health hazard indicator: sanitary- toxicological Hazard class: Class	No data avail- able	List 2 List 4

SAFETY DATA SHEET



Ti-Pure™ TS-1510 Titanium Dioxide Pigment

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		2 - highly dangerous MAC: 25 mg/l (Silicon) Limiting health hazard indicator: sanitary- toxicological Hazard class: Class 2 - highly dangerous		
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For explanation of abbreviations see section 16.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

ADR

Not regulated as a dangerous good

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

Not applicable

15. REGULATORY INFORMATION

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

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16. OTHER INFORMATION

Other information : Ti-Pure™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC.
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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.

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

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

Full text of other abbreviations

Repr. : Reproductive toxicity
RU OEL : SanPiN 1.2.3685-21 Table 2.1, Table 2.8, Table 2.16 & Table 2.17 Maximum permissible concentrations (MPC) in the air of the working area
RU OEL / MPC-STEL : Maximum Permissible Concentration - Short Term Exposure
RU OEL / MPC-TWA : Maximum Permissible Concentration - Time Weighted Average
List 2 : SanPiN 1.2.3685-21 Table 1.2, Table 1.12 & Table 1.13 Tentative Safe Exposure Levels (TSEL) in the air of urban and rural settlements
List 4 : SanPiN 1.2.3685-21 Table 3.13, Table 3.15, Table 3.16 & Table 3.17 Maximum permissible concentrations (MPC) of chemicals in the water of drinking systems of centralized, including hot, and non-centralized water supply, water of underground and surface water bodies of domestic drinking and cultural and domestic water use, water of swimming pools, water parks
List 5 : Order of the Russian Federal Fisheries Agency "Standards of maximum permissible concentrations of harmful substances in fishery water bodies"

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% re-

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sponse; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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