

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Ti-Pure™ R-796+ Titanium Dioxide Pigment

SDS-Identcode : 130000043365

#### Recommended use of the chemical and restrictions on use

Recommended use : Colouring agent  
Pigment

Restrictions on use : For industrial use only.

#### Manufacturer or supplier's details

Company : Chemours Korea Inc.

Address : 12FL, Majestarcity Tower 1, 12, Seocho-daero 38-gil, Seocho-gu, Seoul 06655, Korea

Telephone : 82-2-2015-5000

Emergency telephone number : 080-880-0454

Telefax : 82-2-2015-5091

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### 2. HAZARDS IDENTIFICATION

#### GHS Classification

This material is not classified as hazardous under the Article 104 of the Occupational Safety and Health Act (OSHA). It is not regulated for the MSDS creation and labeling by the provision of Article 110 Paragraph 1 of the OSHA.

#### GHS label elements

This material is not classified as hazardous under the Article 104 of the Occupational Safety and Health Act (OSHA). It is not regulated for the MSDS creation and labeling by the provision of Article 110 Paragraph 1 of the OSHA.

Hazard pictograms	: Not applicable
Signal word	: Not applicable
Hazard statements	: Not applicable
Precautionary statements	: <b>Prevention:</b> P264 Wash skin thoroughly after handling.

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

### Disposal:

P501 Dispose of contents/ container according to waste-related laws

### Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 5 %

### Other hazards which do not result in classification

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	Common Name	CAS-No.	Concentration (% w/w)
Titanium dioxide	No data available	13463-67-7	$\geq 90 - \leq 100$
Laminate component	Proprietary Ingredient	Proprietary Ingredient	$\geq 1 - < 10$
Aluminium hydroxide	No data available	21645-51-2	$\geq 1 - < 10$
Inorganic metal oxide	Proprietary Ingredient	Proprietary Ingredient	$\geq 0.1 - < 1$

## 4. FIRST AID MEASURES

In case of eye contact	: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
In case of skin contact	: Wash with water and soap as a precaution. Get medical attention if symptoms occur.
If inhaled	: If inhaled, remove to fresh air. Get medical attention if symptoms occur.
If swallowed	: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	: irritant effects
Protection of first-aiders	: No special precautions are necessary for first aid responders.

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

Notes to physician : Treat symptomatically and supportively.

### 5. FIREFIGHTING MEASURES

#### Suitable and unsuitable extinguishing media

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 : Carbon oxides  
Metal oxides

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 : Wear self-contained breathing apparatus for firefighting if necessary.  
Use personal protective equipment.

### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : 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.

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

### 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : 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.
- 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	Basis
Titanium dioxide	13463-67-7	TWA	10 mg/m3	KR OEL
		TWA (Respirable particulate matter)	2.5 mg/m3 (Titanium dioxide)	ACGIH
Laminate component	Proprietary Ingredient	TWA (Respirable particulate matter)	1 mg/m3 (Aluminium)	ACGIH
Aluminium hydroxide	21645-51-2	TWA	2 mg/m3 (Aluminium)	KR OEL
		TWA (Respirable particulate matter)	1 mg/m3 (Aluminium)	ACGIH
Inorganic metal oxide	Proprietary Ingredient	TWA	10 mg/m3	KR OEL
		TWA (Respirable particulate matter)	1 mg/m3 (Aluminium)	ACGIH

Other ingredients, which are listed in section 3 but not listed in this section, do not have established occupational exposure limit values.

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

---

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

**Personal protective equipment. Among the following personal protective equipment, the PPEs which require safety certification need to be certified by KOSHA.**

**Respiratory protection** : Use respiratory protection (dust mask) unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

**Filter type** : Particulates type

**Eye protection** : Wear the following personal protective equipment:  
Safety glasses

**Hand protection**

**Material** : Not applicable

**Remarks** : Wash hands before breaks and at the end of workday.

**Skin and body protection** : Skin should be washed after contact.

**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.

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### 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 range** : 3,000 °C

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

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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
Solubility(ies) Water solubility	:	insoluble
Relative vapour density	:	Not applicable
Relative density	:	3.6 - 4.3
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	The substance or mixture is not classified self-reactive.
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle size	:	No data available

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### 10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	:	Not classified as a reactivity hazard. Stable under normal conditions. None known.
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# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

Conditions to avoid : None known.

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

#### Health hazard information

##### Acute toxicity

|| No data available

##### 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

##### Laminate component:

|| Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

|| Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

|| Acute dermal toxicity : LD50 (Rabbit): > 4,640 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

### 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

### Inorganic metal oxide:

Acute oral toxicity	: LD50 (Rat): > 10,000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50 (Rat): > 5.09 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on data from similar materials

### Skin corrosion/irritation

No data available

### Components:

#### Titanium dioxide:

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

#### Laminate component:

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation
Remarks	: Information given is based on data obtained from similar substances.

#### Aluminium hydroxide:

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



# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version	Revision Date:	SDS Number (Internal):	Date of last issue: 2023/04/26
6.0	2023/12/06	3379453-00010	Date of first issue: 2018/09/25

---

### Inorganic metal oxide:

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

### Serious eye damage/eye irritation

No data available

### Components:

#### Titanium dioxide:

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

#### Laminate component:

Species	: Rabbit
Result	: No eye irritation
Method	: OECD Test Guideline 405
Remarks	: Based on data from similar materials

#### Aluminium hydroxide:

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

### Inorganic metal oxide:

Species	: Rabbit
Result	: No eye irritation

### Respiratory or skin sensitisation

#### Respiratory sensitisation

No data available

#### Skin sensitisation

No data available

### 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

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version	Revision Date:	SDS Number (Internal):	Date of last issue: 2023/04/26
6.0	2023/12/06	3379453-00010	Date of first issue: 2018/09/25

---

Species	: Mouse
Method	: OECD Test Guideline 429
Result	: negative

Exposure routes	: Inhalation
Species	: Mouse
Result	: negative

Exposure routes	: Inhalation
Species	: Humans
Result	: negative

### Laminate component:

Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative
Remarks	: Based on data from similar materials

Species	: Mouse
Result	: negative
Remarks	: Based on data from similar materials

### Aluminium hydroxide:

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

### Inorganic metal oxide:

Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative

### Carcinogenicity

No data available

### Product:

Remarks : In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m<sup>3</sup> of respirable TiO<sub>2</sub>. Slight lung fibrosis was observed at 50 and 250 mg/m<sup>3</sup> levels. Microscopic lung tumours were also observed in 13 percent of the rats exposed to 250 mg/m<sup>3</sup>, 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 TiO<sub>2</sub> particles exposure

**Ti-Pure™ R-796+ Titanium Dioxide Pigment**

Version	Revision Date:	SDS Number (Internal):	Date of last issue:
6.0	2023/12/06	3379453-00010	2023/04/26
			Date of first issue: 2018/09/25

---

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 TiO<sub>2</sub> industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO<sub>2</sub> dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO<sub>2</sub> 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:**

|| No data available

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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**Laminate component:**

|| No data available

Carcinogenicity - Assessment	: Weight of evidence does not support classification as a carcinogen, Based on data from similar materials
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# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

Weight of evidence does not support classification as a carcinogen, Based on data from similar materials

### Aluminium hydroxide:

No data available

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

### Inorganic metal oxide:

No data available

Carcinogenicity - Assessment	: Weight of evidence does not support classification as a carcinogen
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### Germ cell mutagenicity

No data available

### Components:

#### Titanium dioxide:

No data available

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)

**Ti-Pure™ R-796+ Titanium Dioxide Pigment**

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

	<p>Species: Rat Application Route: Ingestion Method: OECD Test Guideline 474 Result: negative</p> <p>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</p> <p>Test Type: Transgenic rodent germ cell gene mutation assay Species: Mouse Application Route: Intravenous injection Method: OECD Test Guideline 488 Result: negative</p>
Germ cell mutagenicity- Assessment	: Weight of evidence does not support classification as a germ cell mutagen.

**Laminate component:**

No data available

**Aluminium hydroxide:**

No data available

Genotoxicity in vitro	: <ul style="list-style-type: none"><li>Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative</li><li>Test Type: Chromosome aberration test in vitro Result: positive Remarks: Based on data from similar materials</li><li>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Result: equivocal Remarks: Based on data from similar materials</li><li>Test Type: in vitro micronucleus test Result: positive Remarks: Based on data from similar materials</li></ul>
Genotoxicity in vivo	: <ul style="list-style-type: none"><li>Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: Ingestion Method: OECD Test Guideline 474 Result: negative</li></ul>

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

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### Inorganic metal oxide:

|| No data available

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

### Reproductive toxicity

|| No data available

### Components:

#### Titanium dioxide:

|| No data available

|| Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 443  
Result: negative

|| Effects on foetal development : Test Type: Prenatal development toxicity study (teratogenicity)  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

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

### Laminate component:

|| No data available

|| Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity, Based on data from similar materials

Weight of evidence does not support classification for reproductive toxicity, Based on data from similar materials

### Aluminium hydroxide:

|| No data available

|| 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  
Remarks: Based on data from similar materials

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

---

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

### Inorganic metal oxide:

No data available

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity, Based on data from similar materials

### STOT - single exposure

No data available

#### 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

No data available

#### 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.

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version	Revision Date:	SDS Number (Internal):	Date of last issue: 2023/04/26
6.0	2023/12/06	3379453-00010	Date of first issue: 2018/09/25

### Laminate component:

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

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

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

### Inorganic metal oxide:

Assessment : No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

### 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

### Laminate component:

Species : Dog  
NOAEL : 88 mg/kg  
LOAEL : > 88 mg/kg  
Application Route : Ingestion  
Exposure time : 180 d



# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version	Revision Date:	SDS Number (Internal):	Date of last issue: 2023/04/26
6.0	2023/12/06	3379453-00010	Date of first issue: 2018/09/25

---

Remarks : No significant adverse effects were reported

Species : Dog  
NOAEL : 88 mg/kg  
LOAEL : > 88 mg/kg  
Application Route : Ingestion  
Exposure time : 180 d  
Remarks : No significant adverse effects were reported

Species : Dog  
NOAEL : 88 mg/kg  
LOAEL : > 88 mg/kg  
Application Route : Ingestion  
Exposure time : 180 d  
Remarks : No significant adverse effects were reported

### 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

### Inorganic metal oxide:

Species : Rat  
NOAEL : 141 mg/kg  
LOAEL : > 141 mg/kg  
Application Route : Ingestion  
Exposure time : 28 d  
Remarks : No significant adverse effects were reported  
Based on data from similar materials

Species : Rat  
NOAEL : 0.070 mg/l  
LOAEL : > 0.07 mg/l  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 180 d  
Method : OECD Test Guideline 413  
Remarks : No significant adverse effects were reported  
Based on data from similar materials

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

### Aspiration toxicity

|| No data available

### Components:

#### Titanium dioxide:

|| No aspiration toxicity classification

### Experience with human exposure

No data available

### Toxicology, Metabolism, Distribution

No data available

### Neurological effects

No data available

### Further information

No data available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 5 %

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

# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

Version 6.0	Revision Date: 2023/12/06	SDS Number (Internal): 3379453-00010	Date of last issue: 2023/04/26 Date of first issue: 2018/09/25
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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

### Laminate component:

#### Ecotoxicology Assessment

Acute aquatic toxicity : Toxic effects cannot be excluded

Toxic effects cannot be excluded

Toxic effects cannot be excluded

Chronic aquatic toxicity : Toxic effects cannot be excluded

Toxic effects cannot be excluded

Toxic effects cannot be excluded

### 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

### Inorganic metal oxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): Exposure time: 96 h  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): Exposure time: 48 h  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): Expo-

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----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

plants

sure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): Exposure time: 7 d  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): Exposure time: 21 d  
Method: OECD Test Guideline 211  
Remarks: No toxicity at the limit of solubility  
Based on data from similar materials

### Ecotoxicology Assessment

Acute aquatic toxicity : No toxicity at the limit of solubility

Chronic aquatic toxicity : No toxicity at the limit of solubility

### Persistence and degradability

#### Components:

##### Laminate component:

Biodegradability : Result: Not readily biodegradable.  
Result: Not readily biodegradable.

### Bioaccumulative potential

#### Components:

##### Titanium dioxide:

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

##### Inorganic metal oxide:

Bioaccumulation : Remarks: The product may be accumulated in organisms.  
Based on data from similar materials

# SAFETY DATA SHEET



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----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

### Mobility in soil

No data available

### Other adverse effects

No data available

## 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of contents and container according to wastes control act.



Do not dispose of waste into sewer.

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.

### Disposal precautions

Dispose of contents and container according to wastes control act.

## 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number	: Not applicable
Proper shipping name	: Not applicable
Class	: Not applicable
Subsidiary risk	: Not applicable
Packing group	: Not applicable
Labels	: Not applicable

#### IATA-DGR

UN/ID No.	: Not applicable
Proper shipping name	: Not applicable
Class	: Not applicable
Subsidiary risk	: Not applicable
Packing group	: Not applicable
Labels	: Not applicable
Packing instruction (cargo aircraft)	: Not applicable
Packing instruction (passenger aircraft)	: Not applicable

#### IMDG-Code

UN number	: Not applicable
Proper shipping name	: Not applicable
Class	: Not applicable
Subsidiary risk	: Not applicable
Packing group	: Not applicable

# SAFETY DATA SHEET



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Version 6.0      Revision Date: 2023/12/06      SDS Number (Internal): 3379453-00010      Date of last issue: 2023/04/26  
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Labels : Not applicable  
EmS Code : Not applicable  
Marine pollutant : Not applicable

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

Not applicable for product as supplied.

### National Regulations

Refer to section 15 for specific national regulation.

### Special precautions for user

Not applicable

## 15. REGULATORY INFORMATION

### National regulatory information

#### Regulation under the Occupational Safety and Health Act

#### Harmful Substances Prohibited from Manufacturing

Not applicable

#### Harmful Substances Required Permission for Manufacture

Not applicable

#### Harmful Agents to be kept below Occupational Exposure Limits

Chemical name	CAS-No.
Titanium dioxide	13463-67-7
Aluminum (Soluble salts)	21645-51-2
Inorganic metal oxide	Proprietary Ingredient

#### Harmful Agents Required to be kept below Permission Levels

Not applicable

#### Hazardous substances requiring management

Chemical name	CAS-No.	Threshold limits (%)
Titanium dioxide	13463-67-7	>= 1 %
Laminate component	Proprietary Ingredient	>= 1 %
Aluminum and its compounds	21645-51-2	>= 1 %

#### Special Management Materials

Not applicable

#### Controlled Substances Subject to Environment Monitoring

Chemical name	CAS-No.	Threshold limits (%)
Titanium dioxide	13463-67-7	>= 1 %
Laminate component	Proprietary Ingredient	>= 1 %
Aluminum and its compounds	21645-51-2	>= 1 %
Inorganic metal oxide	Proprietary Ingredient	>= 1 %

# SAFETY DATA SHEET



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Date of first issue: 2018/09/25

### Controlled Substances Subject to Health Examination

Chemical name	CAS-No.	Threshold limits (%)
Mineral dusts	13463-67-7	
Laminate component	Proprietary Ingredient	>= 1 %
Aluminum and its compounds	21645-51-2	>= 1 %
Inorganic metal oxide	Proprietary Ingredient	>= 1 %

### Hazardous Substances Subject to Process Safety Management (PSM) Reporting Obligation

Not applicable

### Regulation under the Chemicals Control Act

#### Toxic Chemicals

Not applicable

#### Restricted Chemicals

Not applicable

#### Prohibited Chemicals

Not applicable

### Toxic Release Inventory

Chemical name	CAS-No.	Group	Threshold limits (%)
Laminate component	Proprietary Ingredient	Group II	>= 1 %
Aluminium and its compounds	21645-51-2	Group II	>= 1 %

### Accident Precaution Chemicals

Not applicable

### Dangerous Substances Safety Management Act

Not Applicable to Dangerous Materials

### Wastes Control Act

Industrial general wastes

Follow article 13 of the act to dispose the product waste

## 16. OTHER INFORMATION

Other information : Ti-Pure™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC.  
Chemours™ and the Chemours Logo are trademarks of The Chemours Company.  
Before use read Chemours safety information.  
For further information contact the local Chemours office or nominated distributors.

# SAFETY DATA SHEET



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----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

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These products may not be directly added to food, pharmaceuticals, cosmetics, or cigarette papers/filters for tobacco products.

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.

In the manufacture of titanium dioxide, product is packaged at temperatures of approximately 100 to 120°C (212 to 248°F).

When pigment is shipped shortly after manufacture, it may stay hot for a very long time depending on ambient temperatures and inventory storage practices. Use caution while handling hot pigment to prevent burns to personnel. Use caution in solvent applications to prevent ignition of solvent.

### 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/>

Issuing date : 2018/09/25

### Revision number and date

Number of Revision : 9

Revision Date : 2023/12/06

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

Date format : yyyy/mm/dd



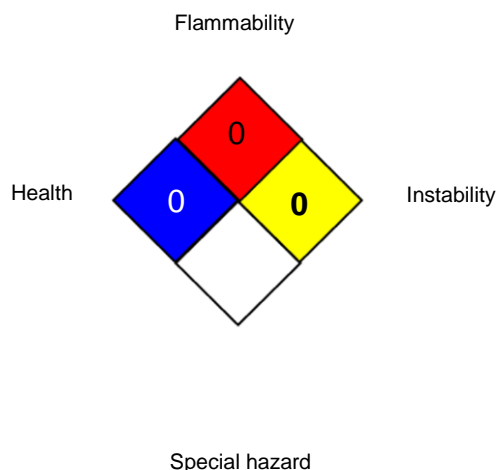
# SAFETY DATA SHEET



## Ti-Pure™ R-796+ Titanium Dioxide Pigment

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----------------	------------------------------	-----------------------------------------	-------------------------------------------------------------------

### NFPA:



### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
KR OEL : Harmful Agents to be kept below Occupational Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average  
KR OEL / TWA : Time Weighted Average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; 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% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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

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6.0	2023/12/06	3379453-00010	Date of first issue: 2018/09/25

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1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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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