Safety Data Sheet

Ti-Pure™ Titanium Dioxide Pigment - Paint Coatings - Dry Grades

Version 5.0

Revision Date 05/09/2016 Ref. 150000002071

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Ti-Pure™ Titanium Dioxide Pigment - Paint Coatings - Dry Grades
Product Grade/Type	:	R-706, R-900, R-902+, R-931, R-960, TS-6200, TS-6300
Product Use	:	Colouring agent, Pigment, For industrial use only.
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	The Chemours Company FC, LLC 1007 Market Street Wilmington, DE 19899 United States of America
Product Information	:	1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency	:	1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Not classified as a hazardous substance or mixture according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 2012.

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

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Component	CAS-No.	Concentration
Titanium dioxide	13463-67-7	80 - 98 %
Aluminum hydroxide	21645-51-2	0 - 9 %
Silicon dioxide, amorphous	7631-86-9	0 - 11 %

SECTION 4. FIRST AID MEASURES

General advice	:	No hazards which require special 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.
Most important symptoms/effects, acute and delayed	:	irritant effects
Protection of first-aiders	:	No special precautions are necessary for first aid responders.
Notes to physician	:	No special protective equipment required. No specific intervention is indicated.

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SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	None known.
Specific hazards	:	Not a fire or explosion hazard.
Special protective equipment for firefighters	:	No special protective equipment required.
Further information	:	The product itself does not burn.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Avoid breathing dust.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Spill Cleanup	:	Pick up and arrange disposal without creating dust. After cleaning, flush away traces with water.
Accidental Release Measures	:	For disposal considerations see section 13.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	:	Avoid breathing dust. 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.
Wash hands before breaks and at the end of workday.

Handling (Physical Aspects)	:	This is a fully oxidized mineral product. As such it cannot support combustion or participate in a dust explosion.
Dust explosion class	:	Not applicable
Storage	:	Keep container tightly closed in a dry and well-ventilated place. Do not allow product to become wet during storage.
Storage period	:	No applicable data available.
Storage temperature	:	No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls	:	Use sufficient ventilation to keep employee exposure below recommended limits.
Personal protective equipment		
Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hand protection	:	Additional protection: Gloves
Eye protection	:	Safety glasses with side-shields
Skin and body protection	:	No personal body protection normally required.
Protective measures	:	No other specific measures identified.

Exposure Guidelines
Exposure Limit Values

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Titanium dioxide				
Permissible exposure limit:	(OSHA)	15 mg/m3	8 hr. TWA	Total dust.
TLV	(ACGIH)	10 mg/m3	TWA	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance		
Physical state	:	solid
Form	:	crystalline
Color	:	white
Odor	:	odourless
Odor threshold	:	Not applicable
pH	:	Not applicable
Melting point/freezing point	:	Melting point 1,843 °C (3,349 °F)
Boiling point/boiling range	:	Boiling point 3,000 °C (5,432 °F)
Flash point	:	does not flash
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	The product is not flammable.
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapor pressure	:	Not applicable

Vapor density	:	Not applicable
Density	:	Not applicable
Specific gravity (Relative density)	:	3.4 - 4.3
Bulk density	:	Not applicable
Water solubility	:	insoluble
Solubility(ies)	:	Not applicable
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Ignition temperature	:	Not applicable
Decomposition temperature	:	Not applicable
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable
Possibility of hazardous reactions	:	None known.
Conditions to avoid	:	None known.
Incompatible materials	:	None known.

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Hazardous decomposition products	:	Not applicable

SECTION 11. TOXICOLOGICAL INFORMATION

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Dermal LD50	:	> 10,000 mg/kg , Rabbit
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	Slight or no skin irritation, Rabbit
Eye irritation	:	Slight or no eye irritation, Rabbit
Sensitisation	:	Did not cause sensitisation on laboratory animals., Local lymph node testMouse Did not cause sensitisation on laboratory animals., Buehler TestGuinea pig
Repeated dose toxicity	:	Oral Rat - No toxicologically significant effects were found. Inhalation Rat - No toxicologically significant effects were found.
Carcinogenicity	:	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.

Mutagenicity	:	Did not cause genetic damage in animals. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	Animal testing showed no reproductive toxicity.
Teratogenicity	:	Animal testing showed no developmental toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

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Material	IARC	NTP	OSHA
Titanium dioxide	2B		

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

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

72 h EC50 : Pseudokirchneriella subcapitata (green algae) > 100 mg/l

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

Environmental Fate

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Biodegradability : Pigments are practically not biodegradable.

Bioaccumulation : Does not bioaccumulate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Dispose of in accordance with local regulations.

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

SECTION 14. TRANSPORT INFORMATION

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Not regulated in transportation by DOT/IMO/IATA.

SECTION 15. REGULATORY INFORMATION

EINECS (EU) Status	:	On the inventory, or in compliance with the inventory
AICS (AU) Status	:	On the inventory, or in compliance with the inventory
DSL (CA) Status	:	On the inventory, or in compliance with the inventory
ENCS (JP) Status	:	On the inventory, or in compliance with the inventory
KECI (KR) Status	:	On the inventory, or in compliance with the inventory
PICCS (PH) Status	:	On the inventory, or in compliance with the inventory
IECSC (CN) Status	:	On the inventory, or in compliance with the inventory
ISHL (JP) Status	:	On the inventory, or in compliance with the inventory
NZIOC Status	:	On the inventory, or in compliance with the inventory
HSNO (NZ) Status	:	Exempt
TSCA	:	On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	:	Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Titanium dioxide, Silicon dioxide, amorphous
NJ Right to Know Regulated Chemical(s)	:	Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Titanium dioxide, Silicon dioxide, amorphous
California Prop. 65	:	WARNING! This product contains a chemical known to the State of California to cause cancer.The listing of titanium dioxide is for "airborne, unbound particles of respirable size." The listing is not applicable to titanium dioxide when it remains bound within a product matrix.

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SECTION 16. OTHER INFORMATION

Restrictions for 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.

For specific information on composition and properties, see Ti-Pure™ Titanium Dioxide Pigment literature. Please see www.Chemours.com/Titanium_Technologies/en_US/ for the latest version of this MSDS.

Revision Date : 05/09/2016

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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