



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

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

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

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Ti-Pure® Titanium Dioxide Pigment - Paint Coatings - Dry Grades
 Product Grade/Type : R-706, R-900, R-902+, R-931, R-960, TS-6200
 MSDS Number : 150000002071
 Product Use : Colouring agents, pigments
 Manufacturer : E.I. du Pont Canada Company
 P.O. Box 2200, Streetsville
 Mississauga, ON
 L5M 2H3
 Canada
 Product Information : 1-800-387-2122
 Medical Emergency : 1-800-441-3637 (24 hours)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Warning symptoms:
 irritant effects

Potential Health Effects

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

Carcinogenicity
 Material

IARC	OSHA	ACGIH
------	------	-------

Titanium dioxide	2B
------------------	----

**DuPont™ Ti-Pure® Titanium Dioxide Pigment - Paint Coatings - Dry Grades**

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Titanium dioxide	13463-67-7	80 - 98 %
Aluminum hydroxide	21645-51-2	5 - 10 %
Silicon dioxide, amorphous	7631-86-9	7 - 13 %

SECTION 4. FIRST AID MEASURES

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

SECTION 5. FIREFIGHTING MEASURES

- Flammable Properties
- Flash point : does not flash
- Upper explosion limit/ upper flammability limit : not applicable

**DuPont™ Ti-Pure® Titanium Dioxide Pigment - Paint Coatings - Dry Grades**

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

- Fire and Explosion Hazard : Not a fire or explosion hazard.
- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Firefighting Instructions : No special protective equipment required.
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.
- Spill Cleanup : Pick up and arrange disposal without creating dust. After cleaning, flush away traces with water.
- Accidental Release Measures : Do not flush into surface water or sanitary sewer system.

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.
- Storage : Keep container tightly closed in a dry and well-ventilated place.



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

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

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.

Exposure Guidelines
Exposure Limit Values

Titanium dioxide			
TLV	(ACGIH)	10 mg/m3	TWA
AEL *	(DUPONT)	10 mg/m3	8 & 12 hr. TWA Total dust.
AEL *	(DUPONT)	5 mg/m3	8 & 12 hr. TWA Respirable dust.

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

**DuPont™ Ti-Pure® Titanium Dioxide Pigment - Paint Coatings - Dry Grades**

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: crystalline
Color	: white
Odor	: odourless
pH	: not applicable
Melting point	: 1,843 °C (3,349 °F)
Boiling point	: 3,000 °C (5,432 °F)
% Volatile	: 0 %
Specific gravity	: 3.4 - 4.3
Water solubility	: insoluble

SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable
Incompatibility	: None.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Inhalation 4 h LC50	: > 6.82 mg/l , rat
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., mouse Did not cause sensitisation on laboratory animals., guinea pig
Repeated dose toxicity	: Oral rat No toxicologically significant effects were found. Inhalation


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

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

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, DuPont 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.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity**

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

96 h LC50

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



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

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

72 h EC50 : Pseudokirchneriella subcapitata (green algae) 61 mg/l

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

Environmental Fate

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

Bioaccumulation : Does not bioaccumulate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

TDG: Not regulated.

SECTION 15. REGULATORY INFORMATION

DSL (CA) Status : On the inventory, or in compliance with the inventory

HSNO (NZ) Status : Exempt

WHMIS Classification : D2A - Very Toxic Material Causing Other Toxic Effects
Carcinogen

Remarks : This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

SECTION 16. OTHER INFORMATION



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

Version 3.1

Revision Date 12/18/2013

Ref. 150000002071

MSDS preparation date : 12/18/2013

Restrictions for use : Ti-Pure® products may not be directly added to food or pharmaceuticals and are not recommended for use in medical devices or cosmetics.

Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications and DuPont CAUTION Regarding Medical Applications.

Ti-Pure® is a Registered Trademark of E. I. du Pont de Nemours and Company.

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.

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