



Expect Service

Radiation Products Design Inc

MATERIAL SAFETY DATA SHEET

RPD INFORMATION

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Albertville, MN 55301

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Phone 763-497-2071 or 800-497-2071

Fax 763-497-2295

RPD PRODUCT INFORMATION

RPD is an authorized distributor

Item Number	Description
468-014	Tattoo Ink - 1/2 oz White

**Ti-Pure[®] Titanium Dioxide Pigment - Paint Coatings - Dry Grades**

Version 4.0

Revision Date 10/03/2011

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
Tradename/Synonym : Supercedes MSDS 2816CR
MSDS Number : 150000002071
Product Use : Colouring agents, pigments
Manufacturer : DuPont
1007 Market Street
Wilmington, DE 19898
Product Information : 1-302-774-1000
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

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 NTP OSHA
Titanium dioxide 2B

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

- 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.

SECTION 5. FIREFIGHTING MEASURES

- Flammable Properties
- Flash point : does not flash
- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Firefighting Instructions : 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.

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- 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.

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

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Exposure Guidelines

Exposure Limit Values

Titanium dioxide

PEL:	(OSHA)	15 mg/m3	8 hr. TWA Total dust.
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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: crystalline
Color	: white
Odor	: odourless
pH	: not applicable
% Volatile	: 0 %
Specific gravity	: 3.4 - 4.3
Water solubility	: insoluble

SECTION 10. STABILITY AND REACTIVITY

Stability	: Stable
Incompatibility	: None.

SECTION 11. TOXICOLOGICAL INFORMATION

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Inhalation 4 h LC50 : > 6.82 mg/l , rat

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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 sensitization on laboratory animals., mouse Did not cause sensitization on laboratory animals., guinea 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/m ³ of respirable TiO ₂ . Slight lung fibrosis was observed at 50 and 250 mg/m ³ levels. Microscopic lung tumours were also observed in 13 percent of the rats exposed to 250 mg/m ³ , 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 ₂ 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

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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

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

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

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

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

Not regulated in transportation by DOT/IMO/IATA.

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SECTION 15. REGULATORY INFORMATION

EINECS Status	: On the inventory, or in compliance with the inventory
TSCA Status	: On the inventory, or in compliance with the inventory
AICS Status	: On the inventory, or in compliance with the inventory
DSL 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
INV (CN) Status	: On the inventory, or in compliance with the inventory

SARA 313 Regulated Chemical(s)	: SARA 313: 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.
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California Prop. 65	: WARNING! This product contains a chemical known to the State of California to cause cancer. The listing of titanium dioxide (airborne, unbound particles of respirable size) as a carcinogen is effective September 2, 2011. The listing does not cover titanium dioxide when it remains bound within a product matrix.
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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
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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
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SECTION 16. OTHER INFORMATION**HMIS**

Health	:	1
Flammability	:	0
Reactivity/Physical hazard	:	0
PPE	:	Personal Protection rating to be supplied by user depending on use



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conditions.

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 H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.

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

For specific information on composition and properties, see DuPont Ti-Pure[®] Titanium Dioxide Pigment literature. Please see www2.dupont.com/Titanium_Technologies/en_US/ for the latest version of this MSDS.

Contact person : MSDS Coordinator DuPont Titanium Technologies; Wilmington, DE 19898; Telephone (800) 441-9485

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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