

# Titanium Dioxide (TiO<sub>2</sub>) Nanopowder / Nanoparticles Xylene Dispersion

**US Research Nanomaterials, Inc.**

[www.us-nano.com](http://www.us-nano.com)

## SAFTY DATA SHEET

Revised Date 12/29/2017

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name: Titanium Dioxide (TiO<sub>2</sub>) Xylene Dispersion  
Product Number : US7032  
Titanium Dioxide (TiO<sub>2</sub>) CAS#: 13463-67-7  
Xylene CAS#: 95-47-6

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Research

#### 1.3 Details of the supplier of the safety data sheet

Company: [US Research Nanomaterials, Inc.](http://www.us-nano.com)  
3302 Twig Leaf Lane  
Houston, TX 77084  
USA  
Telephone: +1 832-460-3661  
Fax: +1 281-492-8628

#### 1.4 Emergency telephone number

Emergency Phone # : (832) 359-7887

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Flammable liquids, Category 3  
Acute toxicity, Category 5, Oral  
Acute toxicity, Category 4, Dermal  
Acute toxicity, Category 4, Inhalation  
Skin corrosion/irritation, Category 2  
Serious eye damage/eye irritation, Category 2A  
Aspiration hazard, Category 1  
Specific target organ toxicity - single exposure, Category 3, Respiratory tract irritation  
Acute hazards to the aquatic environment, Category 2

#### 2.2 GHS Label elements, including precautionary statements



Pictogram

Signal word

Warning

Hazard statement(s)

H226: Flammable liquid and vapor.

H312: Harmful in contact with skin.

H332: Harmful if inhaled.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

Precautionary statement(s)

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240: Ground/Bond container and receiving equipment.

P241: Use explosion-proof-electrical/ventilating/lighting/.../equipment

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P370+P378: In case of fire: Use ... for extinction.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS**

None

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Titanium Dioxide (TiO<sub>2</sub>) CAS#: 13463-67-7

Xylene CAS#: 95-47-6

**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed**

no data available

### **5. FIREFIGHTING MEASURES**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use water spray to cool unopened containers. Cool closed containers exposed to fire with water spray.

#### **5.2 Special hazards arising from the substance or mixture**

Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>)

#### **5.3 Advice for firefighters**

Wear self contained breathing apparatus for firefighting if necessary.

#### **5.4 Further information**

no data available

### **6. ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### **6.2 Environmental precautions**

Do not let product enter drains.

#### **6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### **6.4 Reference to other sections**

For disposal see section 13.

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.2.

#### **7.2 Conditions for safe storage, including any incompatibilities**

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

#### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **8.1 Control parameters**

Personal, workplace or environmental monitoring may be necessary to ensure exposures are below

recommended and legal limits.

ACGIH STEL: 150 ppm, TWA: 100ppm

SG OEL STEL: 150 ppm, 651 mg/m<sup>3</sup>; TWA: 100 ppm, 434 mg/m<sup>3</sup>

## **8.2 Exposure controls**

### **Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### **Personal protective equipment**

#### **Eye/face protection**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin protection**

For any handling steps where the substance is in particulate form or in a suspension with pure water where the substance is not solubilized, the gloves must be comprised of material that successfully passes ASTM F-1671. For any handling steps where the substance is part of a carrier liquid, other than the aqueous suspension noted in the previous paragraph, gloves must be comprised of material that successfully passes ASTM F-739 (continuous liquid contact method). Gloves must be changed before they show degradation and before the designated breakthrough time for the carrier liquid (as determined by the ASTM F-739 testing or by the manufacturer). Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### **Body Protection**

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

The EPA mandates the use of full face respirators with minimum N100 grade cartridges if there is any risk of exposure to the dust. For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### **Control of environmental exposure**

Do not let product enter drains.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

- a) Appearance: liquid
- b) Odor: Aromatic
- c) Odor Threshold: No information available
- d) pH: no data available
- e) Melting point/freezing point: <0 °C
- f) Initial boiling point and boiling range: <=145 °C
- g) Flash point: 27 - 32 °C
- h) Evaporation rate: no data available
- i) OSHA Flammability Class: no data available
- j) Upper/lower flammability or explosive limits: 1 – 7.6%(V)
- k) Vapor pressure: 882 Pa at 25 °C
- l) Vapor density (air = 1): no data available
- m) Relative density (water = 1): 0.884 at 15 °C
- n) Water solubility: 0.2 Kg/m<sup>3</sup>
- o) Partition coefficient - noctanol/water: no data available
- p) Auto-ignition temperature: no data available
- q) Decomposition temperature: Stable under normal conditions of use.
- r) Viscosity: no data available

s) Explosive properties: no data available

t) Molecular Weight: 106.16

## 9.2 Other safety information

no data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Stable under normal conditions of use.

### 10.2 Chemical stability

Stable at normal temperature and pressures.

### 10.3 Possibility of hazardous reactions

Will not polymerize. May decompose, exotherm or catch fire with mixed with incompatible materials.

### 10.4 Conditions to avoid

Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers. Do not store at elevated temperatures.

### 10.5 Incompatible materials

Strong acids, strong bases, strong oxidizers, nitrates

### 10.6 Hazardous decomposition products

Other decomposition products - Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Acute oral toxicity: May be harmful if swallowed. LD<sub>50</sub> >2000 - ≤5000 mg/Kg

Acute inhalation toxicity: Harmful if inhaled. LC<sub>50</sub> > 10.0 - ≤ 20.0 mg/l

Acute dermal toxicity: Harmful in contact with skin. LD<sub>50</sub> >1000 - ≤2000 mg/Kg

#### Skin corrosion/irritation

Cause skin irritation.

#### Serious eye damage/eye irritation

Cause serious eye irritation

#### Respiratory or skin sensitisation

Not expected to be a skin sensitizer.

#### Germ cell mutagenicity

Not mutagenic

#### Carcinogenicity

Not expected to be carcinogenic

#### Reproductive toxicity

Not a developmental toxicant.

#### Specific target organ toxicity - single exposure

Inhalation of vapors or mists may cause irritation to the respiratory system.

#### Specific target organ toxicity - repeated exposure

Not classified as specific target organ toxicity.

#### Aspiration hazard

Product may be an aspiration hazard

## Additional Information

### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity

Toxicity in fish: LL/EL/IL50 >1 - <=10 mg/l

Toxicity to algae: LL/EL/IL50 >1 - <=10 mg/l

#### 12.2 Persistence and degradability

Biodegradable 100%

#### 12.3 Bioaccumulative potential

Not expected

#### 12.4 Mobility in soil

no data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

Do not allow product to enter surface waters, wastewater or soil.

### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

##### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

##### Contaminated packaging

### 14. TRANSPORT INFORMATION

#### US DOT Information

Shipping Name: Xylenes

Hazard Class: 3

UN/NA #: UN1307

Packing Group: III

Required Label(s): 3

#### IMDG Information

Shipping Name: Xylenes

Hazard Class: 3

UN/NA #: UN1307

Packing Group: III

Required Label(s): 3

#### IATA Information

Shipping Name: Xylenes

Hazard Class: 3

UN/NA #: UN1307

Packing Group: III

Required Label(s): 3

## 15. REGULATORY INFORMATION

### **SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### **SARA 313 Components**

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.

### **SARA 311/312 Hazards**

Acute Health Hazard

### **Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

### **Pennsylvania Right To Know Components**

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### **New Jersey Right To Know Components**

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### **California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. OTHER INFORMATION

### **Full text of H-Statements referred to under sections 2 and 3.**

H226 Flammable liquid and vapor.

H335 May cause respiratory irritation.

### **HMIS Rating**

Health hazard: 1

Chronic Health Hazard:

Flammability: 3

Physical Hazard 0

### **NFPA Rating**

Health hazard: 1

Fire Hazard: 3

Reactivity Hazard: 0

### **Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.