

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name: Titanium Oxide Nanowire Dispersion B, Research Grade

Catalog Number: NovaWire-CMTiO-10-RD

Formula: TiO<sub>2</sub>

Diameter: ~ 10 nm

Length: ~ 10 micron

Supplier: Novarials Corporation  
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Woburn, MA 01801

Telephone: +1 617-276-5642

Fax: +1 781-995-0388

**2. HAZARDS IDENTIFICATION**

**Emergency Overview**

**GHS Classification**

Carcinogenicity (Category 2), H351

**GHS Label elements, including precautionary statements**

Pictogram



Signal word Warning

Hazard statement(s)

H351 Suspected of causing cancer.

Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P281 Use personal protective equipment as required.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

**HMIS Ratings**

Health hazard: 0

Chronic health hazard: \*

**Flammability:** 0  
**Physical hazard:** 0

**NFPA Ratings**

**Health hazard:** 0  
**Fire hazard:** 0  
**Reactivity hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** May be harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms: Titanium Oxide  
Formula: TiO<sub>2</sub>  
Molecular Weight: 79.87 g/mol

Component	Concentration
<b>Titanium dioxide</b>	
CAS-No.	13463-67-7
EC-No.	236-675-5
<b>Water</b>	
CAS-No.	7732-18-5
EC-No.	231-791-2

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**4. FIRST AID MEASURES**

**General advice**

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

**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.

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**5. FIREFIGHTING MEASURES**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for firefighting if necessary.

### **Hazardous combustion products**

Hazardous decomposition products formed under fire conditions – titanium/titanium oxides

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## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### **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.

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## **7. HANDLING AND STORAGE**

### **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.

### **Conditions for safe storage**

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

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## **8. PERSONAL PROTECTION**

### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respiration type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### **Hand protection**

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.

### **Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### **Body protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### **Hygiene measures**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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

**APPEARANCE**

Form suspension  
Color white

**Safety data**

pH no data available  
Melting point/freezing point no data available  
Boiling point no data available  
Flash point not applicable  
Ignition temperature no data available  
Auto ignition temperature no data available  
  
Lower explosion limit no data available  
Upper explosion limit no data available  
Vapour pressure no data available  
Density no data available  
Water solubility no data available  
Partition coefficient:  
n-octanol/water no data available  
Relative vapour density no data available  
Odour odourless  
Odour Threshold no data available  
Evaporation rate no data available

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**10. STABILITY AND REACTIVITY****Reactivity**

no data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

no data available

**Materials to avoid**

Strong acids

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions – titanium/titanium oxides  
Other decomposition products -no data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD50 Oral – rat - >10,000 mg/kg

**Inhalation LC50**

no data available

**Dermal LD50**

no data available

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

Skin – human – Mild skin irritation – 3h

**Serious eye damage/eye irritation**

Eyes – rabbit – no eye irritation

**Respiratory or skin sensitization**

Will not occur

**Germ cell mutagenicity**

Genotoxicity in vitro – Hamster – ovary

Micronucleus test

Genotoxicity in vitro – Hamster – lungs

DNA inhibition

Genotoxicity in vitro – Hamster – ovary

Sister chromatid exchange

Genotoxicity in vitro – Mouse – intraperitoneal

Micronucleus test

**Carcinogenicity**

Suspected human carcinogens

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity -single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity -repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Synergistic effects**

no data available

**Additional Information**

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## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to fish	LC50 – other fish - >1,000 mg/l – 96h
Toxicity to daphnia and other aquatic invertebrates	EC50 – Daphnia magna (water flea) - > 1,000 mg/l – 48h EC0 – Daphnia magna (water flea) - > 1,000 mg/l – 48h

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### PBT and vPvB assessment

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

### Other adverse effects

no data available

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## 13. DISPOSAL CONSIDERATIONS

### 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

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

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## 15. REGULATORY INFORMATION

### OSHA Hazards

Carcinogen

### 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 materials 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**

Chronic Health Hazard

**Massachusetts Right To Know Components**

Titanium Oxide

CAS-No. 13463-67-7

**Pennsylvania Right To Know Components**

Titanium Oxide

CAS-No. 13463-67-7

Water

CAS-No. 7732-18-5

**New Jersey Right To Know Components**

Titanium Oxide

CAS-No. 13463-67-7

Water

CAS-No. 7732-18-5

**California Prop. 65 Components**

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

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**16. DISCLAIMER**

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