Titanium Dioxide (TiO2) Nanopowder / Nanoparticles Xylene Dispersion

US Research Nanomaterials, Inc. www.us-nano.com

SAFTY DATA SHEET

Revised Date 2/28/2023

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Titanium Dioxide (TiO2) Xylene Dispersion
Titanium Dioxide (TiO2) 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. 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 Danger

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_2) 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_2)

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/m3; TWA: 100 ppm, 434 mg/m3

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/m3
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_2) 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. LD50 >2000 - <=5000 mg/Kg Acute inhalation toxicity: Harmful if inhaled. LC50 > 10.0 - <= 20.0 mg/l
Acute dermal toxicity: Harmful in contact with skin. LD50 >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

Titanium Dioxide (TiO_2) CAS#: 13463-67-7 Xylene CAS#: 95-47-6
New Jersey Right To Know Components Titanium Dioxide (TiO_2) CAS#: 13463-67-7 Xylene CAS#: 95-47-6

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.