Printing date 06/03/2024

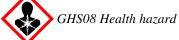
Reviewed on 06/03/2024

1 Identification

- · Product identifier
- · Trade name: Titanium Dioxide, Nanoparticulate Powder
- · Article number: T5976
- · CAS Number: 13463-67-7
- · EC number: 236-675-5
- · Index number: 022-006-00-2
- · Details of the supplier of the safety data sheet · Manufacturer/Supplier: Aqua Solutions, Inc. 6913 Highway 225 DEER PARK, TX 77536 USA 800-256-2586
- · Information department: Technical Coordinator Sherman Nelson shermann@aquasolutions.org Technical Coordinator Sherman Nelson shermann@aquasolutions.org · Emergency telephone number: Chemtrec: 800-424-9300 Canutec: 613-996-6666

2 Hazard(s) identification

· Classification of the substance or mixture



Carcinogenicity 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.

- · Label elements
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS). · Hazard pictograms



· Signal word Warning

· Hazard statements

Suspected of causing cancer. Route of exposure: Inhalation.

· Precautionary statements

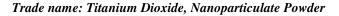
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. IF exposed or concerned: Get medical advice/attention. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

US

Printing date 06/03/2024

Reviewed on 06/03/2024





- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · **vPvB:** Not applicable.

3 Composition/information on ingredients

- \cdot Chemical characterization: Substances
- · CAS No. Description
- CAS: 13463-67-7 Titanium Dioxide
- · Identification number(s)
- EC number: 236-675-5
- Index number: 022-006-00-2

4 First-aid measures

- · Description of first aid measures
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Generally the product does not irritate the skin.
- · After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed
- No further relevant information available.

5 *Fire-fighting measures*

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

6 Accidental release measures

• Personal precautions, protective equipment and emergency procedures Not required.

· Environmental precautions: No special measures required.

(Contd. on page 3)

Printing date 06/03/2024

Reviewed on 06/03/2024

(Contd. of page 2)

Trade name: Titanium Dioxide, Nanoparticulate Powder

• *Methods and material for containment and cleaning up:* Dispose contaminated material as waste according to section 13. • *Reference to other sections*

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

• Protective Action Criteria for Chemicals

· PAC-1: 30 mg/m³

- · PAC-2: 330 mg/m³
- · PAC-3: 2,000 mg/m³

7 Handling and storage

- · Handling:
- Precautions for safe handling No special precautions are necessary if used correctly.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities

· Storage:

- · Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

· Control parameters

· Components with limit values that require monitoring at the workplace:

CAS: 13463-67-7 Titanium Dioxide

- PEL Long-term value: 15* mg/m³ *total dust
- REL See Pocket Guide App. A
- TLV Long-term value: $0.2 \times 2.5 \times mg/m^3$
- resp. fraction, *nanoscale, **finescale, A3
- Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

- · Personal protective equipment:
- · General protective and hygienic measures:
- Keep away from foodstuffs, beverages and feed.
- Wash hands before breaks and at the end of work.
- Breathing equipment: Not required.
- Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation • Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

(Contd. on page 4)

Printing date 06/03/2024

Reviewed on 06/03/2024

(Contd. of page 3)

Trade name: Titanium Dioxide, Nanoparticulate Powder

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• *Eye protection:* Not required.

· Body protection: Protective work clothing

9 Physical and chemical properties

Information on basic physical and o General Information	chemical properties	
· General Information · Appearance:		
Form:	Powder	
Color:	White	
· Odor:	Odorless	
· Odor threshold:	Not determined.	
· pH-value:	~7	
· Change in condition		
Melting point/Melting range:	>1,800 °C (>35.200 °F)	
Boiling point/Boiling range:	>2,500 °C (>36.500 °F)	
· Flash point:	Not applicable.	
· Flammability (solid, gaseous):	Product is not flammable.	
· Decomposition temperature:	Not determined.	
· Ignition temperature:	Not determined.	
• Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
· Vapor pressure:	Not applicable.	
· Density at 20 °C (68 °F):	~3.8 g/cm ³ (~31.711 lbs/gal)	
· Bulk density:	$\sim 500 \ kg/m^3$	
· Relative density	Not determined.	
· Vapor density	Not applicable.	
• Evaporation rate	Not applicable.	
· Solubility in / Miscibility with		
Water:	Insoluble.	
· Partition coefficient (n-octanol/wat	er): Not determined.	
· Viscosity:		
Dynamic:	Not applicable.	
Kinematic:	Not applicable.	
• Other information	No further relevant information available.	

10 Stability and reactivity

• *Reactivity* No further relevant information available.

(Contd. on page 5)

US

Printing date 06/03/2024

Reviewed on 06/03/2024

(Contd. of page 4)

Trade name: Titanium Dioxide, Nanoparticulate Powder

- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer) 2B
- · NTP (National Toxicology Program) Substance is not listed.
- · OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- *Mobility in soil* No further relevant information available.
- Additional ecological information:
- · General notes: Not hazardous for water.
- · Results of PBT and vPvB assessment
- *PBT:* Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number

· DOT, ADN, IMDG, IATA

Not regulated

Printing date 06/03/2024

Reviewed on 06/03/2024

Trade name: Titanium Dioxide, Nanoparticulate Powder

		(Contd. of page 2
· UN proper shipping name · DOT, ADN, IMDG, IATA	Not regulated	
· Transport hazard class(es)		
· DOT, ADN, IMDG, IATA · Class	Not regulated	
· Packing group · DOT, IMDG, IATA	Not regulated	
· Environmental hazards: · Marine pollutant:	No	
· Special precautions for user	Not applicable.	
• Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.	
· UN "Model Regulation":	Not regulated	

15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- · TSCA (Toxic Substances Control Act): ACTIVE
- · Hazardous Air Pollutants Substance is not listed.
- · Proposition 65
- · Chemicals known to cause cancer: Substance is listed.
- · Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- · Chemicals known to cause developmental toxicity: Substance is not listed.
- · Carcinogenic categories
- · EPA (Environmental Protection Agency) Substance is not listed.
- · TLV (Threshold Limit Value) A4
- · NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is listed.
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms



· Signal word Warning

· Hazard statements

Suspected of causing cancer. Route of exposure: Inhalation.

- · Precautionary statements
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Get medical advice/attention.

(Contd. on page 7)

US

Printing date 06/03/2024

Reviewed on 06/03/2024

(Contd. of page 6)

Trade name: Titanium Dioxide, Nanoparticulate Powder

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Department issuing SDS:** Environment protection department.

· Contact:

Date of Preparation / Last Revision: · Date of preparation / last revision Revision 1.2, 05/31/2024: Reviewed SDS for accuracy. MH/STN 06/03/2024 · Abbreviations and acronyms: IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Carcinogenicity 2: Carcinogenicity – Category 2 \cdot * Data compared to the previous version altered.

- US