

MATERIAL SAFETY DATA SHEET

PRODUCT: Aqueous Dispersion of Titania (TiO₂) Nanoparticles

1. PRODUCT AND COMPANY IDENTIFICATION

Commercial Product Name SOLIT, Titania nanoparticle dispersion in water

Catalogue Codes: AD10NPPTiO2150R

Manufacturer's Details

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	Titania	Classification	Regulation (EC) No. 1272/2008. Skin corrosion (Category 1B), H314 Skin sensitisation (Category 1), H302, H314, H317 EU Directives 67/548/EEC/ 1999/45/EC Xi Irritant R43 Xi Irritant R36/38 Acute Tox. 4; Xn, R22 - R34 - R43
CAS #	13463-67-7	REACH #	Not required, refer to 15.0

3. HAZARDS IDENTIFICATION

3.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Skin corrosion (Category 1B), H314

Skin sensitisation (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xi Irritant R43

Xi Irritant R36/38

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008



Pictogram

Signal word Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

Precautionary statement(s)

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements

none

According to European Directive 67/548/EEC as amended.



Hazard symbol(s)

Xi Irritant

R-phrases(s)

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

S-phrases(s)

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37 Wear suitable protective clothing and gloves.

2.3 Other hazards - none

Mixtures

Synonyms : NH₂ functionalized NPs

Hazardous ingredients according to Regulation (EC) No 1272/2008

4. FIRST AID MEASURES

Inhalation

Move exposed person to fresh air. Get medical attention for any breathing difficulty. Loosen clothing and place exposed in a comfortable position. Seek medical assistance if cough or other symptoms appear.

Skin contact

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. If irritation develops seek medical attention.

Eye Contact

Rinse immediately with plenty of water, also under eyelids, for at least 15 minutes. Get prompt medical attention.

Ingestion

Drink lots of water. If large amounts were swallowed, get medical attention.

5. FIRE-FIGHTING MEASURES**Fire and Explosion Hazard**

Negligible fire and explosion hazard

Suitable Extinguishing Media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

Specific hazards

Special hazards arising from the substance or mixture: Thermal decomposition can lead to release of irritating gases and vapours; silicon oxides

Special Protective Equipment for Firefighter

Wear appropriate clothing to prevent skin exposure. Wear protective eyewear, gloves, and clothing. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions**

Ensure adequate ventilation. Ensure that air-handling systems are operational. Avoid contact with skin and eyes.

Environmental Precautions

Refer to 12.0 ecotoxicology information.

Methods for Cleaning up

Shovel or sweep up. Shovel into suitable container for disposal. Avoid dust forming by spraying water on spillage. Avoid spillage from entering drains or water courses. Dispose of as normal trade waste in compliance with local and national regulations.

7. HANDLING AND STORAGE**Safe handling advice**

Avoid contact with skin and eyes. Avoid the formation of dust. Do not breathe dust. Ensure adequate ventilation.

Technical measures / Storage conditions

Keep container tightly closed (hygroscopic).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure limit(s)**

Not available.

Personal Protection Equipment

Avoid contact with skin and eyes. Avoid dust formation.

9. PHYSICAL AND CHEMICAL PROPERTIES

pH (1% solution)	6-8	Physical Appearance	Nano Titania particle (transparent) dispersed in water
Boiling point	188°C (370.4°F)	Form	Nano Titania particle (transparent) dispersed in water in Nalgene bottles
Melting point	-59°C (-74.2°F)	Colour	Colourless
Decomposition Temperature	>1600°C	Odour	Odourless
Flash Point	Not applicable	Vapour Pressure	0 kPa (@ 20°C) 0.08 mmHg at 20°C 0.129 mmHg at 25°C
Flammability	Not applicable	Relative Density	Not applicable
Auto Ignition Temperature	Not applicable	Water Solubility	Soluble in cold water, hot water and acetone.
Explosive Properties	Not applicable	Fat solubility	No data available
Explosion Limits	Not applicable		

Conditions to avoid

Keep containers dry and tightly closed to avoid moisture absorption and contamination (hygroscopic).

Hazardous decomposition products

Not applicable

10. STABILITY AND REACTIVITY

Conditions to avoid

Keep containers dry and tightly closed to avoid moisture absorption and contamination (hygroscopic).

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - silicon oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	No additional information	Single Target Organ (STOT)	No additional information
Chronic Toxicity	No additional information	Numerical Measures	No additional information
Corrosion Irritation	No additional information	Carcinogenicity:	Not listed as a carcinogen (ACGIH, IARC, NTP): 1343-98-2 (Titania)
Sensitization	No additional information	Mutagenicity	No additional information
Human Experience	Skin, Eye irritation	Reproductive Toxicity	No additional information

12. ECOLOGICAL INFORMATION

No classification as to environmental hazards required.

Persistence	Stable	Bioaccumulation	No data available
Degradability	Stable	Mobility	No data available

Ecotoxicity LC50/96h

<i>Gambusia affinis</i>	13 400 mg/l	<i>Nitocra spinipes</i>	1600 mg/l
<i>Lepomis macrochirus</i>	10650 mg/l	<i>Nitzschia linearis</i>	3130 mg/l
<i>Daphnia</i>	649 mg/l		

13. DISPOSAL CONSIDERATIONS

Contaminated Packaging

In accordance with local and national regulations.

Waste from residues / unused products

In accordance with local and national regulations.

UN	Not regulated	IMO	Not regulated
Packing Group	Not regulated	ICAO	Not regulated
ADR / RID	Not regulated		

15. REGULATORY INFORMATION

The product is classified and labelled in accordance with EU directives for REACH and CLP. A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge 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, since the conditions of the operations mentioned are beyond our control. 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. The information in this document is based on then 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



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Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred using this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.