

TITANIUM DIOXIDE ULTRA FINE – SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

PRODUCT IDENTIFIER

Product Name	Titanium Dioxide Ultra Fine	
INCI Name	Titanium Dioxide	
CAS Number	13463-67-7	

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Registered distributor company name	Pure Ingredients	Pure Nature
Address	626A Rosebank Road, Avondale 1026	626A Rosebank Road, Avondale 1026
Telephone	+64 9 813 5619	+64 9 813 9412
Website	www.pureingredients.co.nz	www.purenature.co.nz
Email	compliance@pureingredients.co.nz	info@purenature.co.nz

EMERGENCY TELEPHONE NUMBER

Association / Organisation	0800 CHEMCALL / 0800 243 622 (24hr)	
Emergency telephone numbers	111	
Other emergency telephone numbers	0800 764 766	

SECTION 2 HAZARDS IDENTIFICATION

Hazard Classification	Not classified
Hazard Nature	This product is not classified as hazardous under HSNO and GHS criteria.
Pictogram(s)	Nil
Signal Word	Nil
Hazard Statement(s)	Nil
Prevention Statements(s)	Nil
Response Statement(s)	Nil
Storage Statement(s)	Nil
Disposal Statement(s)	Nil

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

% [volume/weight]	INCI Name	CAS No.
90 – 100	Titanium Dioxide	13463-67-7

SECTION 4 FIRST AID MEASURES

General advice: Do not leave the victim unattended. Treat symptomatically.

If inhaled: Remove person to fresh air. If signs/symptoms continue, get medical attention. If unconscious, place in recovery position and seek medical advice.

In case of skin contact: Wash off with soap and water.

In case of eye contact: Rinse immediately with plenty of water, also under the eyelids. Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.

If swallowed: Rinse mouth with water. If conscious, give the victim small amounts of water to drink. Do not induce vomiting without medical advice. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed: Dust contact with the eyes can lead to mechanical irritation. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. The product is not irritant but as with all fine powders can absorb moisture and natural oils from the surface of the skin during prolonged exposure. Individuals with sensitive skin may experience skin drying on prolonged or repeated exposure.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

Notes to physician: No specific measures identified.

TITANIUM DIOXIDE ULTRA FINE – SAFETY DATA SHEET

SECTION 5 FIREFIGHTING MEASURES

Suitable extinguishing media: Product is compatible with standard fire-fighting agents.
Unsuitable extinguishing media: High volume water jet
Specific hazards during firefighting: No information available.
Hazardous combustion products: No hazardous combustion products are known.
Specific extinguishing methods: Cool containers/tanks with water spray.
Further information: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: No action shall be taken involving any personal risk or without suitable training. Prevent unauthorized persons entering the zone. Avoid dust formation. Remove all sources of ignition. Ventilate the area. Keep people away from and upwind of spill/leak. Only qualified personnel equipped with suitable protective equipment may intervene. Never return spills in original containers for re-use. Treat recovered material as described in section 13. The danger areas must be delimited and identified using relevant warning and safety signs.
Environmental precautions: Try to prevent the material from entering drains or water courses. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up:
Small spillage: Clean up promptly by sweeping or vacuum. Keep in suitable, closed containers for disposal.
Large spillage: Approach release from upwind. Clean up promptly by sweeping or vacuum. Avoid creating dusty conditions and prevent wind dispersal. Keep in suitable, closed containers for disposal.

SECTION 7 HANDLING AND STORAGE

Technical measures: Ensure that eyewash stations and safety showers are close to the workstation location.
Local/Total ventilation: Use only with adequate ventilation.
Advice on protection against fire and explosion: Normal measures for preventive fire protection.
Advice on safe handling:
 For personal protection see section 8.
 Avoid formation of respirable particles. Do not breathe vapors/dust.
 Smoking, eating and drinking should be prohibited in the application area.
 Manual handling guidelines should be adhered to when handling sacks.
 In the manufacture of titanium dioxide, product is packaged at temperatures of approximately 100 to 120° C (212 to 248° Fahrenheit). When pigment is shipped shortly after manufacture, it may stay hot for a very long time depending on ambient temperatures and inventory storage practices. Due to the potential of elevated pigment temperature, caution should be used while handling pigment and in solvent applications. Each work environment must be assessed to determine hazards.
 Empty flexible intermediate bulk containers (FIBC's) by gravity only (do not empty pneumatically). Remove all wrapping prior to emptying FIBC's.
 In all cases, the protective cover or wrapping should remain in place during storage and only be removed immediately prior to use.
 Care should be taken to avoid moisture, particularly with a partly used pallet of material.
 When transferring from one container to another apply earthing measures and use conductive hose material.
Conditions for safe storage:
 Store in accordance with the particular national regulations.
 Keep only in the original container in a cool, well ventilated place away from oxidizing agents. Keep in a dry place. Keep cool. Protect from sunlight.
 Eliminate all ignition sources if safe to do so.
 Keep container closed when not in use.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Use appropriate container to avoid environmental contamination.
 When using standard pallets, those containing paper or plastics bags can be stacked to a maximum of 2 high.
Materials to avoid: No materials to be especially mentioned.
Further information on storage stability: Keep in a dry place. No decomposition if stored and applied as directed.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Ingredients with workplace control parameters:

Components	CAS Number	Value Type (form of exposure)	Control parameters	Basis
Titanium dioxide	13463-67-7	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA	10 mg/m3	ACGIH
		TWA (total dust)	10 mg/m3	OSHA P0

Engineering measures: Ensure adequate ventilation, especially in confined areas. Use engineering controls to keep exposures below the OEL or DNEL.

TITANIUM DIOXIDE ULTRA FINE – SAFETY DATA SHEET

PERSONAL PROTECTION

Respiratory protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection: Use gloves approved to relevant standards.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Protective measures: Wear suitable protective equipment.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Smoking, eating and drinking should be prohibited in the application area. Wash face, hands and any exposed skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred. Wash hands before breaks and at the end of workday.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White powder	Vapour pressure	N/A
Odour	None	Vapour density	N/A
Odour threshold	N/A	Relative density	ca. 3.9 g/cm ³ (20°C)
pH	6.5 – 8.5	Solubility	< 0.01 g/L in water (20°C) Practically insoluble in other solvents
Melting/freezing point	> 1800°C	Partition coefficient	N/A
Boiling point & range	N/A	Auto-ignition temperature	The product itself does not burn
Flash point	N/A	Decomposition temperature	N/A
Flammability	Not expected to form explosive mixtures	Kinematic viscosity	N/A
Upper/lower flammability	N/A	Particle characteristics	N/A
Oxidizing properties	Not classified as oxidizing	Molecular weight	Calculation method 79.88 g/mol

SECTION 10 STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: Stable under recommended storage conditions. No hazards to be specially mentioned.

Conditions to avoid: No data available.

Incompatible materials: None known.

Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral toxicity:

LD50 (Rat, female): > 5,000 mg/kg (OECD Test Guideline 425)

Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity:

LC50 (Rat, male): > 6.82 mg/l

Test atmosphere: dust/mist; 4 h

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity:

LD50 Dermal (Rabbit): > 10,000 mg/kg

Skin corrosion/irritation

Species: Rabbit

Assessment: No skin irritation

Result: Normally reversible injuries (OECD Test Guideline 404)

Serious eye damage/eye irritation

Species: Rabbit

Assessment: No eye irritation

Result: Normally reversible injuries (OECD Test Guideline 405)

TITANIUM DIOXIDE ULTRA FINE – SAFETY DATA SHEET
Respiratory or skin sensitization

Test type: Local lymph node assay (LLNA)
 Routes of exposure: Skin
 Species: Mouse
 Assessment: Does not cause skin sensitization.
 Result: Does not cause skin sensitization (OECD Test Guideline 429)
 Routes of exposure: Skin
 Species: Guinea pig
 Assessment: Does not cause skin sensitization.
 Result: Does not cause skin sensitization (OECD Test Guideline 406).

Germ cell mutagenicity
Genotoxicity in vitro:

Test type: Ames test
 Concentration: 100 - 200 µg/plate
 Metabolic activation: with and without metabolic activation
 Result: negative (OECD Test Guideline 471)
 Test type: In vitro mammalian cell gene mutation test
 Concentration: 31 - 500 µg/L
 Metabolic activation: with and without metabolic activation
 Result: negative (OECD Test Guideline 476)
 Test type: Chromosome aberration test in vitro
 Concentration: 125 - 2500 µg/L
 Metabolic activation: with and without metabolic activation
 Result: negative (OECD Test Guideline 473)

Genotoxicity in vivo:

Test type: Micronucleus test
 Species: Mouse (males)
 Application Route: Inhalation; 5 consecutive days
 Dose: 0.8, 7.2, and 28.5 mg/m³
 Result: Negative (OECD Test Guideline 474)
 Test type: Micronucleus test
 Species: Rat (male and female)
 Application Route: Oral; once
 Dose: 500, 1000, and 2000 mg/kg bw
 Result: Negative (OECD Test Guideline 474)
 Assessment: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.

Carcinogenicity

Species: Rat, male and female
 Application route: Oral; 103 weeks, 7 days/week
 Dose: 0, 25000, 50000 ppm
 NOAEL: > 50.000 ppm
 Remarks: Titanium Dioxide: based on the results of chronic inhalation studies (with positive results only in a single species - rat), IARC has concluded that: "There is inadequate evidence in humans for the carcinogenicity of titanium dioxide." but that: "There is sufficient evidence in experimental animals for carcinogenicity of titanium dioxide". IARC's overall evaluation was that "titanium dioxide is possibly carcinogenic to humans (Group 2B)." All of the available animal carcinogenicity and mechanistic data have been examined together with workplace epidemiology data for titanium dioxide and concludes that the weight of scientific evidence indicates that there is no causative link between titanium dioxide exposure and cancer risk in humans and that workplace exposures in compliance with applicable exposure standards will not result in lung cancer or chronic respiratory diseases in humans.
 Assessment: Not classifiable as a human carcinogen.
 IARC – Group 2B: Possibly carcinogenic to humans
 OSHA – No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
 NTP – No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Effects on fetal development
 Species: Rat, male and female
 Application Route: Oral; 20 h, 7 days/week
 Dose: 100, 300, and 1000 mg/kg bw
 General Toxicity Maternal: NOAEL: 1,000 mg/kg body weight
 Developmental Toxicity: NOAEL: 1,000 mg/kg body weight
 Result: No adverse effects (OECD Test Guideline 414)
 Assessment: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Repeated dose toxicity

Species: Rat, male and female, 3500 mg/m³
 Application Route: Ingestion; 2 h, 5 d
 Test atmosphere: dust/mist
 Method: Chronic toxicity
 Species: Rat, male and female, 10 - 50 mg/m³
 Application Route: Inhalation; 2 h, 6 hours/day, 5 days/week
 Method: Chronic toxicity
 Assessment: No adverse effect has been observed in chronic toxicity tests.

SECTION 12 ECOLOGICAL INFORMATION
Ecotoxicity
Toxicity to fish:

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 10,000 mg/L

Exposure time: 96 h

Test Type: semi-static test

Test substance: Sea water

Method: OECD Test Guideline 203

Plant toxicity:

NOEC: 100,000 mg/kg

Exposure time: 480 h

Sediment toxicity:

(Gammarus pulex (Amphipod)): > 100000 mg/kgsedimentdw

Study: Acute

Test Type: semi-static test

Water: Fresh water

Exposure duration: 28 h

Method: ASTM Method, other

(Gammarus pulex (Amphipod)): 100000 mg/kgsedimentdw

Study: Chronic

Test Type: semi-static test

Water: Fresh water

Exposure duration: 28 h

Method: ASTM Method, other

(Gammarus pulex (Amphipod)): 14989 mg/kgsedimentdw

Study: Acute

Test Type: semi-static test

Water: Sea water

Exposure duration: 10 h

Toxicity to terrestrial organisms:

NOEC: 10,000 mg/kg

Exposure time: 672 d

Biodegradability

Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation

Species: Oncorhynchus mykiss (rainbow trout)

Bioconcentration factor (BCF): 19 - 352

Exposure time: 14 d

Test substance: Fresh water

Method: semi-static test

Remarks: Does not bioaccumulate.

Mobility in soil

Remarks: No data available

SECTION 13 DISPOSAL CONSIDERATION

Waste from residues: The product should not be allowed to enter drains, water courses or the soil. This material and its container must be disposed of in a safe way. In accordance with local and national regulations. Dispose of wastes in an approved waste disposal facility. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14 TRANSPORT INFORMATION

Transport	ADR/RID	IMDG	IATA/ ICAO
UN number	Not dangerous goods	Not dangerous goods	Not dangerous goods
UN proper shipping name	Nil	Nil	Nil
Transport hazard class(es)	Nil	Nil	Nil
Packing group	Nil	Nil	Nil

TITANIUM DIOXIDE ULTRA FINE – SAFETY DATA SHEET**SECTION 15 REGULATORY INFORMATION**

HSNO approval number | N/A

California Prop. 65

WARNING: This product can expose you to chemicals including titanium dioxide, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov. Titanium dioxide (airborne, unbound particles of respirable size) is known to the state of California to cause cancer. This listing does not cover titanium dioxide when it remains bound within a product matrix.

WARNING: This product can expose you to chemicals including Arsenic (As), Cadmium (Cd), Chromium VI (Cr6+), Cobalt (Co), Lead (Pb), Mercury (Hg) and Nickel (Ni), present as trace impurities and not intentionally added, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm.

Inventories

AIIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECl (Thailand), TSCA (USA)

SECTION 16 OTHER INFORMATION

The information contained in this Safety Data Sheet is obtained from current and reliable sources. Pure Ingredients provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This Safety Data Sheet summarises our best current knowledge of the health and safety hazard information of the product but does not claim to be all inclusive. This document is intended only as a guide to the appropriate handling of this material.

Reference: supplier's SDS.

Version: 00 Revision Date: 09/01/2019. New PIL.

Version: 01 Revision Date: 21/02/2024. PI – SA037 31032023

Pure Ingredients