SAFETY DATA SHEET

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

1.1 PRODUCT IDENTIFIERS

Trade Name: TITANIUM DIOXIDE
Stock Number: TiO2-1xx series
Brand: GNM

REACH
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.

CAS: 1317-70-0

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified Uses: Scientific Research and Development

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Distributor: GetNanoMaterials
www.getnanomaterials.com • contact@getnanomaterials.com
Oocap Inc. • PO Box 16666, Las Cruces NM 88004, USA • +1 (575) 323-1082
Oocap France SAS • 5 Avenue de l’Europe, 36-Cannat 13780, France • +33 (0) 4 77 19 84 44
GetNanoMaterials is a trademark of Oocap Inc.

Telephone: +1 (575) 323-1082
+33 (0) 77 19 84 44
E-mail address: CONTACT@GETNANOMATERIALS.COM

1.4 EMERGENCY TELEPHONE NUMBER

Emergency Phone: +1 (575) 479-7479
+33 (0)1 45 42 59 59

SECTION 2 – HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification according to Regulation 1272/2008/EC: Not a hazardous substance or mixture.
Classification according to Directive 67/548/EEC or Directive 1999/45/EC: This substance is not classified as dangerous.

Information concerning particular hazards for human and environment: No information known.
Other hazards that do not result in classification: No information known.

2.2 LABEL ELEMENTS

Labelling according to Regulation 1272/2008/EC: The product does not need to be labelled in accordance with EC directives or respective national laws.
Labelling according to Directive 67/548/EEC or 1999/45/EC as amended: The product does not need to be labelled.

2.3 OTHER HAZARDS

None.
Results of the PBT and vPvB assessment
PBT: Not applicable.
SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

3.1 SUBSTANCE

Chemical Name  
Titanium Dioxide

Synonyms  
Titanium Oxide, Titania

Chemical Formula  
TiO2

Molecular Weight  
79.87 g/mol

CAS  
1317-70-0

EC  
215-280-1

Components  
No components need to be disclosed according to the applicable regulations.

3.2 MIXTURE

Ingredient Name  
Not applicable.

CAS  
Not applicable.

Chemical Formula  
Not applicable.

SECTION 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.

After inhalation  
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

After skin contact  
Wash off with soap and plenty of water.

After eye contact  
Flush eyes with water as a precaution.

After swallowing  
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

The most important known symptoms and effects are described in Section 2.2 and Section 11.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No data available.

SECTION 5 – FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Suitable extinguishing agents  
Product is not flammable. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Titanium, Titanium Oxides.

5.3 ADVICE FOR FIREFIGHTERS

Protective equipment  
Wear self-contained breathing apparatus for firefighting if necessary.

Special firefighting procedures  
No special procedures required.

5.4 FURTHER INFORMATION

No data available.

SECTION 6 – ACCIDENTAL RELEASE MEASURES
6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES
Avoid dust formation. Avoid breathing vapors, mist or gas.

6.2 ENVIRONMENTAL PRECAUTIONS
No special environmental precautions required.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP
Sweep up and shovel. Keep in suitable, closed containers for disposal.

Prevention of secondary hazards
No special measures required.

6.4 REFERENCE TO OTHER SECTIONS
See Section 13 for information on disposal.

SECTION 7 – HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING
Provide appropriate exhaust ventilation at places where dust is formed.

Information about protection against explosion and fires
The product is not flammable.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
Requirements to be met by storerooms and containers
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Information about storage in one common storage facility
No special requirements.

Further information about storage conditions
No special requirements.

7.3 SPECIFIC END USES
A part from the uses mentioned in Section 1.2 no other specific uses are stipulated.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems
No special requirements.

8.1 CONTROL PARAMETERS

Components with critical values that require monitoring at the workplace
Contains no substances with occupational exposure limit values.

Additional information
No data.

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

General protective and hygienic measures
The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Maintain an ergonomically appropriate working environment.

Breathing equipment and respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under...
appropriate government standards such as NIOSH (US) or CEN (EU).

**Skin 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Protection of hands**
See Skin protection in Section 8.2.

**Material of gloves**
No data.

**Penetration time of glove material (in minutes)**
No data.

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Body protection**
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Ventilation**
No data.

**Control of environmental exposure**
No special environmental precautions required.

---

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Powder</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>1825 °C</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Self-inflammability</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Density at 20 °C</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>3.9 g/ml at 25 °C</td>
</tr>
<tr>
<td><strong>Solubility in Water</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not auto-flammable</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Oxidizing properties</strong></td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
<tr>
<td><strong>Organic solvents content</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Solids content</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

### 9.2 OTHER SAFETY INFORMATION

No further information available.
SECTION 10 – STABILITY AND REACTIVITY

10.1 REACTIVITY
No information known.

10.2 CHEMICAL STABILITY
Stability Stable under recommended storage conditions.
Thermal decomposition No information known.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS
No information known.

10.4 CONDITIONS TO AVOID
No further information available.

10.5 INCOMPATIBLE MATERIALS
Strong oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS
No information known.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

| Acute toxicity | LD50 Oral rat female | 5,000 mg/kg |
| Acute toxicity | LC50 Inhalation rat male | 4h 6.82 mg/l |
| Skin irritation or corrosion | Skin rabbit Result no skin irritation OECD Test Guideline 404 |
| Skin irritation or corrosion | Eyes rabbit Result no eye irritation OECD Test Guideline 405 |
| Respiratory or skin sensitization | No effects known. |
| Germ cell mutagenicity | No data. |
| Carcinogenicity | This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC 2b – Group 2B Possibly carcinogenic to humans (Anatase (TiO2)) |
| Reproductive toxicity | No data. |
| Specific target organ system toxicity – repeated exposure | No effects known. |
| Specific target organ system toxicity – single exposure | No effects known. |
| Ingestion hazard | No effects known. |
| Inhalation hazard | No data available. |
| Aspiration hazard | No data available. |
| Subacute to chronic toxicity | No effects known. |
| RTECS | BV655000 |
| Additional toxicological information | To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. |

SECTION 12 – ECOLOGICAL INFORMATION
12.1 TOXICITY

Aquatic toxicity  No further relevant information available.

12.2 PERSISTENCE AND DEGRADABILITY

No further relevant information available.

12.3 BIOACCUMULATIVE POTENTIAL

No further relevant information available.

12.4 MOBILITY IN SOIL

No further relevant information available.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT

PBT  Not required.

vPvB  Not required.

12.6 OTHER ADVERSE EFFECTS

No further relevant information available.

12.7 ADDITIONAL INFORMATION

No further relevant information available.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Product  Offer surplus and non-recyclable solutions to a licensed disposal company.

Uncleaned packaging  Dispose of as unused product.

SECTION 14 – TRANSPORT INFORMATION

14.1 UN NUMBER

ADR/RID  Not applicable.

IMDG  Not applicable.

IATA  Not applicable.

14.2 UN PROPER SHIPPING NAME

ADR/RID  Not dangerous goods.

IMDG  Not dangerous goods.

IATA  Not dangerous goods.

14.3 TRANSPORT HAZARD CLASSES

ADR/RID  Not applicable.

IMDG  Not applicable.

IATA  Not applicable.

14.4 PACKAGING GROUP

ADR/RID  Not applicable.

IMDG  Not applicable.

IATA  Not applicable.

14.5 ENVIRONMENTAL HAZARDS

ADR/RID  None.

IMDG  None.
Marine Pollutant
IATA: None.

14.6 SPECIAL PRECAUTIONS FOR USERS
Not applicable.

14.7 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE
Not applicable.

14.8 UN “MODEL REGULATION”
Not applicable.

SECTION 15 – REGULATORY INFORMATION
This safety data sheet complies with the requirements of Regulation 1907/2006/EC.

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE
No data available.

15.2 CHEMICAL SAFETY ASSESSMENT
For this product a chemical safety assessment was not carried out.

SECTION 16 – OTHER INFORMATION
Full text of H-statements referred to under Sections 2 and 3.
Not applicable.

Full text of R-phrases referred to under Sections 2 and 3.
Not applicable.

Further information
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall GetNanoMaterials.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if GetNanoMaterials.com has been advised of the possibility of such damages.

Abbreviations and acronyms
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the international carriage of Dangerous goods by Road)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EPA: Environmental Protection Agency (USA)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Code for Dangerous Goods
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NTP: National Toxicology Program (USA)
OSHA: Occupational Safety and Health Administration (USA)
RID: Règlement International concernant le transport des marchandises Dangereuses par chemin de fer (Regulations concerning the International carriage of Dangerous goods by rail)
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
vPvB  
very Persistent and very Bioaccumulative