MATERIAL SAFETY DATA SHEET
Titanium dioxide

Version 1.1

1. Identification of Substance, Preparation

Product Reference: 169
Product Name: Titanium dioxide
Chemical Characterisation: Pigment White 6 - C.I. 77891, contains TiO$_2$
Emergency Phone Number: Myrkytystietokeskus (09) 471 977 or (09) 4711 or Saippuapaja 041 7042681

2. Composition Information on Ingredients

Definition / Botanical Origin: Pigment White 6 - C.I. 77891, contains TiO$_2$
CAS No: 13463-67-7
EINECS: 2366755
INCI Name: C.I. 77891

3. Hazards Identification

Not classified as dangerous. Should be treated as a nuisance dust. No adverse environmental effects are known to result from the use of titanium dioxide pigments. They are insoluble and in the environment are practically inert materials.

4. First Aid Measures

Inhalation Treatment: Remove from exposure site to fresh air. Keep at rest. Obtain medical attention.

Eye Exposure Treatment: Rinse immediately with plenty of water for at least 15 mins, holding eyelids open. Contact a doctor if symptoms persist.

Skin Contact Treatment: Remove contaminated clothes. Wash thoroughly with soap & water, flush with plenty of water. If irritation persists, seek medical advice.

Ingestion Treatment: Rinse mouth and then drink plenty of water. Seek medical advice if large amounts are involved, drink copious amounts of water to induce vomiting.

Other: When assessing action take Risk & Safety Phrases into account (Section 15)

5. Fire Fighting Measures

Extinguishing Media
Recommended: Use Water Mist, CO2, Dry Powder or Foam type Extinguishers, spraying extinguishing media to base of flames. Do not use direct water jet on burning material.

Special Measures: If involved in a fire, sulphur dioxide gas will be released. Avoid inhalation. Keep away from sources of ignition. Do not smoke. Wear positive pressure self-contained breathing apparatus & protective clothing. Extinguishing Procedures: Closed containers may build up
pressure when exposed to heat and should be cooled with water spray.

6. Accidental Release Measures

Personal precautions: Avoid inhalation & direct contact with skin & eyes. Use individual protective equipment (safety glasses, waterproof-boots, suitable protective clothing) in case of major spillages.

Environmental precautions: Keep away from drains, soils, surface & groundwater. In case of major discharge, flush with copious amounts of water to dilute any acid conditions that may prevail.

Cleaning up methods for spillages: Remove all potential ignition sources. Avoid contact with acids. Vacuum up and wash spill site. Observe state, federal & local disposal regulations.

7. Handling and Storage

Precautions in handling: Apply good manufacturing practice & industrial hygiene practices, ensuring proper ventilation. Observe good personal hygiene, and do not eat, drink or smoke whilst handling.

Storage conditions: Store in closed original container, at room temperature (15-25 degC) & protect from sunlight and moisture.

Fire protection: No special hazards. Titanium dioxide pigments do not burn.

8. Exposure Controls / Personal Protection

Respiratory protection: Avoid breathing dust. Apply local ventilation where possible.
Ventilation: Ensure good ventilation of working area.
Hand protection: Avoid all skin contact. Use chemically resistant gloves if required.
Eye protection: Wear safety glasses.
Work/Hygiene practices: Dry, fine powders can remove the skin’s natural oils, leaving it cracked and dry and open to infection. Wash hands with soap & water after handling. Use skin moisturisers.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>White powder</td>
</tr>
<tr>
<td>Odour:</td>
<td>Essentially odourless</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Density:</td>
<td>3.9g/cm³ approx</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Stability: Excellent
Decomposition: No hazardous decomposition products or hazardous exothermic reaction.

11. Toxicological Information

Non toxic
After skin contact: Irritation not expected
After eye contact: Irritation possible through mechanical action of dust particles.
After inhalation: May cause discomfort to respiratory tract

12. Ecological Information

Biodegradability: Not biodegradable. Insoluble. Can be removed by filtration or sedimentation.
Precautions: Prevent surface contamination of soil, ground & surface water.

13. Disposal Considerations

Dispose of according to local regulations
Avoid disposing into drainage systems and into the environment

14. Transport Information

Road (ADR/RID): Not applicable
Air (IATA): Not applicable
Sea (IMDG): Not applicable
CHIP: See section 15


Hazards: Not applicable
Symbols: Not applicable
Risk Phrases: Not applicable
Safety Phrases: Not applicable

Dust: Long term total dust: 10 mg.m⁻³ - 8 hr TWA
Respirable dust: 4 mg/m⁻³ - 8 hr TWA

16. Other Information

16.1. Packaging Type Suitability
Glass: Yes
Aluminium: Yes
HPPE: Yes
F/HDPE: Yes
Other plastic: Yes

16.2. Shelf Life
When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months.

16.3. QC Requirements
In-line with general product specification. Always satisfy suitability for specific application.
The data provided in this material safety data sheet is meant to represent typical data/analysis for this product and is correct to the best of our knowledge. The data was obtained from current and reliable sources, but is supplied without warranty, expressed or implied, regarding its’ correctness or accuracy. It is the user's responsibility to determine safe conditions for the use of this product, and to assume liability for loss, injury, damage or expense arising from improper use of this product. The information provided does not constitute a contract to supply to any specification, or for any given application, and buyers should seek to verify their requirements and product use.