## 1 Chemical product identification and information about manufacturer

### 1.1 Substance identification

<table>
<thead>
<tr>
<th>Technical name</th>
<th>Titanium Dioxide pigmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade name</td>
<td>Titanium Dioxide pigmental, grades</td>
</tr>
<tr>
<td></td>
<td>SumTITAN R -111, SumTITAN R-202,</td>
</tr>
<tr>
<td></td>
<td>SumTITAN R -203, SumTITAN R-204,</td>
</tr>
<tr>
<td></td>
<td>SumTITAN R-206, SumTITAN R-208</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EINECS name</th>
<th>Titanium dioxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>IUPAC name</td>
<td>Titanium (IV)oxide</td>
</tr>
<tr>
<td>CAS №</td>
<td>236-675-5</td>
</tr>
<tr>
<td>RTECS</td>
<td>XR 2275000</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>O2Ti, TiO₂</td>
</tr>
<tr>
<td>Reference number as per Regulation(EC) № 1907/2006 (REACH)</td>
<td>01-2119489379-17-0029</td>
</tr>
</tbody>
</table>

### 1.2 Intended use of the substance

Pigment.

- coatings of various types, including architectural, industrial and maintenance coatings in water-based and organic soluble systems, for interior and exterior coatings;
- paper of various types;
- food packaging;
- sealants, wall coatings, plastics, masterbatches;
- rubber, tyres, rubber items;
- plaster and cement mixtures;
- pharmaceutical and cosmetic preparations (grade R -111).

**Grades R-202, R -203, R-204, R-206, R-208 are not recommended for:**

- medical and clinical applications;
- products, intended for direct contact with skin.

### 1.3 Company/manufacturer identification

**Manufacturer**

Public Joint-Stock Company
SUMYKHIMPROM
Kharkivska str., Sumy, Ukraine, 40012

Chairman of the Board First Deputy – Manufacturing Director Mr. V.M.Volkov

e-mail: stand@sumykhimprom.org.ua

**Manufacturer’s Special Representative for registration in accordance with Regulation (EC) № 1907/2006 (REACH)**

OSTHEM GERMANY GmbH
Hamburg, Erdmann str. 10,22765 Germany

E-mail: ebinal@afkem.com and nasdala@afkem.com

Tel. /Fax: +49 40 5300 300/ +49 40 5300 30 33

### 1.4 Emergency telephone for handling the substance

If the emergency medical aid is necessary, turn to your local medical establishments

+38(0542) 683-550, +38(0542) 674-260 – 24 hours
2 Hazard (hazards) identification

Avoid direct contact with the product, prevent dust formation, use individual protection measures to protect respiratory organs, do not take meals and do not smoke at the workplace, keep personal hygiene measures. Working clothes should be kept separately from clean personal clothes, take shower after work. The personnel should be subjected to preventive and periodical medical examination. Production premises should be equipped with running cold drinking water supply, ventilation, sanitary and personal service rooms with hot water supply. The production premises should be equipped with first-aid kit, holding the medicines for first aid to the injured persons.

The given product is not classified as dangerous one as per Directives 67/548/EEC and 1999/45/EC. Is not listed in Annex I to Council Regulation №(EC) 304/2003 or in priority list (as indicated in Directive (EEC) № 793/93 on evaluation and risks management as per the available substances).

3 Composition (data on components)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>% by weight</th>
<th>EINECS№</th>
<th>CAS №</th>
<th>Substance hazard classification/marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium (IV)oxide</td>
<td>90-98</td>
<td>236-675-5</td>
<td>13463-67-7</td>
<td>-</td>
</tr>
<tr>
<td>aluminium hydroxide</td>
<td>1-2</td>
<td>244-492-7</td>
<td>21645-51-2</td>
<td>Xi; R36</td>
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<tr>
<td>silicon oxide</td>
<td>0-1</td>
<td>231-545-4</td>
<td>7631-86-9</td>
<td>Xi; R36/37</td>
</tr>
<tr>
<td>amorphous silica</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

3 First aid measures

**General measures:** rest, warm, comfortable body position, access of fresh air, unrestricted respiration conditions.

**In the event of ingestion:** rinse the mouth thoroughly. Allow to drink plenty of water, take activated carbon, purgative. Turn for medical aid.

**In the event of ingress in eyes:** rinse with running tap water thoroughly till the irritation disappears.

**In the event of contact with skin:** take off and dispose of contaminated cloths, shoes, ammunition. Rinse with running tap water till the product complete removal.

**In the event of inhalation:** remove subject to fresh air, rinse nasopharynx with drinking water.

5. Fire and explosion safety measures and means

**Fire and explosion safety:** fire and explosion safe, does not burn and does not maintain burning.

**Fire fighting measures:** adequate to the type of combustive substances, available in burning area.

**Dangerous products of thermal destruction:** none.

**Special fire preventing safety measures:** none.
6 Accidents and emergency situations, and their consequences, prevention and liquidation means
Avoid dust formation. Apply respiratory organs, eyes and skin individual protection measures. Premises mechanical ventilation, utilization of dust and gas purifying equipment, equipment in pressurized version. Prevent dust dispersal into environment. Prevent the product ingress into surface and soil waters. In the event of casual substance discharge: collect in dry manner into container, equipped with cover and marking, avoid dust formation. Contaminated surface should be washed with water with detergents.

7 Chemical products storage rules and handling when loading/unloading
Avoid aerosol formation when handling. Apply respiratory organs, eyes and skin individual protection means. Containers with substance should be tightly closed and labeled. Protect from moisture. Store in original manufacturer’s containers in closed warehouses, protected from atmospheric precipitations and soil waters, and from the goods contamination. Prevent the product ingress into surface and soil waters. Store in locked warehouses.

8 Dangerous impact control measures and individual protection means
8.1 Parameters, subjected to mandatory control:
Air of working zone:
TLV (Threshold Limit Value) titanium dioxide pigment dust - 10 mg/m³, hazard class 4,
TLV sulphuric acid vapour – 1 mg/m³, hazard class 2,
TLV sulphurous anhydride – 10 mg/m³, hazard class 3.
Atmospheric air:
Approximately Safe Level of Impact (ASLLIAᵥᵥ =0,5mg/m³, hazard class not rated.
Water in water objects of economic and drinking, community and household assignments
TLVᵥᵥ=0,1mg/l (in terms of titanium), hazard class –III. Limiting Index of Harmfulness (LIH) - the general sanitary one.
8.2 Methods of determination (principle, sensitivity, NTD per each method)
Atmospheric air of inhabited areas: x-ray fluorescence method with semiconductor detector (in terms of titanium). In book: Guidelines to control atmosphere pollution RD 52.04.186-89.
Air in working zone:
Water in water objects of economic and drinking, community and household assignments
Skin integument: the approved measuring methods are not found.
Food products: the approved measuring methods are not found.
8.3 Information about individual protection measures for personnel:
Respiratory organs protection
In product manufacture apply anti-dust respirator, type U-2K, «Rostok» or other masks of disposal or short-term action, regulated by norm NF EN 149 2001.
**Protective cloths, shoes etc.**
In product manufacture apply protective suit, protective helmet (in accordance with typical allowance norms or regulated by European norm EN 397), protective shoes – yufy shoes or regulated by EN345 and EN347), protective gloves – rubber gloves or in accordance with EN374-3, protective goggles (in accordance with typical allowance norms or as per CE EN 166).

9 Physical and chemical properties
**Physical state:** white powder. The product is not hygroscopic, not caked during storage.
**Odor:** odorless
**Melting point:** 1640°C (with decomposition).
**Boiling temperature:** is not achieved. As per alternative information: 2500 °C -3000°C
**Sparkling temperature, ignition temperature, self ignition temperature**
Incombustible
**Vapour pressure:** does not form vapour in standard conditions.
**Density:** 4.26 g/cm³ (rutile).
**pH of water suspension:** 6,5-8,0 (1:10 suspension in water).

**Solubility**
Non-soluble in water. Solubility in other solvents: non-soluble in organic solvents, in diluted mineral salts (except hydrofluoric acid) or diluted alkali solutions. Slowly soluble in concentrated sulphuric acid, concentrated alkali solutions, saturated KHCO₃ solution.

**Distribution factor in «octanol-water» system:** no information found.

10 Stability and reactivity
The substance is thermally and chemically stable.

**Reactivity:** the substance is amphichroic (possesses the properties of too weak acid and weak alkali). Recovers, reacts with halogen, interacts with ammonia and hydrogen peroxide (H₂O₂), forming orthotitanic acid H₂TiO₄ (yellow color). If heated with ammonium, forms TiN. In the event of fusion or caking with oxides or metals carbonates, forms titanates and double oxides. With hydrogen, carbon, active metals (magnesium, calcium, sodium) TiO₂, if heated, is regenerated to low molecular weight oxides. With chlorine, when heated in presence of reducers (carbon) forms TiCl₄ tetrachloride. Is not polymerized.

**Incompatible:** with magnesium, lithium, zinc, calcium, potassium, sodium, strong acids and alkali; potassium perchlorate and aluminium powder simultaneously.

**Substances, contact with which may cause dangerous reaction:** none.

**Dangerous products of decomposition:** none.

11 Information about toxicity
**Acute toxicity indices**
DL₉₀ ≥10000mg/kg (perorally, rat). DL₅₀ ≥25000mg/kg (perorally, rats). DL₀ = 139-156mg/kg (intragastrically, rats) DL₀ = 250mg/kg (intravenous, rats) DL₀ = 20mg/kg (intronatracally, rats). DL₅₀ ≥10000mg/kg (cutaneously, hamster, rabbit) CL ≥2,29mg/kg (rats, 4 hours)

**IRRITATIVE ACTION**
Skin - weak, faces with sensitive skin may feel skin irritation in the event of lasting or repeated contact. Eyes - none. Respiratory tracts – yes.

**Skin-resorptive action:** may be absorbed via uninjured skin.
Sensibilizing action: not found.
Embryotoxic action: not found.
Gonadotoxic action: not found.
Teratogenic action: not found.
Mutagenic action: the substance is not mutagenous as per Ames test with and without metabolic activation system (S.typhimurium).
Carcinogenic action: conclusive but not sufficient for classification.

12 Information on environmental impact
12.1 Ecotoxicity
Acute toxicity for Daphnia magna: \( EC_{100} = 1000 \) mg/l (18 days). \( EC_{100} = 500 \) mg/l (30 days).
Acute toxicity for fish: \( LC_{50} \geq 1000 \) mg/l (Leuciscus idus, 48 hr., Phoxinus phoxinus, 30 days)
Toxic impact on algae: \( EC = 2.0 \) (Scenectesmus obliguus 96 hours)
Toxic impact on soil invertebrates: bacterial toxicity \( EC_0 > 5000 \) mg/l (Pseudomonas fluorescens, Escherichia coli, 24 hr.).

12.2 Mobility
Does not form toxic compounds in air or sewage water, in presence of other substances or \( \text{TiO}_2 \) factors. Is not transformed in environment.

12.3 Stability and dissociation potential
Stability in abiotic conditions (\( \tau_{1/2} > 30 \) days (extremely stable)
Biological degradation: < 10% (practically non-degradable)
Biological oxygen demand: non-oxidising.
Chemical oxygen demand: non-oxidising.

12.4 Bioaccumulation property
Cumulativeness: weak.

12.5 Stable bioaccumulative toxic (SBT) properties evaluation results:
The substance is not a bioaccumulative stable one.

12.6 Hygienic norms within environmental objects
Fishery farm ponds (FFP) water: \( TLV_f = 1 \) mg/l (in terms of \( \text{TiO}_2 \)) and 0.06 mg/l (in terms of Ti). Hazard class - IV, LIH- toxicological.
Soil: no norms rated.
Test methods (principle, sensitivity, NTD per method)
FFP water: atomic absorption spectroscopy and inductively coupled plasma method in terms if Ti are recommended.

12.6 Other negative effects
Substances, capable to evoke ozone layer deterioration – none.
Volatility - non volatile.
13 **Recommendations on wastes (residues) disposal**
The product is non-hazardous to be buried in economical or sanitary settlers. No hazardous wastes as per 2000/532/EC. Upon absence of possibility for recycling or utilizing, wastes and tare should be liquidated in accordance with national and local legal regulations.

14 **Information for transportation**
**Hints on transportation:** the product is transportable by all kinds of vehicles in accordance with transport regulations, active for the given kind of transportation. The cargo is not classified as dangerous one in accordance with international carriage regulation.
The marking «Prevent from moisturising» is mandatory.

15 **Information about national and international legislation**

| Information about legislation, regulating the chemical goods circulation | Temporal Procedure of State Sanitary and Hygienic Expertise, Regulation by Ukrainian Health Care Ministry dated 09.10.2000 № 247  
Law of Ukraine of 25.06.91 № 1264-XII «About Natural Environment Protection»  
Regulation (EC) №1907/2006 (REACH) |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>EC rules</td>
<td>The given product is not classified as a dangerous one as per Directives 67/548/EEC and 1999/45/EC</td>
</tr>
<tr>
<td>Safety symbols</td>
<td>-</td>
</tr>
<tr>
<td>Risk phrases (R –phrases)</td>
<td>-</td>
</tr>
<tr>
<td>Safety phrases (S –phrases)</td>
<td>-</td>
</tr>
<tr>
<td>Marking conditions</td>
<td>Marking with hazard warning is mandatory</td>
</tr>
<tr>
<td>Industrial utilisation</td>
<td>Keep the handling instructions to avoid risk for humans and environment</td>
</tr>
</tbody>
</table>
16 Additional information

16.1 The list of information sources
1. DSTU GOST 30333:2009 «Chemical Product Safety Data Sheet»
3. Material Safety Data Sheet № 7242.
4. GOST 9808-84 Titanium dioxide pigment. Technical specification.
5. Toxicological and Hygienic Passport for Titanium Dioxide pigment, developed by Committee for Hygienic Regulations, attached to Ukrainian Health care Ministry.

About goods general safety

About approximation of laws, sublegislative and administrative acts of member countries in terms of classification, packing and marking of dangerous substances
10. CHEMICAL SAFETY REPORT Registrant's Identity: Tioxide Europe Limited

16.2 Recommendations on training
The given document is targeted for personnel, dealing with the product carriage and utilization, with the purpose to learn the safety handling rules.

16.3 Restrictions in utilisation
Persons, subjected to the given document delivery, may undertake the independent estimation of the product appropriateness for their own needs. The user bares responsibility for appropriateness check and information integrity for his specific application sphere.

The manufacturer will be grateful for sending the information about the product utilization, to undertake the extended risks evaluation, at the address indicated on page 1.