1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Ti-Nanoxide HT/SC
- **Relevant identified uses of the substance or mixture and uses advised against**
  - **Application of the substance / the preparation**
    Suspension containing about 3% wt. of titanium dioxide (TiO2) anatase particles CAS 1317-70-0
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** SOLARONIX SA
    Rue de l'Ouretette 129, CH-1170 Aubonne, Switzerland
    info@solaronix.com
    T +41 21 821 22 80
    www.solaronix.com
    F +41 21 821 22 89
    info@solaronix.com
  - **Emergency telephone number:** Swiss Toxicological Information Center: +41 44 251 51 51

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
  - GHS02 flame
    Flam. Liq. 3  H226  Flammable liquid and vapour.
  - GHS05 corrosion
    Eye Dam. 1  H318  Causes serious eye damage.
  - GHS07
    Skin Irrit. 2  H315  Causes skin irritation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - Xi; Irritant
    R36/38:  Irritating to eyes and skin.
  - R10:  Flammable.
- **Information concerning particular hazards for human and environment:**
The product has to be labelled in the latest valid version according to the calculation procedure of the "General Classification guideline for preparations of the EU".
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.

(Contd. on page 2)
Trade name: Ti-Nanoxide HT/SC

- Hazard pictograms

GHS02  GHS05

- Signal word Danger
- Hazard statements
  H226 Flammable liquid and vapour.
  H315 Causes skin irritation.
  H318 Causes serious eye damage.
- Precautionary statements
  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  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.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description:
  Suspension containing about 3% wt. of titanium dioxide (TiO2) anatase particles CAS 1317-70-0

- Dangerous components:

<table>
<thead>
<tr>
<th>CAS: 64-17-5</th>
<th>ethanol</th>
<th>25-50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-578-6</td>
<td>F R11</td>
<td>Flm. Liq. 2, H225</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 78989-43-2</th>
<th>Red fuming nitric acid</th>
<th>2.5-10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 241-138-0</td>
<td>C R35; O R8</td>
<td>Ox. Liq. 2, H272; Skin Corr. 1A, H314</td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed risk phrases, refer to section 16.

4 First aid measures

- Description of first aid measures
- After excessive inhalation:
  In case of unconsciousness place patient in a stable laying down side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult a doctor.
Trade name: Ti-Nanoxide HT/SC

5 Firefighting measures

- Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Reference to other sections: See Section 7 for information on safe handling. See Section 8 for information on personal protective equipment. See Section 13 for disposal information.

7 Handling and storage

- Handling: No special precautions are necessary if used correctly.
- Information about fire - and explosion protection:
  - Keep ignition sources away - Do not smoke.
  - Protect against electrostatic charges.
- Conditions for safe storage, including any incompatibilities: No special requirements.
- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep container tightly sealed.
- Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see section 7.
Trade name: Ti-Nanoxide HT/SC

- Control parameters
  - Ingredients with limit values that require monitoring at the workplace:
    64-17-5 ethanol (25-50%)
    WEL (Great Britain) | Long-term value: 1920 mg/m³, 1000 ppm
  - Additional information:
    As a basis for the production of this document, the most current valid lists were used.

- Exposure controls
  - Personal protective equipment:
  - General protective and hygienic measures: Keep away from food, beverages and petfood. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.
  - Respiratory protection: Not required.
  - Protection of hands:
    Protective gloves
    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Gloves material:
    The selection of suitable gloves does not only depend on the material, but also on further marks of quality which may vary from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked before use.
  - Eye protection:
    Tightly sealed goggles

- 9 Physical and chemical properties
  - Information on basic physical and chemical properties
  - General Information
  - Appearance:
    Form: Liquid
    Colour: According to product specification
    Odour: Characteristic
    Odour threshold: Not determined.
  - pH-value: Not determined.
  - Change in condition
    Melting point/Melting range: Undetermined.
    Boiling point/Boiling range: 78°C
  - Flash point: 50°C
Trade name: Ti-Nanoxide HT/SC

· Flammability (solid, gaseous): Not applicable.
· Ignition temperature: 425°C
· Decomposition temperature: Not determined.
· Self-igniting: Product is not self-igniting.
· Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· Explosion limits:
  Lower: 3.5 Vol %
  Upper: 15.0 Vol %
· Vapour pressure at 20°C: 59 hPa
· Density: Not determined.
· Relative density: Not determined.
· Vapour density: Not determined.
· Evaporation rate: Not determined.
· Solubility in / Miscibility with water: Not miscible or difficult to mix.
· Segregation coefficient (n-octanol/water): Not determined.
· Viscosity:
  Dynamic: Not determined.
  Kinematic: Not determined.
· Other information: No further relevant information available.

10 Stability and reactivity
· Reactivity
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions: No dangerous reactions known.
· Conditions to avoid: No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information
· Information on toxicological effects
· Acute toxicity:
· Primary irritant effect:
  · On the skin: Irritant to skin and mucous membranes.
  · On the eye: Irritating effect.
· Sensitization: No sensitizing effects known.
· Additional toxicological information:
  The product shows the following hazards according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Trade name: Ti-Nanoxide HT/SC

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behaviour in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
    - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Land transport ADR/RID (cross-border):
  - ADR/RID class: 3 (FC) Flammable liquids.
  - Danger code (Kemler): 38
  - UN-Number: 2924
  - Packaging group: III
  - Hazard label: 3+8
  - UN proper shipping name: 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), NITRATING ACID MIXTURE)
  - Limited quantities (LQ): 5L
  - Transport category: 3

(Contd. on page 7)
Trade name: Ti-Nanoxide HT/SC

<table>
<thead>
<tr>
<th><strong>Tunnel restriction code</strong></th>
<th>D/E</th>
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<tbody>
<tr>
<td><strong>Maritime transport IMDG:</strong></td>
<td></td>
</tr>
<tr>
<td>· IMDG Class:</td>
<td>3</td>
</tr>
<tr>
<td>· UN Number:</td>
<td>2924</td>
</tr>
<tr>
<td>· Label</td>
<td>3+8</td>
</tr>
<tr>
<td>· Packaging group:</td>
<td>III</td>
</tr>
<tr>
<td>· EMS Number:</td>
<td>F-E-S-C</td>
</tr>
<tr>
<td>· Marine pollutant:</td>
<td>No</td>
</tr>
<tr>
<td>· Segregation groups</td>
<td>Acids</td>
</tr>
<tr>
<td>· Proper shipping name:</td>
<td>FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), NITRATING ACID MIXTURE)</td>
</tr>
</tbody>
</table>

**Air transport ICAO-TI and IATA-DGR:**

| · ICAO/IATA Class: | 3 |
| · UN/ID Number: | 2924 |
| · Label: | 3+8 |
| · Packaging group: | III |
| · Proper shipping name: | FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, NITRATING ACID MIXTURE) |

**UN "Model Regulation":** UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S., 3 (8), III

**Special precautions for user:** Warning: Flammable liquids.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.

### 15 Regulatory information

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Relevant phrases**

- **H225** Highly flammable liquid and vapour.
- **H272** May intensify fire; oxidiser.
- **H314** Causes severe skin burns and eye damage.
- **R11** Highly flammable.
- **R35** Causes severe burns.
- **R8** Contact with combustible material may cause fire.
Abbreviations and acronyms:
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
- ICAO: International Civil Aviation Organization
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals