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

· Product identifier
· Trade name: Zr-Nanoxide ZT/SP
· Relevant identified uses of the substance or mixture and uses advised against
  No further relevant information available.
· Application of the substance / the preparation: Preparation
· Details of the supplier of the safety data sheet
  Manufacturer/Supplier:
  SOLARONIX SA
  Rue de l'Ouriette 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:
  France (ORFILA 24h/24) - Tel : +33 (0)1 45 42 59 59
  Ireland - Tel : 00 353 1 8092568 - 00 353 1 8379964 (24h/24)
  EU Tel : 112

2 Hazards identification

· Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008:
  GHS07
  Skin Irrit. 2 H315 Causes skin irritation.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC: Not applicable.
· 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.
· Hazard pictograms

GHS07

· Signal word Warning
· Hazard statements
  H315 Causes skin irritation.
· Precautionary statements
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P264 Wash thoroughly after handling.

(Contd. on page 2)
Trade name: Zr-Nanoxide ZT/SP

(Contd. of page 1)

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture: consisting of the following components.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000-41-7 terpineol (isomers mixture)</td>
</tr>
<tr>
<td>10-25%</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: Supply fresh air; consult a doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult a doctor.
- Information for doctor:
- Most important symptoms and effects, both acute and delayed:
  No further relevant information available.
- Indication of any immediate medical attention and special treatment needed:
  No further relevant information available.

5 Firefighting measures

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

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- 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.

(Contd. on page 3)
Trade name: Zr-Nanoxide ZT/SP

See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling: No special precautions are necessary if used correctly.
  - Information about fire - and explosion protection: No special measures required.
- Conditions for safe storage, including any incompatibilities
- 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: None.
- 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.
- Control parameters

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1314-23-4 zirconium dioxide (50-100%)</td>
</tr>
<tr>
<td>WEL (Great Britain)</td>
</tr>
<tr>
<td>Short-term value: 10 mg/m³</td>
</tr>
<tr>
<td>Long-term value: 5 mg/m³</td>
</tr>
<tr>
<td>as Zr</td>
</tr>
<tr>
<td>MAK (Switzerland)</td>
</tr>
<tr>
<td>Long-term value: 5e mg/m³</td>
</tr>
<tr>
<td>als Zr berechnet</td>
</tr>
</tbody>
</table>

- 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: Wash hands before breaks and at the end of work.
  - Respiratory protection: Not required.
- Protection of hands:
  - 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: Goggles recommended during refilling
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: Undetermined.
  - Flash point: Not applicable.
  - Flammability (solid, gaseous): Not applicable.
  - Ignition temperature: Not applicable.
  - Decomposition temperature: Not determined.
  - Self-igniting: Product is not self-igniting.
  - Danger of explosion: Product does not present an explosion hazard.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Vapour pressure: Not determined.
  - 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.
  - Solvent content:
    - VOC (EC): 0.00 %
  - 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.
### Trade name: Zr-Nanoxide ZT/SP

- **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: No irritant effect.
      - On the eyes: No irritant effect.
    - **Sensitization**: No sensitizing effects known.

### 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 2 (German Regulation) (Self-assessment): hazardous for water

  Do not allow product to reach ground water, water course or sewage system.

  Danger to drinking water if even small quantities leak into the ground.

- **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

- **UN-Number**
- **ADR, ADN, IMDG, IATA**: Not classified as hazardous for transport

(contd. on page 6)
Trade name: Zr-Nanoxide ZT/SP

<table>
<thead>
<tr>
<th>(Contd. of page 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
</tr>
<tr>
<td>ADR, ADN, IMDG, IATA</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
</tr>
<tr>
<td>ADR, ADN, IMDG, IATA</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
</tr>
<tr>
<td>ADR, IMDG, IATA</td>
</tr>
<tr>
<td><strong>Environmental hazards:</strong></td>
</tr>
<tr>
<td>Marine pollutant:</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></td>
</tr>
<tr>
<td><strong>UN &quot;Model Regulation&quot;:</strong></td>
</tr>
</tbody>
</table>

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**
  - H315 Causes skin irritation.
  - R38 Irritating to skin.

- **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)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonized System of Classification and Labelling of Chemicals
  - VOC: Volatile Organic Compounds (USA, EU)