SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING.

1.1 Product identifier.
Product Name: TECNADIS HEATSHIELD Componente 1

1.2 Relevant identified uses of the mixture and uses advised against.
Nanoparticle-based coating with varied functionalities (water repellent, anti stain, rain repellent, anticorrosion...)
Industrial use.
Professional use

Uses advised against:
Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet.
Company: Tecnología Navarra de Nanoproductos S.L.
Address: Área Industrial Perguita, Calle A, nº1
City: 31210 Los Arcos
Province: Navarra
Telephone: +34 948 64 03 18
Fax: +34 948 64 03 19
E-mail: tecnan@tecnan-nanomat.es
Web: www.tecnan-nanomat.es

1.4 Emergency telephone number: +34 948 64 03 18 (Only available during office hours; Monday-Friday; 08:00-18:00)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the mixture.
In accordance with Regulation (EU) No 1272/2008:
Eye Irrit. 2 : Causes serious eye irritation.
Flam. Liq. 2 : Highly flammable liquid and vapour.
Skin Irrit. 2 : Causes skin irritation.

2.2 Label elements.
Labelling in accordance with Regulation (EU) No 1272/2008:

Pictograms:

![Pictogram 1](image1)
![Pictogram 2](image2)

Signal Word: Danger

H statements:
- H225: Highly flammable liquid and vapour.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.

P statements:
- P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233: Keep container tightly closed.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P321: Specific treatment (visit the doctor with this product Safety Data Sheet).
- P370+P378: In case of fire: Use ABC powder, CO2 or alcohol resistant foam to extinguish.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P501: Dispose of contents/container according to current, local/national legislation.
EUH statements:
EUH205 Contains epoxy constituents. May produce an allergic reaction.

2.3 Other hazards.
The product may have the following additional risks:
N.D.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.
Not Applicable.

3.2 Mixtures.
Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

<table>
<thead>
<tr>
<th>Identifiers</th>
<th>Name</th>
<th>Concentrate</th>
<th>(*)Classification - Regulation (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Classification</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>specific concentration limit</td>
</tr>
<tr>
<td>Index No: 603-002-00-5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CAS No: 64-17-5 |
EC No: 200-578-6 |
Registration No: 01-2119457610-43-XXXX |
| [1] ethanol, ethyl alcohol | 25 - 50 % | Flam. Liq. 2, H225 | - |
| Index No: 603-014-00-0 |
CAS No: 111-76-2 |
EC No: 203-905-0 |
Registration No: 01-2119475108-36-XXXX |
| [1] 2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether | 10 - 25 % | Acute Tox. 4 *, H312 - Acute Tox. 4 *, H332 - Acute Tox. 4 *, H302 - Eye Irrit. 2, H319 - Skin Irrit. 2, H315 | - |
| Index No: 603-117-00-0 |
CAS No: 67-63-0 |
EC No: 200-661-7 |
Registration No: 01-2119457558-25-XXXX |
| Index No: 607-195-00-7 |
CAS No: 108-65-6 |
EC No: 203-603-9 |
Registration No: 01-2119475791-29-XXXX |
| [1] 2-methoxy-1-methylethyl acetate | 10 - 25 % | Flam. Liq. 3, H226 | - |
| CAS No: 1344-28-1 |
EC No: 215-691-6 |
| aluminium oxide | 1 - 10 % | Eye Irrit. 2, H319 - Skin Irrit. 2, H315 - STOT SE 3, H335 | - |
| CAS No: 50926-11-9 |
EC No: 610-589-1 |
| Indium tin oxide | 1 - 10 % | Eye Irrit. 2, H319 - Skin Irrit. 2, H315 - STOT SE 3, H335 | - |
| Index No: 014-007-00-1 |
CAS No: 17980-47-1 |
EC No: 402-810-3 |
| triethoxyisobutylsilane | 1 - 10 % | Skin Irrit. 2, H315 | - |

-Continued on next page.-
SAFETY DATA SHEET
(in accordance with Regulation (EU) 2015/830)
TECNADIS HEATSHIELD Componente 1

Section 4: First Aid Measures.

IRRITANT PREPARATION. Its repeated or prolonged contact with the skin or mucous membranes can cause irritant symptoms such as reddening of the skin, blisters, or dermatitis. Some of the symptoms may not be immediate. They can cause allergic reactions on the skin.

4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Inhalation.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.

Eye contact.

If wearing contact lenses, remove them. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance.

Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.

Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed.

Irritant Product, repeated or prolonged contact with skin or mucous membranes can cause redness, blisters or dermatitis, inhalation of spray mist or particles in suspension may cause irritation of the respiratory tract, some symptoms may not be immediate. Can cause allergic reactions.

4.3 Indication of any immediate medical attention and special treatment needed.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Section 5: Firefighting Measures.

The product is Highly inflammable, it can cause or considerably worsen a fire, the necessary prevention measures should be taken and risks avoided. In case of fire, the following measures are recommended:

5.1 Extinguishing media.

Recommended extinguishing methods.

Extinguisher powder or CO₂. In case of more serious fires, also alcohol-resistant foam and water spray. Do not use a direct stream of water to extinguish.

5.2 Special hazards arising from the mixture.

Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and gloves.

*Continued on next page.*
SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.
Eliminate possible ignition points and ventilate the area. No smoking. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

6.2 Environmental precautions.
Prevent the contamination of drains, surface or subterranean waters, and the ground.

6.3 Methods and material for containment and cleaning up.
Pick up the spill with non-combustible absorbent materials (soil, sand, vermiculite, diatomite, etc.). Pour the product and the absorbent in an appropriate container. The contaminated area should be immediately cleaned with an appropriate decontaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

6.4 Reference to other sections.
For exposure control and individual protection measures, see section 8.
For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.
The fumes are heavier than air and can spread across the ground. They can form explosive mixtures with air. Prevent the creation of flammable or explosive fume concentrations in the air; prevent fume concentrations above work exposure limits. The product must only be used in areas where all unprotected flames and other ignition points have been eliminated. Electrical equipment has to be protected according to applicable standards.
The product can be electrostatically charged: always use earth grounds when transferring the product. Operators must use anti-static footwear and clothing, and floors must be conductors.
Keep the container tightly closed and isolated from heat sources, sparks, and fire. Do not use tools that can cause sparks. For personal protection, see section 8.
Follow legislation on occupational health and safety.
Keep the product in containers made of a material identical to the original.

7.2 Conditions for safe storage, including any incompatibilities.
Store according to local legislation. Observe indications on the label. Store the containers between 5 and 35°C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorised persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.
Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III):

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Lower-tier requirements</th>
<th>Upper-tier requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2</td>
<td>ENVIRONMENTAL HAZARDS - Hazardous to the Aquatic Environment in Category Chronic 2</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>P5c</td>
<td>FLAMMABLE LIQUIDS</td>
<td>5.000</td>
<td>50.000</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s).
None

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.
Work exposure limit for:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No.</th>
<th>Country</th>
<th>Limit value</th>
<th>ppm</th>
<th>mg/m³</th>
</tr>
</thead>
</table>

-Continued on next page.-
SAFETY DATA SHEET
(in accordance with Regulation (EU) 2015/830)

TECNADIS HEATSHIELD Componente 1

Version: 2
Revision date: 21/04/2017
Print date: 02/06/2017

Page 5 of 13

-Continued on next page.-
8.2 Exposure controls.

**Measures of a technical nature:**

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Soil</th>
<th>sediment (freshwater)</th>
<th>sediment (marine water)</th>
<th>sediment (intermittent releases)</th>
<th>PNEC STP</th>
<th>PNEC oral (Hazard for predators)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropanol, isopropyl alcohol, propan-2-ol</td>
<td>0,63 (mg/kg soil dw)</td>
<td>3,6 (mg/kg sediment dw)</td>
<td>140,9 (mg/L)</td>
<td>140,9 (mg/L)</td>
<td>140,9 (mg/L)</td>
<td>140,9 (mg/L)</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>0,63 (mg/kg soil dw)</td>
<td>3,65 (mg/kg soil dw)</td>
<td>100 (mg/L)</td>
<td>6,35 (mg/L)</td>
<td>100 (mg/L)</td>
<td>3,29 (mg/kg sediment dw)</td>
</tr>
</tbody>
</table>

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

- **Concentration:** 100 %
- **Uses:** Nanoparticle-based coating with varied functionalities (water repellent, anti stain, rain repellent, anticorrosion...)
  - Industrial use
  - Professional use

**Breathing protection:**

- **PPE:** Filter mask for protection against gases and particles.
- **Characteristics:** «CE» marking, category III. The mask must have a wide field of vision and an anatomically designed form in order to be sealed and watertight.
- **CEN standards:** EN 136, EN 140, EN 405
- **Maintenance:** Should not be stored in places exposed to high temperatures and damp environments before use. Special attention should be paid to the state of the inhalation and exhalation valves in the face adaptor.
- **Observations:** Read carefully the manufacturer’s instructions regarding the equipment’s use and maintenance. Attach the necessary filters to the equipment according to the specific nature of the risk (Particles and aerosols: P1-P2-P3, Gases and vapours: A-B-E-K-AX), changing them as advised by the manufacturer.
- **Filter Type needed:** A2

**Hand protection:**

- **PPE:** Protective gloves.
- **Characteristics:** «CE» marking, category II.
- **CEN standards:** EN 374-1, EN 374-2, EN 374-3, EN 420
- **Maintenance:** Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible.
- **Observations:** Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.
- **Material:** PVC (polyvinyl chloride)
- **Breakthrough time (min.):** > 480
- **Material thickness (mm):** 0,35

**Eye protection:**

- Continued on next page.
**SAFETY DATA SHEET**
(in accordance with Regulation (EU) 2015/830)

**TECNADIS HEATSHIELD Componente 1**

**Version:** 2  
**Revision date:** 21/04/2017  
**Print date:** 02/06/2017

| PPE: | Face shield. |
| Characteristics: | «CE» marking, category II. Face and eye protector against splashing liquid. |
| CEN standards: | EN 165, EN 166, EN 167, EN 168 |
| Maintenance: | Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer’s instructions. Make sure that mobile parts move smoothly. |
| Observations: | Face shields should offer a field of vision with a dimension in the central line of, at least, 150 mm vertically once attached to the frame. |

**Skin protection:**

| PPE: | Anti-static protective clothing. |
| Characteristics: | «CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements. |
| CEN standards: | EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5 |
| Maintenance: | In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer. |
| Observations: | The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use. |

| PPE: | Anti-static safety footwear. |
| Characteristics: | «CE» marking, category II. |
| CEN standards: | EN ISO 13287, EN ISO 20344, EN ISO 20346 |
| Maintenance: | The footwear should be checked regularly |
| Observations: | The level of comfort during use and acceptability are factors that are assessed very differently depending on the user. Therefore, it is advisable to try on different footwear models and, if possible, different widths. |

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.**

9.1 Information on basic physical and chemical properties.

- **Appearance:** Liquid
- **Colour:** Azulado
- **Odour:** N.A./N.A.
- **Odour threshold:** N.A./N.A.
- **pH:** N.A./N.A.
- **Melting point:** N.A./N.A.
- **Boiling Point:** 83 ºC
- **Flash point:** 12 ºC
- **Evaporation rate:** N.A./N.A.
- **Inflammability (solid, gas):** N.A./N.A.
- **Lower Explosive Limit:** 2 %
- **Upper Explosive Limit:** 12 %
- **Vapour pressure:** 43,2
- **Vapour density:** N.A./N.A.
- **Relative density:** 1,07 g/cm³
- **Solubility:** N.A./N.A.
- **Liposolubility:** N.A./N.A.
- **Hydrosolubility:** N.A./N.A.
- **Partition coefficient (n-octanol/water):** N.A./N.A.
- **Auto-ignition temperature:** N.A./N.A.
- **Decomposition temperature:** N.A./N.A.
- **Viscosity:** N.A./N.A.
- **Explosive properties:** N.A./N.A.
- **Oxidizing properties:** N.A./N.A.
- **N.A./N.A. = Not Available/Not Applicable due to the nature of the product**

9.2 Other information.

- **Pour point:** N.A./N.A.
- **Blink:** N.A./N.A.
- **Kinematic viscosity:** N.A./N.A.
- **N.A./N.A. = Not Available/Not Applicable due to the nature of the product**
SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.
The product does not present hazards by their reactivity.

10.2 Chemical stability.
Unstable in contact with:
- Acids.
- Bases.
- Oxidizing agents.

10.3 Possibility of hazardous reactions.
In certain conditions this may cause a polymerization reaction.

10.4 Conditions to avoid.
Avoid the following conditions:
- Heating.
- High temperature.
- Contact with incompatible materials.

10.5 Incompatible materials.
Avoid the following materials:
- Acids.
- Bases.
- Oxidizing agents.

10.6 Hazardous decomposition products.
Depending on conditions of use, can be generated the following products:
- CO\textsubscript{x} (carbon oxides).
- Organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION.

IRRITANT PREPARATION. Splatters in the eyes can cause irritation.
IRRITANT PREPARATION. Its repeated or prolonged contact with the skin or mucous membranes can cause irritant symptoms such as reddening of the skin, blisters, or dermatitis. Some of the symptoms may not be immediate. They can cause allergic reactions on the skin.

11.1 Information on toxicological effects.
Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.
Splatters in the eyes can cause irritation and reversible damage.

Toxicological information about the substances present in the composition.

<table>
<thead>
<tr>
<th>Name</th>
<th>Acute toxicity</th>
<th>Type</th>
<th>Test</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>isopropanol,isopropyl alcohol,propan-2-ol</td>
<td>LD50 Rat</td>
<td>Oral</td>
<td></td>
<td></td>
<td>5050 mg/kg bw [1]</td>
</tr>
<tr>
<td>CAS No: 67-63-0 EC No: 200-661-7</td>
<td></td>
<td>Dermal</td>
<td>LD50 Rabbit</td>
<td>12800 mg/kg bw [1]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>LC50 Rat</td>
<td>&gt;10000 ppm (6 h) [1]</td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>LD50 Rat</td>
<td>Oral</td>
<td></td>
<td></td>
<td>6190 mg/kg bw [1]</td>
</tr>
<tr>
<td></td>
<td>LD50 Rabbit</td>
<td>Dermal</td>
<td></td>
<td></td>
<td>&gt;5000 mg/kg bw [1]</td>
</tr>
</tbody>
</table>

[1] Gigiena i Sanitariya. For English translation, see HYSAAN, Vol. 43(1), Pg. 8, 1978
**SAFETY DATA SHEET**
(in accordance with Regulation (EU) 2015/830)

**TECNADIS HEATSHIELD Componente 1**

---

**CAS No:** 108-65-6  
**EC No:** 203-603-9  

### Inhalation

<table>
<thead>
<tr>
<th>LC0</th>
<th>Rat</th>
<th>&gt;4345 ppm (6 h) [1]</th>
</tr>
</thead>
</table>

- **a)** acute toxicity;  
  Not conclusive data for classification.
  
  Acute Toxicity Estimate (ATE):  
  Mixtures:  
  ATE (Dermal) = 7.333 mg/kg  
  ATE (Oral) = 3.333 mg/kg

- **b)** skin corrosion/irritation;  
  Product classified:  
  Skin irritant, Category 2: Causes skin irritation.

- **c)** serious eye damage/irritation;  
  Product classified:  
  Eye irritation, Category 2: Causes serious eye irritation.

- **d)** respiratory or skin sensitisation;  
  Not conclusive data for classification.

- **e)** germ cell mutagenicity;  
  Not conclusive data for classification.

- **f)** carcinogenicity;  
  Not conclusive data for classification.

- **g)** reproductive toxicity;  
  Not conclusive data for classification.

- **h)** STOT - single exposure;  
  Based on available data, the classification criteria are not met.

- **i)** STOT - repeated exposure;  
  Not conclusive data for classification.

- **j)** aspiration hazard;  
  Not conclusive data for classification.

---

**SECTION 12: ECOLOGICAL INFORMATION.**

### 12.1 Toxicity.

<table>
<thead>
<tr>
<th>Name</th>
<th>Ecotoxicity</th>
<th>Type</th>
<th>Test</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td>Fish</td>
<td>LC50</td>
<td>Fish</td>
<td>9640 mg/l (96 h) [1]</td>
<td></td>
</tr>
<tr>
<td>Aquatic invertebrates</td>
<td>LC50</td>
<td>Crustacean</td>
<td>1400 mg/l (48 h) [1]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic plants</td>
<td>Toxicity threshold</td>
<td>Scenedesmus quadricauda</td>
<td>1800 mg/L (7 d) [1]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---


---

-Continued on next page.-
**SAFETY DATA SHEET**

**(in accordance with Regulation (EU) 2015/830)**

**TECNADIS HEATSHIELD Componente 1**

**Version:** 2  
**Revision date:** 21/04/2017  
**Print date:** 02/06/2017

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>Fish</td>
<td>LC50 Oryzias latipes 100 mg/L (96 h) [1]</td>
</tr>
<tr>
<td></td>
<td>Aquatic invertebrates</td>
<td>EC50 Daphnia magna 407 mg/L (48 h) [1]</td>
</tr>
<tr>
<td></td>
<td>Aquatic plants</td>
<td>EC50 Selenastrum capricornutum (Pseudokirchnerella subcapitata) &gt;1000 mg/L (72 h) [1]</td>
</tr>
</tbody>
</table>

**12.2 Persistence and degradability.**  
No information is available about persistence and degradability of the product.

**12.3 Bioaccumulative potential.**  
Information about the bioaccumulation of the substances present.

<table>
<thead>
<tr>
<th>Name</th>
<th>Bioaccumulation</th>
<th>Log Pow</th>
<th>BCF</th>
<th>NOECs</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol, ethyl alcohol</td>
<td></td>
<td>-0.3</td>
<td>-</td>
<td>-</td>
<td>Very low</td>
</tr>
<tr>
<td>N. CAS: 64-17-5</td>
<td>EC No: 200-578-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td></td>
<td>0.8</td>
<td>-</td>
<td>-</td>
<td>Very low</td>
</tr>
<tr>
<td>N. CAS: 111-76-2</td>
<td>EC No: 203-905-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isopropanol, isopropyl alcohol, propan-2-ol</td>
<td></td>
<td>0.05</td>
<td>-</td>
<td>-</td>
<td>Very low</td>
</tr>
<tr>
<td>N. CAS: 67-63-0</td>
<td>EC No: 200-661-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**12.4 Mobility in soil.**  
No information is available about the mobility in soil.  
The product must not be allowed to go into sewers or waterways. Prevent penetration into the ground.

**12.5 Results of PBT and vPvB assessment.**  
No information is available about the results of PBT and vPvB assessment of the product.

**12.6 Other adverse effects.**  
No information is available about other adverse effects for the environment.

**SECTION 13 DISPOSAL CONSIDERATIONS.**

**13.1 Waste treatment methods.**  
Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.  

**SECTION 14: TRANSPORT INFORMATION.**
Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

**Land:** Transport by road: ADR, Transport by rail: RID.

**Sea:** Transport by ship: IMDG.

**Air:** Transport by plane: ICAO/IATA.

Transport documentation: Consignment note and written instructions for road transport; Bill of lading for sea; Airway bill for air transport.

### 14.1 UN number

UN No: UN1993

### 14.2 UN proper shipping name

**Description:**

ADR: UN 1993, FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL, ETHYL ALCOHOL / ISOPROPANOL, ISOPROPYL ALCOHOL, PROPA-2-OL), 3, PG II, (D/E)

IMDG: UN 1993, FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL, ETHYL ALCOHOL / ISOPROPANOL, ISOPROPYL ALCOHOL, PROPA-2-OL), 3, PG II (12ºC)

ICAO: UN 1993, FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL, ETHYL ALCOHOL / ISOPROPANOL, ISOPROPYL ALCOHOL, PROPA-2-OL), 3, PG II

### 14.3 Transport hazard class(es)

Class(es): 3

### 14.4 Packing group

Packing group: II

### 14.5 Environmental hazards

Marine pollutant: No

### 14.6 Special precautions for user

Labels: 3

![Hazard symbol]

Hazard number: 33
ADR LQ: 1 L
IMDG LQ: 1 L
ICAO LQ: 1 L

Provisions concerning carriage in bulk ADR: Not authorized carriage in bulk in accordance with ADR.

Transport by ship, FEm – Emergency sheets (F – Fire, S – Spills): F-E, S-E

Proceed in accordance with point 6.

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The product is not transported in bulk.

---

### SECTION 15: REGULATORY INFORMATION

#### 15.1 Safety, health and environmental regulations/legislation specific for the mixture


**Volatile organic compound (VOC)**

Product Subcategory (Directive 2004/42/EC): Special finishes (All types)

Phase I* (from 01/01/2007): 840 g/l

Phase II* (from 01/01/2010): 840 g/l

(*) g/l ready to use

VOC content (p/p): 79,219 %
VOC content: 847,646 g/l

The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): E2

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION.

Complete text of the H phrases that appear in section 3:

H225  Highly flammable liquid and vapour.
H226  Flammable liquid and vapour.
H302  Harmful if swallowed.
H312  Harmful in contact with skin.
H315  Causes skin irritation.
H318  Causes serious eye damage.
H319  Causes serious eye irritation.
H332  Harmful if inhaled.
H333  May cause respiratory irritation.
H336  May cause drowsiness or dizziness.

Classification codes:

Acute Tox. 4 [Dermal] : Acute toxicity (Dermal), Category 4
Acute Tox. 4 [Inhalation] : Acute toxicity (Inhalation), Category 4
Acute Tox. 4 [Oral] : Acute toxicity (Oral), Category 4
Eye Dam. 1 : Serious eye damage, Category 1
Eye Irrit. 2 : Eye irritation, Category 2
Flam. Liq. 2 : Flammable liquid, Category 2
Flam. Liq. 3 : Flammable liquid, Category 3
Skin Irrit. 2 : Skin irritant, Category 2
STOT SE 3 : Specific target organ toxicity following a single exposure, Category 3

Sections changed compared with the previous version:

1, 2, 3, 6, 8, 9, 11, 12, 14, 16

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
BCF: Bioconcentration factor.
CEN: European Committee for Standardization.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
EC50: Half maximal effective concentration.
PPE: Personal protection equipment.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.

-Continued on next page.-
SAFETY DATA SHEET
(in accordance with Regulation (EU) 2015/830)

TECNADIS HEATSHIELD Componente 1

Version: 2
Revision date: 21/04/2017
Print date: 02/06/2017

LC50: Lethal concentration, 50%.
LD50: Lethal dose, 50%.
Log Pow: Logarithm of the partition octanol-water.
NOEC: No observed effect concentration.
PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:
http://eur-lex.europa.eu/homepage.html
http://echa.europa.eu/


The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.

-End of safety data sheet.-
SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING.

1.1 Product identifier.
Product Name: TECNADIS HEATSHIELD Componente 2

1.2 Relevant identified uses of the mixture and uses advised against.
Nanoparticle-based coating with varied functionalities (water repellent, anti stain, rain repellent, anticorrosion...)
Professional use
Industrial use.

Uses advised against:
Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet.
Company: Tecnología Navarra de Nanoproductos S.L.
Address: Área Industrial Perguita, Calle A, nº1
City: 31210 Los Arcos
Province: Navarra
Telephone: +34 948 64 03 18
Fax: +34 948 64 03 19
E-mail: tecnan@tecnan-nanomat.es
Web: www.tecnan-nanomat.es

1.4 Emergency telephone number: +34 948 64 03 18 (Only available during office hours; Monday-Friday; 08:00-18:00)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the mixture.
In accordance with Regulation (EU) No 1272/2008:
Eye Irrit. 2 : Causes serious eye irritation.
Flam. Liq. 3 : Flammable liquid and vapour.
Skin Irrit. 2 : Causes skin irritation.
STOT SE 3 : May cause drowsiness or dizziness.

2.2 Label elements.
Labelling in accordance with Regulation (EU) No 1272/2008:
Pictograms:

Signal Word: Warning
H statements:
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

P statements:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P321 Specific treatment (visit the doctor with this product Safety Data Sheet).
P370+P378 In case of fire: Use ABC powder, CO2 or alcohol resistant foam to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

-Continued on next page.-
P403+P235 Store in a well-ventilated place. Keep cool.

Contains:
- isopropanol, isopropyl alcohol, propan-2-ol
- titanium tetraisopropanolate

**2.3 Other hazards.**
The product may have the following additional risks:
- N.D.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

#### 3.1 Substances.
Not Applicable.

#### 3.2 Mixtures.
Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

<table>
<thead>
<tr>
<th>Identifiers</th>
<th>Name</th>
<th>Concentrate</th>
<th>(*) Classification - Regulation (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No: 603-002-00-5CAS No: 64-17-5EC No: 200-578-6Registration No: 01-2119457610-43-XXXX</td>
<td>[1] ethanol, ethyl alcohol</td>
<td>10 - 25 %</td>
<td>Flam. Liq. 2, H225</td>
</tr>
<tr>
<td>Index No: 603-014-00-0CAS No: 111-76-2EC No: 203-905-0Registration No: 01-2119475108-36-XXXX</td>
<td>[1] 2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>10 - 25 %</td>
<td>Acute Tox. 4 *, H312 - Acute Tox. 4 *, H332 - Acute Tox. 4 *, H302 - Eye Irrit. 2, H319 - Skin Irrit. 2, H315</td>
</tr>
<tr>
<td>CAS No: 546-68-9EC No: 208-909-6</td>
<td>titanium tetraisopropanolate</td>
<td>1 - 10 %</td>
<td>Eye Irrit. 2, H319 - Flam. Liq. 3, H226 - STOT SE 3, H336</td>
</tr>
</tbody>
</table>

(*) The complete text of the H phrases is given in section 16 of this Safety Data Sheet.
[1] Substance with a Community workplace exposure limit (see section 8.1).

### SECTION 4: FIRST AID MEASURES.

-Continued on next page.-
IRRITANT PREPARATION. Its repeated or prolonged contact with the skin or mucous membranes can cause irritant symptoms such as reddening of the skin, blisters, or dermatitis. Some of the symptoms may not be immediate. They can cause allergic reactions on the skin.

4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

**Inhalation.**
Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.

**Eye contact.**
If wearing contact lenses, remove them. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance.

**Skin contact.**
Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. **NEVER** use solvents or thinners.

**Ingestion.**
If accidentally ingested, seek immediate medical attention. Keep calm. **NEVER** induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed.

Irritant Product, repeated or prolonged contact with skin or mucous membranes can cause redness, blisters or dermatitis, inhalation of spray mist or particles in suspension may cause irritation of the respiratory tract, some symptoms may not be immediate. Can cause allergic reactions.

4.3 Indication of any immediate medical attention and special treatment needed.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

**SECTION 5: FIREFIGHTING MEASURES.**

Flammable product, the necessary prevention measures should be taken in order to avoid risks, In case of fire, the following measures are recommended:

5.1 Extinguishing media.

**Recommended extinguishing methods.**
Extinguisher powder or CO₂. In case of more serious fires, also alcohol-resistant foam and water spray. Do not use a direct stream of water to extinguish.

5.2 Special hazards arising from the mixture.

**Special risks.**
Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

**Fire protection equipment.**
According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and gloves.

**SECTION 6: ACCIDENTAL RELEASE MEASURES.**

6.1 Personal precautions, protective equipment and emergency procedures.

Eliminate possible ignition points and ventilate the area. No smoking. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

6.2 Environmental precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground.
6.3 Methods and material for containment and cleaning up.
Pick up the spill with non-combustible absorbent materials (soil, sand, vermiculite, diatomite, etc.). Pour the product and the absorbent in an appropriate container. The contaminated area should be immediately cleaned with an appropriate decontaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

6.4 Reference to other sections.
For exposure control and individual protection measures, see section 8.
For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.
The fumes are heavier than air and can spread across the ground. They can form explosive mixtures with air. Prevent the creation of flammable or explosive fume concentrations in the air; prevent fume concentrations above work exposure limits. The product must only be used in areas where all unprotected flames and other ignition points have been eliminated. Electrical equipment has to be protected according to applicable standards.
The product can be electrostatically charged: always use earth grounds when transferring the product. Operators must use anti-static footwear and clothing, and floors must be conductors.
Keep the container tightly closed and isolated from heat sources, sparks, and fire. Do not use tools that can cause sparks. For personal protection, see section 8. Never use pressure to empty the containers. They are not pressure-resistant containers.
In the application area, smoking, eating, and drinking must be prohibited. Follow legislation on occupational health and safety.

7.2 Conditions for safe storage, including any incompatibilities.
Store according to local legislation. Observe indications on the label. Store the containers between 5 and 35º C in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorised persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.
Classification and threshold amount of storage in accordance with Annex 1 to Directive 2012/18/EU (SEVESO III):

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Qualifying quantity (tonnes) for application of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower-tier requirements</td>
</tr>
<tr>
<td>P5c</td>
<td>FLAMMABLE LIQUIDS</td>
<td>5.000</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s).
None

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.
Work exposure limit for:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No.</th>
<th>CAS No.</th>
<th>Country</th>
<th>Limit value</th>
<th>Limit value</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>ethanol, ethyl alcohol</td>
<td>64-17-5</td>
<td>United</td>
<td>Eight hours</td>
<td>1000</td>
<td>1920</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kingdom</td>
<td>Short term</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>111-76-2</td>
<td>European</td>
<td>Eight hours</td>
<td>20 (skin)</td>
<td>98 (skin)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Union</td>
<td>Short term</td>
<td>50 (skin)</td>
<td>246 (skin)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eight hours</td>
<td>25</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Short term</td>
<td>50</td>
<td>246</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td>67-63-0</td>
<td>United</td>
<td>Eight hours</td>
<td>400</td>
<td>999</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kingdom</td>
<td>Short term</td>
<td>500</td>
<td>1250</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[1]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eight hours</td>
<td>50 (skin)</td>
<td>275 (skin)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Short term</td>
<td>100 (skin)</td>
<td>550 (skin)</td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>108-65-6</td>
<td>European</td>
<td>Eight hours</td>
<td>50</td>
<td>274</td>
<td></td>
</tr>
</tbody>
</table>

*Continued on next page.*
The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

<table>
<thead>
<tr>
<th>Name</th>
<th>DNEL/DMEL</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol, ethyl alcohol</td>
<td>DNEL (Workers)</td>
<td>Inhalation, Long-term, Systemic effects</td>
<td>950 (mg/m³)</td>
</tr>
<tr>
<td>CAS No: 64-17-5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 200-578-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>DNEL (Workers)</td>
<td>Inhalation, Long-term, Systemic effects</td>
<td>98 (mg/m³)</td>
</tr>
<tr>
<td>CAS No: 111-76-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 203-905-0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>DNEL (Workers)</td>
<td>Inhalation, Long-term, Systemic effects</td>
<td>500 (mg/m³)</td>
</tr>
<tr>
<td>CAS No: 108-65-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 203-603-9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td>DNEL (General population)</td>
<td>Inhalation, Long-term, Systemic effects</td>
<td>89 (mg/m³)</td>
</tr>
<tr>
<td>CAS No: 67-63-0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 200-661-7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>DNEL (General population)</td>
<td>Dermal, Long-term, Systemic effects</td>
<td>888 (mg/kg bw/day)</td>
</tr>
<tr>
<td>CAS No: 108-65-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 203-603-9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>DNEL (General population)</td>
<td>Dermal, Long-term, Systemic effects</td>
<td>319 (mg/kg bw/day)</td>
</tr>
<tr>
<td>CAS No: 108-65-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 203-603-9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>DNEL (General population)</td>
<td>Oral, Long-term, Systemic effects</td>
<td>26 (mg/kg bw/day)</td>
</tr>
<tr>
<td>CAS No: 108-65-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No: 203-603-9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
Concentration levels PNEC:

<table>
<thead>
<tr>
<th>Name</th>
<th>Details</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol, ethyl alcohol</td>
<td>Fresh water</td>
<td>0.96 (mg/L)</td>
</tr>
<tr>
<td>CAS No: 64-17-5</td>
<td>Marine water</td>
<td>0.79 (mg/L)</td>
</tr>
<tr>
<td>EC No: 200-578-6</td>
<td>soil (intermittent releases)</td>
<td>2.75 (mg/L)</td>
</tr>
<tr>
<td></td>
<td>soil (sediment)</td>
<td>0.63 (mg/kg soil dw)</td>
</tr>
<tr>
<td></td>
<td>sediment (freshwater)</td>
<td>3.6 (mg/kg sediment dw)</td>
</tr>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td>Aqua (freshwater)</td>
<td>140.9 (mg/L)</td>
</tr>
<tr>
<td>CAS No: 67-63-0</td>
<td>Aqua (marine water)</td>
<td>140.9 (mg/L)</td>
</tr>
<tr>
<td>EC No: 200-661-7</td>
<td>Aqua (intermittent releases)</td>
<td>140.9 (mg/L)</td>
</tr>
<tr>
<td></td>
<td>Sediment (freshwater)</td>
<td>552 (mg/kg sediment dw)</td>
</tr>
<tr>
<td></td>
<td>Sediment (marine water)</td>
<td>552 (mg/kg sediment dw)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>28 (mg/kg soil dw)</td>
</tr>
<tr>
<td></td>
<td>PNEC STP</td>
<td>2251 (mg/L)</td>
</tr>
</tbody>
</table>

[2] According both Binding Occupational Exposure Limits (BOELVs) and Indicative Occupational Exposure Limits (IOELVs) adopted by Scientific Committee for Occupational Exposure Limits to Chemical Agents (SCOEL).
SAFETY DATA SHEET
(in accordance with Regulation (EU) 2015/830)
TECNADIS HEATSHIELD Componente 2

Version: 2
Revision date: 21/04/2017
Print date: 02/06/2017
Page 6 of 13

<table>
<thead>
<tr>
<th>Substance</th>
<th>PNEC oral (Hazard for predators)</th>
<th>aqua (freshwater)</th>
<th>aqua (marine water)</th>
<th>aqua (intermittent releases)</th>
<th>PNEC STP</th>
<th>sediment (freshwater)</th>
<th>sediment (marine water)</th>
<th>soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>160 (mg/kg food)</td>
<td>0,635 (mg/L)</td>
<td>0,0635 (mg/L)</td>
<td>6,35 (mg/L)</td>
<td>100 (mg/L)</td>
<td>3,29 (mg/kg sediment dw)</td>
<td>0,329 (mg/kg sediment dw)</td>
<td>0,29 (mg/kg soil dw)</td>
</tr>
</tbody>
</table>

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

8.2 Exposure controls.

**Measures of a technical nature:**
Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

**Concentration:** 100 %

**Uses:**
Nanoparticle-based coating with varied functionalities (water repellent, anti stain, rain repellent, anticorrosion...)
Professional use
Industrial use.

**Breathing protection:**

**PPE:** Filter mask for protection against gases and particles.

**Characteristics:** «CE» marking, category III. The mask must have a wide field of vision and an anatomically designed form in order to be sealed and watertight.

**CEN standards:** EN 136, EN 140, EN 405

**Maintenance:** Should not be stored in places exposed to high temperatures and damp environments before use. Special attention should be paid to the state of the inhalation and exhalation valves in the face adaptor.

**Observations:** Read carefully the manufacturer’s instructions regarding the equipment’s use and maintenance. Attach the necessary filters to the equipment according to the specific nature of the risk (Particles and aerosols: P1-P2-P3, Gases and vapours: A-B-E-K-AX), changing them as advised by the manufacturer.

**Filter Type needed:** A2

**Hand protection:**

**PPE:** Protective gloves against chemicals.

**Characteristics:** «CE» marking, category III.

**CEN standards:** EN 374-1, En 374-2, EN 374-3, EN 420

**Maintenance:** Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible.

**Observations:** Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.

Always use with clean, dry hands.

**Material:** PVC (polyvinyl chloride)

**Breakthrough time (min.):** > 480

**Material thickness (mm):** 0,35

**Eye protection:**

**PPE:** Face shield.

**Characteristics:** «CE» marking, category II. Face and eye protector against splashing liquid.

**CEN standards:** EN 165, EN 166, EN 167, EN 168

**Maintenance:** Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer’s instructions. Make sure that mobile parts move smoothly.

**Observations:** Face shields should offer a field of vision with a dimension in the central line of, at least, 150 mm vertically once attached to the frame.

**Skin protection:**

**PPE:** Anti-static protective clothing.

**Characteristics:** «CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user’s movements.

**CEN standards:** EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5

-Continued on next page.-
SAFETY DATA SHEET
(in accordance with Regulation (EU) 2015/830)

TECNADIS HEATSHIELD Componente 2

Version: 2
Revision date: 21/04/2017

Page 7 of 13
Print date: 02/06/2017

-Continued on next page.-
10.4 Conditions to avoid.
Avoid the following conditions:
- Heating.
- High temperature.
- Static discharge.
- Contact with incompatible materials.
- Avoid temperatures near or above the flash point. Do not heat closed containers. Avoid direct sunlight and heat, as these may cause a risk of fire.

10.5 Incompatible materials.
Avoid the following materials:
- Acids.
- Bases.
- Oxidizing agents.
- Explosives materials.
- Toxic materials.
- Oxidizing materials.

10.6 Hazardous decomposition products.
Depending on conditions of use, can be generated the following products:
- COx (carbon oxides).
- Organic compounds.
In case of fire, dangerous decomposition products can be generated, such as carbon monoxide and dioxide and nitrogen fumes and oxides.

SECTION 11: TOXICOLOGICAL INFORMATION.

IRRITANT PREPARATION. Splatters in the eyes can cause irritation.
IRRITANT PREPARATION. Its repeated or prolonged contact with the skin or mucous membranes can cause irritant symptoms such as reddening of the skin, blisters, or dermatitis. Some of the symptoms may not be immediate. They can cause allergic reactions on the skin.
IRRITANT PREPARATION. The inhalation of spray mist or suspended particulates can irritate the respiratory tract. It can also cause serious respiratory difficulties, central nervous system disorders, and in extreme cases, unconsciousness.

11.1 Information on toxicological effects.
Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.
Splatters in the eyes can cause irritation and reversible damage.

Toxicological information about the substances present in the composition.

<table>
<thead>
<tr>
<th>Name</th>
<th>Acute toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
</tr>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td>Oral</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>Oral</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

<table>
<thead>
<tr>
<th>Name</th>
<th>Ecotoxicity</th>
<th>Type</th>
<th>Test</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td></td>
<td>Fish</td>
<td>LC50</td>
<td>Fish</td>
<td>9640 mg/l (96 h) [1]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


-Continued on next page.-
12.2 Persistence and degradability.  
No information is available about persistence and degradability of the product.

12.3 Bioaccumulative potential.  
Information about the bioaccumulation of the substances present.

<table>
<thead>
<tr>
<th>Name</th>
<th>Bioaccumulation</th>
<th>Log Pow</th>
<th>BCF</th>
<th>NOECs</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol, ethyl alcohol</td>
<td></td>
<td>-0.3</td>
<td>-</td>
<td>-</td>
<td>Very low</td>
</tr>
<tr>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol, monobutyl ether</td>
<td></td>
<td>0.8</td>
<td>-</td>
<td>-</td>
<td>Very low</td>
</tr>
<tr>
<td>isopropanol, isopropyl alcohol, propan-2-ol</td>
<td></td>
<td>0.05</td>
<td>-</td>
<td>-</td>
<td>Very low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil.  
No information is available about the mobility in soil.  
The product must not be allowed to go into sewers or waterways.  
Prevent penetration into the ground.

12.5 Results of PBT and vPvB assessment.  
No information is available about the results of PBT and vPvB assessment of the product.

12.6 Other adverse effects.  
No information is available about other adverse effects for the environment.

SECTION 13 DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.  
Do not dump into sewers or waterways.  Waste and empty containers must be handled and eliminated according to current, local/national legislation.  

SECTION 14: TRANSPORT INFORMATION.
Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

**Land:** Transport by road: ADR, Transport by rail: RID.
Transport documentation: Consignment note and written instructions

**Sea:** Transport by ship: IMDG.
Transport documentation: Bill of lading

**Air:** Transport by plane: ICAO/IATA.
Transport document: Airway bill.

### 14.1 UN number.
UN No: UN1993

### 14.2 UN proper shipping name.
Description:
ADR: UN 1993, FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL,ETHYL ALCOHOL / TITANIUM TETRAISOPROPANOLATE), 3, PG II, (D/E)
IMDG: UN 1993, FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL,ETHYL ALCOHOL / TITANIUM TETRAISOPROPANOLATE), 3, PG II (38,5ºC)
ICAO: UN 1993, FLAMMABLE LIQUID, N.O.S. (CONTAINS ETHANOL,ETHYL ALCOHOL / TITANIUM TETRAISOPROPANOLATE), 3, PG II

### 14.3 Transport hazard class(es).
Class(es): 3

### 14.4 Packing group.
Packing group: II

### 14.5 Environmental hazards.
Marine pollutant: No

### 14.6 Special precautions for user.
Labels: 3

#### Hazard number: 33
ADR LQ: 1 L
IMDG LQ: 1 L
ICAO LQ: 1 L

Provisions concerning carriage in bulk ADR: Not authorized carriage in bulk in accordance with ADR.

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): F-E,S-E
Proceed in accordance with point 6.

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code.
The product is not transported in bulk.

---

**SECTION 15: REGULATORY INFORMATION.**

#### 15.1 Safety, health and environmental regulations/legislation specific for the mixture.

**Volatile organic compound (VOC)**
Product Subcategory (Directive 2004/42/EC): Special finishes (All types)
Phase I* (from 01/01/2007): 840 g/l
Phase II* (from 01/01/2010): 840 g/l
( ) g/l ready to use

VOC content (p/p): 80,05 %
VOC content: 720,45 g/l

The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): P5c

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION.

Complete text of the H phrases that appear in section 3:

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H336 May cause drowsiness or dizziness.

Classification codes:

- Acute Tox. 4 [Dermal] : Acute toxicity (Dermal), Category 4
- Acute Tox. 4 [Inhalation] : Acute toxicity (Inhalation), Category 4
- Acute Tox. 4 [Oral] : Acute toxicity (Oral), Category 4
- Eye Irrit. 2 : Eye irritation, Category 2
- Flam. Liq. 2 : Flammable liquid, Category 2
- Flam. Liq. 3 : Flammable liquid, Category 3
- Skin Irrit. 2 : Skin irritant, Category 2
- STOT SE 3 : Specific target organ toxicity following a single exposure, Category 3

Sections changed compared with the previous version:

1,2,3,4,6,8,11,12,14,16

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
BCF: Bioconcentration factor.
CEN: European Committee for Standardization.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
EC50: Half maximal effective concentration.
PPE: Personal protection equipment.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.
LC50: Lethal concentration, 50%.
LD50: Lethal dose, 50%.
Log Pow: Logarithm of the partition octanol-water.

-Continued on next page.-
NOEC: No observed effect concentration.
PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:
http://eur-lex.europa.eu/homepage.html
http://echa.europa.eu/


The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.