\textbf{SECTION 1: Identification of the substance/mixture and of the company/undertaking}

- 1.1 Product identifier
- Trade name: TAFIGEL® PUR 41
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
  - No further relevant information available.
- Application of the substance / the mixture: Rheology modifier
- 1.3 Details of the supplier of the safety data sheet
  - Manufacturer/Supplier: MÜNZING CHEMIE GmbH
  - Münzingstrasse 2
  - 74232 Abstatt, Germany
  - E-Mail: info@munzing.com
  - Tel.: +49 7131 987-100
  - Further information obtainable from:
    - Product Safety Department
    - E-mail (MSDS): mscs@munzing.com
- 1.4 Emergency telephone number: For Chemical Emergencies: CHEMTREC: +1 703 741 5970

\textbf{SECTION 2: Hazards identification}

- 2.1 Classification of the substance or mixture
  - Classification according to Regulation (EC) No 1272/2008
    - The product is not classified, according to the CLP regulation.
- 2.2 Label elements
  - Labelling according to Regulation (EC) No 1272/2008: Void
  - Hazard pictograms: Void
  - Signal word: Void
  - Hazard statements: Void
- 2.3 Other hazards
  - Results of PBT and vPvB assessment
    - PBT: None.
    - vPvB: None.

\textbf{SECTION 3: Composition/information on ingredients}

- 3.2 Chemical characterisation: Mixtures
  - Description: Polyurethane dispersion
  - Dangerous components: Void

\textbf{SECTION 4: First aid measures}

- 4.1 Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - After inhalation:
    - Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  - 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 doctor.
- 4.2 Most important symptoms and effects, both acute and delayed: No further relevant information available.

(Contd. on page 2)
SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
  - Suitable extinguishing agents:
    - CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
    - Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
  - In case of fire, the following can be released:
    - Nitrogen oxides (NOx)
    - Carbon monoxide (CO)
- **5.3 Advice for firefighters**
  - Protective equipment: Do not inhale explosion gases or combustion gases.
  - Additional information
    - Product contains water and is non-combustible.
    - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
  - Wear protective clothing.
  - Particular danger of slipping on leaked/spilled product.
- **6.2 Environmental precautions**
  - Dilute with plenty of water.
  - Do not allow to enter sewers/surface or ground water.
- **6.3 Methods and material for containment and cleaning up**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection**
  - Protect from heat.
  - The product is not flammable.
- **7.2 Conditions for safe storage, including any incompatibilities**
  - **Storage**:
    - **Requirements to be met by storerooms and receptacles**: Store in a cool location.
    - **Information about storage in one common storage facility**: Not required.
  - **Further information about storage conditions**
    - Protect from frost.
    - Store in cool, dry conditions in well-sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.
SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **8.1 Control parameters**
  - **Ingredients with limit values that require monitoring at the workplace:**
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**
  - **Personal protective equipment:**
    - **General protective and hygienic measures:**
      The usual precautionary measures are to be adhered to when handling chemicals.
      Avoid contact with the eyes and skin.
    - **Respiratory protection:** Use suitable respiratory protective device only when aerosol or mist is formed.
  
  - **Protection of hands:**
    Only use chemical-protective gloves with CE-labelling of category III.
    The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    - **Material of gloves**
      Nitrile rubber, NBR
      Recommended thickness of the material: ≥ 0.4 mm
      The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies 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 prior to the application.
  
  - **Penetration time of glove material**
    For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 374 Part 3: Level 6).
    The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
    The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
  
  - **Eye protection:** Safety glasses
  
  - **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance:**
      - **Form:** Fluid
      - **Colour:** Yellowish
      - **Odour:** Characteristic
      - **Odour threshold:** Not determined.
    
    - **pH-value (20 g/l) at 20 °C:** ≈ 7 (DIN ISO 976)
    
    - **Change in condition**
      - **Melting point/freezing point:** Undetermined.
      - **Initial boiling point and boiling range:** ≈ 100 °C
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 17.12.2018
Version number 1
Revision: 21.07.2017

Trade name: TAFIGEL® PUR 41

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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>&gt; 100 °C (DIN EN ISO 2719)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
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<tr>
<td>Ignition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>None.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not determined.</td>
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<tr>
<td>Density at 20 °C:</td>
<td>≈ 1.04 g/cm³ (DIN EN ISO 2811-1)</td>
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<tr>
<td>Relative density</td>
<td>Not determined.</td>
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<tr>
<td>Vapour density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
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<tr>
<td>Solubility in / Miscibility with water</td>
<td>Fully miscible.</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not determined.</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Dynamic at 20 °C:</td>
<td>≈ 6000 mPas (DIN EN ISO 3219)</td>
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<tr>
<td>Solvent content</td>
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<tr>
<td>Water</td>
<td>≈ 65 %</td>
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<tr>
<td>9.2 Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided:
No decomposition if used and stored according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity Based on available data, the classification criteria are not met.
Primary irritant effect:
Skin corrosion/irritation Based on available data, the classification criteria are not met.
Serious eye damage/irritation Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Germ cell mutagenicity Based on available data, the classification criteria are not met.

(Contd. on page 5)
SECTION 12: Ecological information

- 12.1 Toxicity
  - Aquatic toxicity: No further relevant information available.
  - 12.2 Persistence and degradability: No further relevant information available.
  - 12.3 Bioaccumulative potential: No further relevant information available.
  - 12.4 Mobility in soil: No further relevant information available.

- Ecotoxicological effects:
  - Behaviour in sewage processing plants:
    Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations. Do not release untreated into natural waters.

- Additional ecological information:
  - General notes:
    At present there are no ecotoxicological assessments.
    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.

- 12.5 Results of PBT and vPvB assessment
  According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Self classification.

- 12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  - Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  07 02 08* Other still bottoms and reaction residues

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR/RID/ADN, ADN, IMDG, IATA: Void

- 14.2 UN proper shipping name
  - ADR/RID/ADN, ADN, IMDG, IATA: Void

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Trade name: TAFIGEL® PUR 41

- 14.3 Transport hazard class(es)
  - ADR/RID/ADN, ADN, IMDG, IATA
    - Class: Void

- 14.4 Packing group
  - ADR/RID/ADN, IMDG, IATA
    - Void

- 14.5 Environmental hazards:
  - Marine pollutant: No

- 14.6 Special precautions for user
  - Not applicable.

- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - Not a dangerous good to the above specifications.

- UN "Model Regulation": Void

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - National regulations:
  - Water hazard class: Water hazard class 1 (German AwSV, Self-assessment): slightly hazardous for water.

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

SECTION 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.

- Department issuing SDS:
  Product Safety Department
  E-Mail: msds@munzing.com

- 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 Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative