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

1.1 Product identifier
- Trade name: TAFIGEL® PUR 44

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

1.4 Emergency telephone number: For Chemical Emergencies: CHEMTREC: +1 703 741 5970

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
  - Additional information: Safety data sheet available on request.

2.3 Other hazards
- Results of PBT and vPvB assessment
  - PBT: None.
  - vPvB: None.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures
- Description: Polyurethane dispersion

Dangerous components:
- CAS: 143-22-6
- EINECS: 205-592-6
- Reg.nr.: 01-2119531322-53
- 2-[2-(2-Butoxyethoxy)ethoxy]ethanol
- Eye Dam. 1, H318
- 10-20%

Additional information: For the wording of the listed hazard phrases refer to section 16.

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; consult doctor in case of complaints.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water.

(Contd. on page 2)
Trade name: TAFIGEL® PUR 44

(Contd. of page 1)

· After swallowing: If symptoms persist consult doctor.
· 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
· 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

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.
· 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: 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.

(Contd. on page 3)
Trade name: TAFIGEL® PUR 44

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.

DNELs

<table>
<thead>
<tr>
<th>CAS: 143-22-6 2-[2-(2-Butoxyethoxy)ethoxy]ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral consumer, long-term exposure, systemic effects</td>
</tr>
<tr>
<td>Dermal worker, long-term exposure, systemic effects</td>
</tr>
<tr>
<td>Inhalative worker, long-term exposure, systemic effects</td>
</tr>
</tbody>
</table>

PNECs

<table>
<thead>
<tr>
<th>CAS: 143-22-6 2-[2-(2-Butoxyethoxy)ethoxy]ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>fresh water</td>
</tr>
<tr>
<td>marine water</td>
</tr>
<tr>
<td>aqua - intermittent release</td>
</tr>
<tr>
<td>soil</td>
</tr>
<tr>
<td>sediment (fresh water)</td>
</tr>
<tr>
<td>sewage treatment plant</td>
</tr>
</tbody>
</table>

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
Fluorocarbon rubber (Viton)
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.
Eye protection: Safety glasses
Body protection: Protective work clothing

(Contd. of page 2)
SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
  - General Information
  - Appearance:
    - Form: Fluid
    - Colour: Grey
    - 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
  - Flash point: > 100 °C (DIN EN ISO 2719)
  - Flammability (solid, gas): Not applicable.
  - Ignition temperature: Not determined.
  - Decomposition temperature: Not determined.
  - Auto-ignition temperature: Product is not selfigniting.
  - Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
  - Explosion limits:
    - Lower: Not determined.
    - Upper: Not determined.
  - Oxidising properties: None.
  - Vapour pressure: Not determined.
  - Density at 20 °C: ≈ 1.07 g/cm³ (DIN EN ISO 2811-1)
  - Relative density: Not determined.
  - Vapour density: Not determined.
  - Evaporation rate: Not determined.
  - Solubility in / Miscibility with water: Partly miscible.
  - Partition coefficient: n-octanol/water: Not determined.
  - Viscosity:
    - Dynamic at 20 °C: ≈ 21000 mPas (DIN EN ISO 3219)
  - Solvent content:
    - Water: ≈ 40 %
  - 9.2 Other information: No further relevant information available.

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 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.
Trade name: TAFIGEL® PUR 44

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
  - **Acute toxicity** Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>CAS: 143-22-6 2-[2-(2-Butoxyethoxy)ethoxy]ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
</tbody>
</table>

- **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.
  - **Carcinogenicity** Based on available data, the classification criteria are not met.
  - **Reproductive toxicity** Based on available data, the classification criteria are not met.
  - **STOT-single exposure** Based on available data, the classification criteria are not met.
  - **STOT-repeated exposure** Based on available data, the classification criteria are not met.

- **Aspiration hazard** Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**

<table>
<thead>
<tr>
<th>CAS: 143-22-6 2-[2-(2-Butoxyethoxy)ethoxy]ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 (static)</td>
</tr>
<tr>
<td>EC10 (static)</td>
</tr>
<tr>
<td>EC50 (static)</td>
</tr>
<tr>
<td>LC50 (static)</td>
</tr>
</tbody>
</table>

- **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:**
    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.
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.

<table>
<thead>
<tr>
<th>European waste catalogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 02 99 wastes not otherwise specified</td>
</tr>
</tbody>
</table>

- 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

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

- Relevant phrases
  H318 Causes serious eye damage.

- 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)
  DNEL: Derived No-Effect Level (REACH)
  PNEC: Predicted No-Effect Concentration (REACH)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1