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

1.1 Product identifier

Trade name: EDAPLAN® LA 402

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 Additive

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): msds@munzing.com

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
Flam. Liq. 3  H226 Flammable liquid and vapour.
Acute Tox. 4  H332 Harmful if inhaled.
Skin Irrit. 2  H315 Causes skin irritation.
Eye Dam. 1  H318 Causes serious eye damage.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS02  GHS05  GHS07

Signal word Danger

Hazard-determining components of labelling:
Ethylene glycol monobutyl ether
butan-1-ol

Hazard statements
H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see on this label).

(Contd. on page 2)
SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures
Description:
Mixture of substances listed below with nonhazardous additions.
arylic copolymer

Dangerous components:

<table>
<thead>
<tr>
<th>CAS:</th>
<th>111-76-2</th>
<th>Ethylene glycol monobutyl ether</th>
<th>20-50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS:</td>
<td>203-905-0</td>
<td>Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319</td>
<td></td>
</tr>
<tr>
<td>Reg.nr.:</td>
<td>01-2119475108-36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| CAS: | 71-36-3 | butan-1-ol | 3-5% |
|------|--------------------------------|-----------|
| EINECS: | 200-751-6 | Flam. Liq. 3, H226; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336 |
| Reg.nr.: | 01-2119484630-38 |

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.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:
Take affected persons into fresh air and keep quiet.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: Do not induce vomiting; call for medical help immediately.

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.

For safety reasons unsuitable extinguishing agents: Water with full jet

5.2 Special hazards arising from the substance or mixture Can form explosive gas-air mixtures.

(Contd. of page 1)
5.3 Advice for firefighters
- Protective equipment: Do not inhale explosion gases or combustion gases.
- Additional information
  Cool endangered receptacles with water spray.
  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
  Ensure adequate ventilation.
  Keep away from ignition sources.
  Wear protective clothing.
  Wear protective equipment. Keep unprotected persons away.
- 6.2 Environmental precautions:
  Do not allow to penetrate the ground/soil.
  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).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
  Do not flush with water or aqueous cleansing agents
- 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
  Store in cool, dry place in tightly closed receptacles.
  Ensure good ventilation/exhaustion at the workplace.
  Prevent formation of aerosols.
- Information about fire - and explosion protection:
  Keep ignition sources away - Do not smoke.
  Protect from heat.
  Protect against electrostatic charges.
- 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: Store away from oxidising agents.
    - 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.
8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

**CAS: 111-76-2 Ethylene glycol monobutyl ether**
- **WEL**
  - Short-term value: 246 mg/m³, 50 ppm
  - Long-term value: 123 mg/m³, 25 ppm
  - Sk, BMGV

**CAS: 71-36-3 butan-1-ol**
- **WEL**
  - Short-term value: 154 mg/m³, 50 ppm
  - Sk

DNELs

**CAS: 111-76-2 Ethylene glycol monobutyl ether**
- **Oral**
  - Consumer, long-term exposure, systemic effects: 3.2 mg/kg bw/day (human)
  - Worker, long-term exposure, systemic effects: 75 mg/kg bw/day (human)
- **Dermal**
  - Consumer, long-term exposure, systemic effects: 38 mg/kg bw/day (human)
- **Inhalative**
  - Worker, long-term exposure, systemic effects: 98 mg/m³ (human)
  - Worker, short-term exposure, local effects: 663 mg/m³ (human)
  - Consumer, long-term exposure, systemic effects: 49 mg/m³ (human)
  - Consumer, short-term exposure, local effects: 426 mg/m³ (human)

**CAS: 71-36-3 butan-1-ol**
- **Oral**
  - Worker, long-term exposure, systemic effects: 3.125 mg/kg bw/day (human)
- **Inhalative**
  - Worker, short-term exposure, local effects: 310 mg/m³ (human)
  - Consumer, long-term exposure, systemic effects: 55 mg/m³ (human)

PNECs

**CAS: 111-76-2 Ethylene glycol monobutyl ether**
- Fresh water: 8.8 mg/l (not specified)
- Marine water: 0.88 mg/l (not specified)
- Aqua - intermittent release: 9.1 mg/l (not specified)
- Soil: 3.13 mg/kg (not specified)
- Sediment (fresh water): 34.6 mg/kg (not specified)
- Sediment (marine water): 3.46 mg/kg (not specified)
- Sewage treatment plant: 463 mg/l (not specified)

**CAS: 71-36-3 butan-1-ol**
- Fresh water: 0.082 mg/l (not specified)
- Marine water: 0.0082 mg/l (not specified)
- Aqua - intermittent release: 2.25 mg/l (not specified)
- Soil: 0.015 mg/kg (not specified)
- Sediment (fresh water): 0.178 mg/kg (not specified)
- Sediment (marine water): 0.0178 mg/kg (not specified)
- Sewage treatment plant: 2.476 mg/l (not specified)

Ingredients with biological limit values:

**CAS: 111-76-2 Ethylene glycol monobutyl ether**
- BMGV 240 mmol/mol creatinine
- Medium: urine
- Sampling time: post shift
- Parameter: butoxyacetic acid

(Contd. of page 5)
Recommended thickness of the 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 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 cannot 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: Tightly sealed goggles

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: ≈ 4 (DIN ISO 976)
    - Change in condition
      - Melting point/freezing point: Undetermined.
      - Initial boiling point and boiling range: ≈ 170 °C (2-butoxyethanol)
    - Flash point: ≈ 50 °C (DIN EN ISO 2719)
    - Flammability (solid, gas): Not applicable.
    - Ignition temperature: ≈ 240 °C (2-butoxyethanol)
    - Decomposition temperature: Not determined.
SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity
  Harmful if inhaled.

LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>CAS: 111-76-2 Ethylene glycol monoethyl ether</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 71-36-3 Butan-1-ol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>
Self classification.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage

· 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>Aquatic toxicity:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAS: 111-76-2 Ethylene glycol monobutyl ether</strong></td>
<td></td>
</tr>
<tr>
<td>EC50 (static)</td>
<td>1,840 mg/l (algae) (Pseudokirchneriella subcapitata / 72 h (OECD 201))</td>
</tr>
<tr>
<td></td>
<td>1,550 mg/l (daphnia) (Daphnia magna / 48 h (OECD 202))</td>
</tr>
<tr>
<td>LC50 (static)</td>
<td>1,474 mg/l (fish) (Oncorhynchus mykiss / 96 h (OECD 203))</td>
</tr>
<tr>
<td>LL50</td>
<td>&gt;100 mg/l (algae)</td>
</tr>
<tr>
<td></td>
<td>&gt;100 mg/l (daphnia)</td>
</tr>
<tr>
<td>EL50</td>
<td>&gt;100 mg/l (algae)</td>
</tr>
<tr>
<td></td>
<td>&gt;100 mg/l (fish)</td>
</tr>
<tr>
<td>NOEC</td>
<td>100 mg/l (daphnia) (Daphnia magna / 21 d (OECD 211))</td>
</tr>
<tr>
<td><strong>CAS: 71-36-3 butan-1-ol</strong></td>
<td></td>
</tr>
<tr>
<td>EC50</td>
<td>225 mg/l (algae) (Scenedesmus subspicatus / 96 h)</td>
</tr>
<tr>
<td></td>
<td>1,328 mg/l (daphnia) (Daphnia magna / 48 h)</td>
</tr>
<tr>
<td>EC10</td>
<td>2,476 mg/l (bacteria) (Pseudomonas putida / 16 h)</td>
</tr>
<tr>
<td>LC50</td>
<td>1,376 mg/l (fish) (Pimephales promelas / 96 h)</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.

(Contd. on page 8)
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 04* other organic solvents, washing liquids and mother liquors</td>
</tr>
</tbody>
</table>

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agents: Diluted caustic solution.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR/RID/ADN, IMDG, IATA UN1120

- 14.2 UN proper shipping name
  - ADR/RID/ADN BUTANOLS solution
  - IMDG, IATA BUTANOLS solution

- 14.3 Transport hazard class(es)
  - ADR/RID/ADN, IMDG, IATA
    - Class 3 Flammable liquids.
    - Label 3

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

- 14.5 Environmental hazards:
  - Marine pollutant: No

- 14.6 Special precautions for user
  - Danger code (Kemler): Warning: Flammable liquids.
  - EMS Number: F-E,S-D
  - Stowage Category A

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

- Transport/Additional information:
  - ADR/RID/ADN
  - Limited quantities (LQ) 5L
  - Transport category 3
  - Tunnel restriction code D/E

(Contd. on page 9)
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.
- Seveso category P5c FLAMMABLE LIQUIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- National regulations:
  - Information about limitation of use:
  - Employment restrictions concerning juveniles must be observed.
  - Employment restrictions concerning pregnant and lactating women must be observed.
  - 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.

- Relevant phrases
  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.
  H335 May cause respiratory irritation.
  H336 May cause drowsiness or dizziness.

- 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
  Flam. Liq. 3: Flammable liquids – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Irrit. 2: Skin corrosion/irritation – Category 2

(Contd. on page 10)
Trade name: EDAPLAN® LA 402

Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Contd. of page 9)