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

1.1 Product identifier
- Trade name: LUBA-print® 232/D
- UFI: R880-S016-K00E-AMSC

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

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. 2  H225 Highly flammable liquid and vapour.
Eye Irrit. 2  H319 Causes serious eye irritation.

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
- GHS07

Signal word: Danger

Hazard statements
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

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

- **3.2 Chemical characterisation: Mixtures**
  - **Description:** Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>CAS: 64-17-5</th>
<th>Ethanol</th>
<th>Flam. Liq. 2, H225; Eye Irrit. 2, H319</th>
<th>20-50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-578-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reg.nr.: 01-2119457610-43</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **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:**
    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.

- **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.

(Contd. of page 1)
**7.3 Specific end use(s)**

- Oral consumer, long-term exposure, systemic effects 87 mg/kg bw/day (human)
- Dermal worker, long-term exposure, systemic effects 343 mg/kg bw/day (human)
- Dermal consumer, long-term exposure, systemic effects 206 mg/kg bw/day (human)
- Inhalative worker, long-term exposure, systemic effects 950 mg/m³ (human)
- Inhalative worker, short-term exposure, local effects 1,900 mg/m³ (human)
- Inhalative consumer, long-term exposure, systemic effects 114 mg/m³ (human)
- Inhalative consumer, short-term exposure, local effects 950 mg/m³ (human)

No further relevant information available.
Recommended thickness of the material:

The determined penetration times according to EN 16523-1:2015 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
Safety data sheet  
according to 1907/2006/EC, Article 31

Trade name: LUBA-print® 232/D  

(Contd. of page 4)

- Odour threshold: Not determined.
- pH-value: Not determined.
- Change in condition
  Melting point/freezing point: Undetermined.
  Initial boiling point and boiling range: ≈ 78 °C (ethyl alcohol)
- Flash point: ≈ 12 °C (DIN EN ISO 2719)
- Flammability (solid, gas): Not applicable.
- Ignition temperature: ≈ 425 °C (ethyl alcohol)
- 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: ≈ 3.5 Vol % (ethyl alcohol)
  Upper: ≈ 15 Vol % (ethyl alcohol)
- Oxidising properties: None.
- Vapour pressure at 20 °C: ≈ 57 hPa (ethyl alcohol)
- Density at 20 °C:
  ≈ 0.86 g/cm³ (DIN EN ISO 2811-1)
- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not determined.
- Solubility in / Miscibility with water: Fully miscible.
- Partition coefficient: n-octanol/water: Not determined.
- Viscosity:
  Dynamic at 23 °C: ≈ 73 mPas (DIN EN ISO 3219)
  Kinematic: Not determined.
- Solvent separation test: Not determined
- 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.
- 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.

(Contd. on page 6)
SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

<table>
<thead>
<tr>
<th>CAS: 64-17-5 Ethanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 6,500 mg/l (bacteria) (Pseudomonas putida / 16 h)</td>
</tr>
<tr>
<td>&gt;9,268 mg/l (daphnia) (Daphnia magna / 48 h)</td>
</tr>
<tr>
<td>LC50 &gt;100 mg/l (daphnia) (Daphnia magna / 24 h)</td>
</tr>
<tr>
<td>8,140 mg/l (fish) (Leuciscus idus / 48 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.

Ecotoxic 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.

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.

<table>
<thead>
<tr>
<th>European waste catalogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 07 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: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR/RID/ADN, IMDG, IATA UN1993

- 14.2 UN proper shipping name
  - ADR/RID/ADN 1993 FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL)), special provision 640D
  - IMDG FLAMMABLE LIQUID, N.O.S. (ETHANOL (ETHYL ALCOHOL))
  - IATA FLAMMABLE LIQUID, N.O.S. (ETHANOL)

- 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 II

- 14.5 Environmental hazards:
  Not applicable.

- 14.6 Special precautions for user
  - Hazard identification number (Kemler code): 33
  - EMS Number: F-E,S-E
  - Stowage Category B

- 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) 1L
    - Transport category 2
    - Tunnel restriction code D/E
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.

- Waterhazard 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
  H225 Highly flammable liquid and vapour.
  H319 Causes serious eye irritation.

- 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. 2: Flammable liquids – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2