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

1.1 Product identifier
- Trade name: LUBA-print® 254/S
- UFI: 9UE1-D02A-2008-420U

1.2 Relevant identified uses of the substance or mixture and uses advised against
- Application of the substance / the mixture Wax additive for paints and printing inks

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
  Flam. Liq. 3 H226 Flammable liquid and vapour.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2 H319 Causes serious eye irritation.
  STOT SE 3 H336 May cause drowsiness or dizziness.

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 Warning

Hazard-determining components of labelling:
- 1-methoxy-2-propanol

Hazard statements
- H226 Flammable liquid and vapour.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.

Precautionary statements
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- 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.
SECTION 3: Composition/information on ingredients

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

- Dangerous components:

<table>
<thead>
<tr>
<th>CAS: 107-98-2</th>
<th>EINECS: 203-539-1</th>
<th>Flammable Liquid</th>
<th>H226</th>
<th>Acute Tox. 4; H302; Acute Tox. 4; H312; Acute Tox. 4; H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reg.nr.: 01-2119457435-35</td>
<td>1-methoxy-2-propanol</td>
<td>Flam. Liq. 3; H226; STOT SE 3; H336</td>
<td>20-50%</td>
<td></td>
</tr>
<tr>
<td>CAS: 111-76-2</td>
<td>EINECS: 203-905-0</td>
<td>Ethylene glycol monobutyl ether</td>
<td>20-50%</td>
<td></td>
</tr>
<tr>
<td>Reg.nr.: 01-2119475108-36</td>
<td></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>
<td></td>
</tr>
<tr>
<td>CAS: 1589-47-5</td>
<td>EINECS: 216-455-5</td>
<td>2-methoxypropanol</td>
<td>Flam. Liq. 3; H226; Repr. 1B, H360D; Eye Dam. 1, H318; Skin Irrit. 2, H315; STOT SE 3, H335</td>
<td>&lt;0.3%</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.
  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.
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.
Trade name: LUBA-print® 254/S

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>CAS: 107-98-2 1-methoxy-2-propanol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL: Short-term value: 560 mg/m³, 150 ppm</td>
<td></td>
</tr>
<tr>
<td>Long-term value: 375 mg/m³, 100 ppm</td>
<td></td>
</tr>
<tr>
<td>Sk</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 111-76-2 Ethylene glycol monobutyl ether</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL: Short-term value: 246 mg/m³, 50 ppm</td>
<td></td>
</tr>
<tr>
<td>Long-term value: 123 mg/m³, 25 ppm</td>
<td></td>
</tr>
<tr>
<td>Sk, BMGV</td>
<td></td>
</tr>
</tbody>
</table>

DNELs

<table>
<thead>
<tr>
<th>CAS: 107-98-2 1-methoxy-2-propanol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral consumer, long-term exposure, systemic effects 3.3 mg/kg bw/day (human)</td>
<td></td>
</tr>
<tr>
<td>Dermal worker, long-term exposure, systemic effects 50.6 mg/kg bw/day (human)</td>
<td></td>
</tr>
<tr>
<td>Dermal consumer, long-term exposure, systemic effects 18.1 mg/kg bw/day (human)</td>
<td></td>
</tr>
<tr>
<td>Inhalative worker, long-term exposure, systemic effects 369 mg/m³ (human)</td>
<td></td>
</tr>
<tr>
<td>Inhalative consumer, long-term exposure, systemic effects 43.9 mg/m³ (human)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 111-76-2 Ethylene glycol monobutyl ether</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral consumer, long-term exposure, systemic effects 6.3 mg/kg bw/day (human)</td>
<td></td>
</tr>
<tr>
<td>Dermal worker, long-term exposure, systemic effects 125 mg/kg bw/day (human)</td>
<td></td>
</tr>
<tr>
<td>Dermal consumer, long-term exposure, systemic effects 75 mg/kg bw/day (human)</td>
<td></td>
</tr>
<tr>
<td>Inhalative worker, short-term exposure, local effects 98 mg/m³ (human)</td>
<td></td>
</tr>
<tr>
<td>Inhalative consumer, short-term exposure, local effects 246 mg/m³ (human)</td>
<td></td>
</tr>
<tr>
<td>Inhalative consumer, long-term exposure, systemic effects 59 mg/m³ (human)</td>
<td></td>
</tr>
<tr>
<td>Inhalative consumer, short-term exposure, local effects 426 mg/m³ (human)</td>
<td></td>
</tr>
</tbody>
</table>

PNECs

<table>
<thead>
<tr>
<th>CAS: 107-98-2 1-methoxy-2-propanol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>fresh water 10 mg/l (not specified)</td>
<td></td>
</tr>
<tr>
<td>marine water 1 mg/l (not specified)</td>
<td></td>
</tr>
<tr>
<td>soil 2.47 mg/kg (not specified)</td>
<td></td>
</tr>
<tr>
<td>sediment (fresh water) 41.6 mg/kg (not specified)</td>
<td></td>
</tr>
<tr>
<td>sediment (marine water) 4.17 mg/kg (not specified)</td>
<td></td>
</tr>
<tr>
<td>sewage treatment plant 100 mg/l (not specified)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 111-76-2 Ethylene glycol monobutyl ether</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>fresh water 8.8 mg/l (not specified)</td>
<td></td>
</tr>
<tr>
<td>marine water 0.88 mg/l (not specified)</td>
<td></td>
</tr>
<tr>
<td>aqua - intermittent release 9.1 mg/l (not specified)</td>
<td></td>
</tr>
<tr>
<td>soil 2.33 mg/kg (not specified)</td>
<td></td>
</tr>
<tr>
<td>sediment (fresh water) 34.6 mg/kg (not specified)</td>
<td></td>
</tr>
<tr>
<td>sediment (marine water) 3.46 mg/kg (not specified)</td>
<td></td>
</tr>
<tr>
<td>sewage treatment plant 463 mg/l (not specified)</td>
<td></td>
</tr>
</tbody>
</table>

(Contd. on page 5)
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: butyric acid

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:
Protective gloves
The glove material has to be impermeable and resistant to the product/substance/preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.5 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 16523-1:2015: Level 6).
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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:
- Form: Fluid
- Colour: White
- Odour: Characteristic
- Odour threshold: Not determined.

pH-value:
- Not determined.

Change in condition
- Melting point/freezing point: Undetermined.
**Initial boiling point and boiling range:** ≈120 °C (1-methoxy-2-propanol)

- **Flash point:** ≈ 43 °C (DIN EN ISO 2719)
- **Flammability (solid, gas):** Not applicable.
- **Ignition temperature:** ≈ 250 °C (2-butoxyethanol)
- **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: ≈ 1.1 Vol % (2-butoxyethanol)
  - Upper: ≈ 13.7 Vol % (1-methoxy-2-propanol)
- **Oxidising properties:** None
- **Vapour pressure:** Not determined.
- **Density at 20 °C:** ≈ 0.92 g/cm³ (DIN EN ISO 2811-1)
- **Relative density:** Not determined.
- **Vapour density:** Not determined.
- **Evaporation rate:** Not determined.

- **Solubility in / Miscibility with water:** Insoluble.
- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity:**  
  - **Dynamic at 23 °C:** ≈ 28 mPa·s (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.

- **LD/LC50 values relevant for classification:**

<table>
<thead>
<tr>
<th>CAS: 107-98-2 1-methoxy-2-propanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>
Self classification.

12.3 Bioaccumulative potential

- Skin corrosion/irritation
  - Causes skin irritation.
- Oral LD50 1,300 mg/kg (guinea pig)
- Inhalative LC50/4h 10–20 mg/l (rat)

SECTION 12: Ecological information

12.1 Toxicity

- Aquatic toxicity:
  - CAS: 107-98-2 1-methoxy-2-propanol
    - LC50 21,100 mg/l (daphnia) (Daphnia magna / 48 h) ≥1,000 mg/l (fish) (Oncorhynchus mykiss / 96 h)
  - CAS: 111-76-2 Ethylene glycol monobutyl ether
    - EC50 (static) 1.840 mg/l (alga) (Pseudokirchneriella subcapitata / 72 h (OECD 201))
    - LC50 (static) 1.474 mg/l (fish) (Oncorhynchus mykiss / 96 h (OECD 203))
    - NOEC 100 mg/l (daphnia) (Daphnia magna / 21 d (OECD 211)) ≥100 mg/l (fish) (Brachydanio rerio (OECD 204))

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. of page 6)
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 21.01.2020
Version number 1
Revision: 01.06.2015

Trade name: LUBA-print® 254/S

(Contd. of page 7)

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 07 04* other organic solvents, washing liquids and mother liquors

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
IMDG, IATA
1993 FLAMMABLE LIQUID, N.O.S. (1-METHOXY-2-PROFANOL)
FLAMMABLE LIQUID, N.O.S. (1-METHOXY-2-PROFANOL)

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

14.5 Environmental hazards:
Not applicable.

14.6 Special precautions for user
Warning: Flammable liquids.
Hazard identification number (Kemler code):
EMS Number: 30 F-E-S-E
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) N° 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.
  - H360D May damage the unborn child.

- 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
Trade name: LUBA-print® 254/S

Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity - oral – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3