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

- 1.1 Product identifier
- Trade name: LUBA-print® 346/F
- UFI: SQG0-T02R-700G-VAFY

- 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
  - Wax additive for paints and printing inks

- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  - MÜNZING CHEMIE GmbH
  - Münzingerstrasse 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.
    - Eye Dam. 1  H318 Causes serious eye damage.
    - STOT SE 3  H336 May cause drowsiness or dizziness.
    - Aquatic Chronic 3  H412 Harmful to aquatic life with long lasting effects.

- 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:
  - 2-methylpropan-1-ol
  - n-butyl acetate
  - Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics

- Hazard statements
  - H226 Flammable liquid and vapour.
  - H318 Causes serious eye damage.
  - H336 May cause drowsiness or dizziness.
  - H412 Harmful to aquatic life with long lasting effects.

- 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].

(Contd. on page 2)
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: 123-86-4</th>
<th>n-butyl acetate</th>
<th>20-50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 204-658-1</td>
<td>Flamm.: Liq. 3, H226; STOT SE 3, H336</td>
<td></td>
</tr>
<tr>
<td>Regnr.: 01-2119485493-29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EC number: 927-241-2</th>
<th>Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, &lt;2% aromatics</th>
<th>20-50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regnr.: 01-2119471843-32</td>
<td>Flamm.: Liq. 3, H226; Asp. Tox 1, H304; STOT SE 3, H336; Aquatic Chronic 3, H412</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 78-83-1</th>
<th>2-methylpropyl alcohol</th>
<th>5-10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 201-148-0</td>
<td>Flamm.: Liq. 3, H226; Eye Dam. 1, H318; Skin Irrit. 2, H315; STOT SE 3, H335-H336</td>
<td></td>
</tr>
<tr>
<td>Regnr.: 01-2119484609-23</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

(Contd. on page 3)
5.3 Advice for firefighters

- Keep away from ignition sources.
- Wear protective clothing.
- Wear protective equipment. Keep unprotected persons away.
- Do not allow to penetrate the ground/soil.
- Inform respective authorities in case of seepage into water course or sewage system.
- Do not allow to enter sewers/surface or ground water.
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Ensure adequate ventilation.
- Do not flush with water or aqueous cleansing agents.
- Protect against electrostatic charges.

6.2 Environmental precautions:

- Do not allow to penetrate the ground/soil.
- Inform respective authorities in case of seepage into water course or sewage system.
- Do not allow to enter sewers/surface or ground water.
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Ensure adequate ventilation.
- Do not flush with water or aqueous cleansing agents.
- Protect against electrostatic charges.

6.3 Methods and material for containment and cleaning up:

- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Ensure adequate ventilation.
- Do not flush with water or aqueous cleansing agents.
- Protect against electrostatic charges.

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.
- 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:

<table>
<thead>
<tr>
<th>CAS: 123-86-4 n-butyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEL</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 78-83-1 2-methylpropan-1-ol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEL</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

#### DNELs

<table>
<thead>
<tr>
<th>CAS: 123-86-4 n-butyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inhalative</strong></td>
</tr>
<tr>
<td>worker, short-term exposure, local effects</td>
</tr>
<tr>
<td>consumer, short-term exposure, local effects</td>
</tr>
<tr>
<td>960 mg/m³ (human)</td>
</tr>
<tr>
<td>102.34 mg/m³ (human)</td>
</tr>
<tr>
<td>859.7 mg/m³ (human)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cycles, &lt;2% aromatics</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oral</strong></td>
</tr>
<tr>
<td>worker, long-term exposure, systemic effects</td>
</tr>
<tr>
<td>consumer, long-term exposure, systemic effects</td>
</tr>
<tr>
<td><strong>Inhalative</strong></td>
</tr>
<tr>
<td>worker, long-term exposure, systemic effects</td>
</tr>
<tr>
<td>consumer, long-term exposure, systemic effects</td>
</tr>
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<table>
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<tr>
<td>worker, long-term exposure, systemic effects</td>
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<tr>
<td>consumer, long-term exposure, systemic effects</td>
</tr>
<tr>
<td><strong>Inhalative</strong></td>
</tr>
<tr>
<td>worker, long-term exposure, systemic effects</td>
</tr>
</tbody>
</table>

#### PNECs

<table>
<thead>
<tr>
<th>CAS: 123-86-4 n-butyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>fresh water</strong></td>
</tr>
<tr>
<td><strong>marine water</strong></td>
</tr>
<tr>
<td><strong>soil</strong></td>
</tr>
<tr>
<td><strong>sediment (fresh water)</strong></td>
</tr>
<tr>
<td><strong>sediment (marine water)</strong></td>
</tr>
<tr>
<td><strong>sewage treatment plant</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 78-83-1 2-methylpropan-1-ol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>fresh water</strong></td>
</tr>
<tr>
<td><strong>marine water</strong></td>
</tr>
<tr>
<td><strong>soil</strong></td>
</tr>
<tr>
<td><strong>sediment (fresh water)</strong></td>
</tr>
<tr>
<td><strong>sediment (marine water)</strong></td>
</tr>
<tr>
<td><strong>sewage treatment plant</strong></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:**
  - Keep away from foodstuffs, beverages and feed.

(Contd. on page 5)
Recommended thickness of the material: 0.5 mm

Trade name: LUBA-print® 346/F

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/ the substance/ the 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 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 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: Specific type
  - Odour threshold: Not determined.
- **pH-value:**
  - Not determined.
- **Change in condition**
  - Melting point/freezing point: Undetermined.
  - Initial boiling point and boiling range: ≈ 107 °C (2-methylpropan-1-ol)
- **Flash point:**
  - Not applicable.
- **Ignition temperature:**
  - > 200 °C (01-2119471843-32)
- **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.

(Contd. on page 6)
· Explosion limits:
  · Lower: ≈ 0.6 Vol % (01-2119471843-32)
  · Upper: ≈ 7.5 Vol % (n-butyl acetate)
· Oxidising properties: None
· Vapour pressure: Not determined.
· Density at 20 °C: ≈ 0.83 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: ≈ 29 mPas (DIN EN ISO 3219)
  · Kinematic at 40 °C: > 20.5 mm²/s (DIN EN ISO 51562)
· 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
  · Flammable vapour-air mixtures may develop if stored in large receptacles and above room temperature.
· 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.

**CAS: 123-86-4 n-butyl acetate**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>13,100 mg/kg   (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>14,100 mg/kg   (rabbit)</td>
</tr>
<tr>
<td>Inhalative LC50/4h</td>
<td>&gt;21 mg/l (rat)</td>
</tr>
</tbody>
</table>

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>3,000 mg/kg    (rat) (OECD 401)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>&gt;5,000 mg/kg   (rabbit) (OECD 402)</td>
</tr>
</tbody>
</table>

**CAS: 78-83-1 2-methylpropan-1-ol**

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>2,460 mg/kg    (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>2,460 mg/kg    (rabbit) (OECD 402)</td>
</tr>
<tr>
<td>Inhalative LC50/4h</td>
<td>24.6 mg/l (rat)</td>
</tr>
</tbody>
</table>
Harmful to aquatic organisms

(Contd. of page 6)

Additional ecological information:

12.1 Toxicity

<table>
<thead>
<tr>
<th>Cas</th>
<th>EC50</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>&gt;10.7 mg/l (alga) (green alga / 72 h)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>44 mg/l (daphnia) (Daphnia magna / 48 h)</td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>18 mg/l (fish) (Pimephales promelas / 96 h)</td>
<td></td>
</tr>
<tr>
<td>IC50</td>
<td>356 mg/l (bacteria) (Tetrahymena / 40 h)</td>
<td></td>
</tr>
<tr>
<td>NOEC</td>
<td>200 mg/l (alga) (green alga)</td>
<td></td>
</tr>
</tbody>
</table>

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics

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:

According to 1907/2006/EC, Article 31, 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.
Harmful to aquatic organisms

(Contd. on page 8)
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 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: 1993 FLAMMABLE LIQUID, N.O.S. (BUTYL ACETATES, Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics)
  
  IMDG, IATA: FLAMMABLE LIQUID, N.O.S. (BUTYL ACETATES, Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics)

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

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

- 14.5 Environmental hazards:
  
  Not applicable.

- 14.6 Special precautions for user
  
  Hazard identification number (Kemler code): 30
  
  EMS Number: F,E,S,E
  
  Stowage Category: A

- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
  
  Not applicable.
Trade name: LUBA-print® 346/F

(Contd. of page 8)

- Transport/Additional information:
  - ADR/RID/ADN
    - Limited quantities (LQ) 5L
    - Transport category 3
    - Tunnel restriction code D/E
  - UN "Model Regulation": UN 1993 FLAMMABLE LIQUID, N.O.S. (BUTYL ACETATES, HYDROCARBONS, C9-C10, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS), 3, III

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
  - H226 Flammable liquid and vapour.
  - H304 May be fatal if swallowed and enters airways.
  - H315 Causes skin irritation.
  - H318 Causes serious eye damage.
  - H335 May cause respiratory irritation.
  - H336 May cause drowsiness or dizziness.
  - H412 Harmful to aquatic life with long lasting effects.

- 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)

(Contd. on page 10)
Trade name: LUBA-print® 346/F

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
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

GB