SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name: PROTECTING LAQUER
Cat. No. 49900012
Container size: 400 ml

Relevant identified uses of the substance or mixture and uses advised against
Application: For protection of materialographic specimens.

Details of the supplier of the safety data sheet
Supplier: Struers ApS
Pederstrupvej 84
DK-2750 Ballerup
Tel: +45 44 600 800

Responsible for material safety data sheet authoring: Responsible for material safety data sheet authoring: DHI
Any questions to the contents of this material safety data sheet should be sent to: struers@struers.dk

Emergency telephone number
National Capital Poison Center: 1-800-222-1222
Infotrac:
1-800-535-5053
Struers US:
1-440-871-0071
SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA 2012:
- Flammable Aerosol Category 1
- Eye irritant Category 2A
- Category 3 Target organ toxicant - Single Exposure (narcotic effects)

Label elements

Danger

H222  Extremely flammable aerosol.
H229  Pressurised container: May burst if heated.
H319  Causes serious eye irritation.
H336  May cause drowsiness or dizziness.
P210  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P211  Do not spray on an open flame or other ignition source.
P251  Pressurized container: Do not pierce or burn, even after use.
P280  Wear protective gloves, eye and face protection.
P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P410 + P412  Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P261  Avoid breathing gas, fume, vapours or spray.
P264  Wash contaminated skin thoroughly after handling.
P271  Use only outdoors or in a well-ventilated area.
P273  Avoid release to the environment.
P304 + P340  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312  Call a poison center/doctor if you feel unwell.
P337 + P313  If eye irritation persists: Get medical advice/attention.
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
P405  Store locked up.
P501  Dispose of contents/container in accordance with local regulations.

Other hazards

The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures.

PBT/vPvB: No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
**Mixtures**

The product contains: organic solvent, binders and propellants. (*)

**OSHA 2012:**

<table>
<thead>
<tr>
<th>%</th>
<th>CAS-No.:</th>
<th>EC No.:</th>
<th>REACH Reg. No:</th>
<th>Chemical name:</th>
<th>Hazard classification:</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-&lt;50</td>
<td>67-64-1</td>
<td>200-662-2</td>
<td>01-2119471330-49-xxxx</td>
<td>Acetone</td>
<td>Flammable Liquid</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye irritant Category 2A</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 3 Target organ toxicant</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Single Exposure (narcotic effects)</td>
<td></td>
</tr>
<tr>
<td>12.5-&lt;20</td>
<td>74-98-6</td>
<td>200-827-9</td>
<td>01-2119486944-21-xxxx</td>
<td>Propane</td>
<td>Flammable Gas Category 1</td>
<td>U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Press. Gas</td>
<td></td>
</tr>
<tr>
<td>12.5-&lt;20</td>
<td>106-97-8</td>
<td>203-448-7</td>
<td>01-2119474691-32-xxxx</td>
<td>Butane</td>
<td>Flammable Gas Category 1</td>
<td>C; U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Press. Gas</td>
<td></td>
</tr>
<tr>
<td>5-&lt;10</td>
<td>1330-20-7; 100-41-4</td>
<td>905-588-0</td>
<td>01-2119486136-34-xxxx</td>
<td>Xylene, Ethylbenzene</td>
<td>Flammable Liquid Category 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Dermal Toxicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Inhalation Toxicity Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Irritant Category 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye irritant Category 2A</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 3 Target organ toxicant, Single Exposure (respiratory tract irritation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 2 Target organ toxicant, Repeated Exposure Aspiration Toxicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aspiration Toxicity Category 1</td>
<td></td>
</tr>
<tr>
<td>5-&lt;10</td>
<td>108-65-6</td>
<td>203-603-9</td>
<td>01-2119475791-29-xxxx</td>
<td>2-Methoxy-1-methylethyl acetate</td>
<td>Flammable Liquid Category 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 3 Target organ toxicant</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Single Exposure (narcotic effects)</td>
<td></td>
</tr>
<tr>
<td>5-&lt;10</td>
<td>128601-23-0; 64742-95-6</td>
<td>918-668-5</td>
<td>01-2119455851-35-xxxx</td>
<td>Hydrocarbons, C9, aromatics</td>
<td>Flammable Liquid Category 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 3 Target organ toxicant, Single Exposure (respiratory tract irritation) Category 3 Target organ toxicant</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Single Exposure (narcotic effects) Aspiration Toxicity Category 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic Toxicity Category 2</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

Description of first aid measures

Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

Inhalation: Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring along these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions. Do not induce vomiting.

Most important symptoms and effects, both acute and delayed

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.
SECTION 5: FIREFIGHTING MEASURES

Extinguishing media:
Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture:
Specific hazards: The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. Aerosol containers can explode when heated, due to excessive pressure build-up.

Advice for firefighters:
Protective equipment for firefighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Protective equipment: Do not smoke or use open fire, or other sources of ignition. Avoid inhalation of vapors and aerosols and contact with skin and eyes. For personal protection, see section 8.
Emergency procedures: No specific recommendations. For personal protection, see section 8.

Environmental precautions:
Environmental precautions: Avoid discharge into water courses or onto the ground.

Methods and material for containment and cleaning up:
Spill Cleanup Methods: Large quantities should not be discharged into the drain but removed with absorbing material. Do not use sawdust or other combustible material.

Reference to other sections:
References: For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:
Safe handling advice: Avoid inhalation of vapors and contact with skin and eyes. Observe good chemical hygiene practices.
Technical measures: Do not smoke or use open fire or other sources of ignition.
Technical precautions: Mechanical ventilation may be required.

Conditions for safe storage, including any incompatibilities:
Storage conditions: Store in a cool and well-ventilated place. Avoid contact with oxidizing agents.
Specific end use(s): Specific use(s): No information available.
### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

**Occupational exposure limits:**

<table>
<thead>
<tr>
<th>CAS-No.:</th>
<th>Chemical name:</th>
<th>As:</th>
<th>Exposure limits:</th>
<th>Type:</th>
<th>Notes:</th>
<th>References:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7</td>
<td>Xylenes, all isomers</td>
<td>-</td>
<td>100 ppm</td>
<td>TWA</td>
<td>-</td>
<td>OSHA</td>
</tr>
<tr>
<td>123-86-4</td>
<td>n-Butyl-acetate</td>
<td>-</td>
<td>150 ppm</td>
<td>TWA</td>
<td>-</td>
<td>OSHA</td>
</tr>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>-</td>
<td>1000 ppm</td>
<td>TWA</td>
<td>-</td>
<td>OSHA</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td>-</td>
<td>100 ppm</td>
<td>TWA</td>
<td>-</td>
<td>OSHA</td>
</tr>
<tr>
<td>74-98-6</td>
<td>Propane</td>
<td>-</td>
<td>1000 ppm</td>
<td>TWA</td>
<td>-</td>
<td>OSHA</td>
</tr>
<tr>
<td>123-86-4</td>
<td>Butyl acetates, all isomers</td>
<td>-</td>
<td>50 ppm</td>
<td>TWA</td>
<td>-</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>150 ppm</td>
<td>STEL</td>
<td>15min</td>
<td></td>
</tr>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>-</td>
<td>250 ppm</td>
<td>TWA</td>
<td>A4; BEI</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>500 ppm</td>
<td>STEL</td>
<td>A4; BEI</td>
<td>15min</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td>-</td>
<td>20 ppm</td>
<td>TWA</td>
<td>A3; BEI</td>
<td>ACGIH</td>
</tr>
<tr>
<td>74-98-6</td>
<td>Propane</td>
<td>-</td>
<td>200 ppm</td>
<td>TWA</td>
<td>Simple asphyxiant (D); EX</td>
<td>ACGIH</td>
</tr>
<tr>
<td>106-97-8</td>
<td>Butane, all isomers</td>
<td>-</td>
<td>1000 ppm</td>
<td>STEL</td>
<td>EX; 15min</td>
<td>ACGIH</td>
</tr>
<tr>
<td>1330-20-7</td>
<td>Xylene (o, m &amp; p isomers)</td>
<td>-</td>
<td>100 ppm</td>
<td>TWA</td>
<td>A4; BEI</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>150 ppm</td>
<td>STEL</td>
<td>A4; BEI</td>
<td>15min</td>
</tr>
</tbody>
</table>

**Notes:**
- A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans.
- A4: Not Classifiable as a Human Carcinogen.
- EX: Explosion hazard.
- BEI: Biological Exposure Index.

#### Biological Limit Values:

<table>
<thead>
<tr>
<th>CAS-No.:</th>
<th>Chemical name:</th>
<th>As:</th>
<th>Exposure limits:</th>
<th>Sampling time:</th>
<th>Notes:</th>
<th>References:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1330-20-7</td>
<td>Xylenes, technical or commercial grades</td>
<td></td>
<td>Methylhippuric acids in urine</td>
<td>End of shift</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td></td>
<td>Acetone in urine</td>
<td>1.5 g/g CRe</td>
<td>End of shift</td>
<td>Na</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td></td>
<td>Ethyl benzene in end-exhaled air</td>
<td>25 mg/L</td>
<td>End of shift</td>
<td>-</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td></td>
<td>Ethyl benzene in end-exhaled air</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Exposure controls

Engineering measures: Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mist. Provide easy access to water supply or an emergency shower.

Personal protection: Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory equipment: In case of inadequate ventilation: Use respiratory equipment with combination filter, type AX/P2.

Hand protection: Butyl rubber gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Eye protection: Wear goggles/face shield.

Skin protection: Wear apron or protective clothing in case of contact.

Environmental Exposure Controls: Not available.
**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form:</strong></td>
<td>Aerosol.</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Characteristic.</td>
</tr>
<tr>
<td><strong>Odor threshold:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Melting point:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Boiling point:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas):</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Explosion limits:</strong></td>
<td>1.5-13.0 vol%</td>
</tr>
<tr>
<td><strong>Vapor pressure:</strong></td>
<td>8300 hPa (68°F)</td>
</tr>
<tr>
<td><strong>Vapor density:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density:</strong></td>
<td>0.77</td>
</tr>
<tr>
<td><strong>Solubility:</strong></td>
<td>Insoluble in water (&lt;1%).</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature (°F):</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature (°F):</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Explosive properties:</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Oxidizing properties:</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Other information**

**Other data:** Volatile Organic Compound (VOC): 683 g/l/684.9 g/l (calculated)
SECTION 10: STABILITY AND REACTIVITY

**Reactivity**
Reactivity: No data available.

**Chemical stability**
Stability: Stable under normal temperature conditions.

**Possibility of hazardous reactions**
Hazardous Reactions: No data available.

**Conditions to avoid**
Conditions/materials to avoid: Avoid exposing aerosol containers to high temperatures or direct sunlight.

**Incompatible materials**
Incompatible materials: No information available.

**Hazardous decomposition products**
Hazardous decomposition products: No information available.
SECTION 11: TOXICOLOGICAL INFORMATION

**Information on toxicological effects**

- **Acute Toxicity (Oral):** Based on available data the classification criteria are not met.
- **Acute Toxicity (Dermal):** Based on available data the classification criteria are not met.
- **Acute Toxicity (Inhalation):** Based on available data the classification criteria are not met.
- **Skin Corrosion/Irritation:** Based on available data the classification criteria are not met.
- **Serious eye damage/irritation:** Causes serious eye irritation.
- **Respiratory or skin sensitization:** Based on available data the classification criteria are not met.
- **Germ cell mutagenicity:** Based on available data the classification criteria are not met.
- **Carcinogenicity:**
  - Based on available data the classification criteria are not met.
  - National Toxicology Program (NTP): No.
  - IARC Cancer Review: Group 3 for Xylenes.
  - OSHA: No.
- **Reproductive Toxicity:** Based on available data the classification criteria are not met.
- **STOT - Single exposure:** May cause drowsiness or dizziness.
- **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.
- **Inhalation:** Vapors and spray mist may irritate throat and respiratory system and cause coughing.
- **Skin contact:** Repeated exposure may cause skin dryness or cracking.
- **Ingestion:** Delayed symptoms include nausea, vomiting, headache and dizziness.
- **Specific effects:** Frequent inhalation of even small concentrations may cause irritability, fatigue and memory failure and eventually permanent damage to the nervous system, including the brain.
SECTION 12: ECOLOGICAL INFORMATION

**Toxicity**

Ecotoxicity: Harmful to aquatic life with long lasting effects. The product contains volatile, organic compounds which have a photochemical ozone creation potential.

**Persistence and degradability**

Degradability: The degradability of the product has not been stated.

**Bioaccumulative potential**

Bioaccumulative potential: No data available on bioaccumulation.

**Mobility in soil**

Mobility: No data available.

**Results of PBT and vPvB assessment**

PBT/vPvB: No information available.

**Other adverse effects**

Other adverse effects: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**

Waste from residues: Dispose of waste and residues in accordance with local authority requirements. Do not puncture or incinerate even when empty.

RCRA: Waste number U002 (Acetone)

RCRA: Waste number: U239 (Xylene)

Contaminated packaging: Dispose of waste and residues in accordance with local authority requirements. Empty aerosol containers before disposal.
SECTION 14: TRANSPORT INFORMATION

The product is covered by international regulation on the transport of dangerous goods (IMDG, IATA).

**UN number**

UN-No: 1950

**UN proper shipping name**

Proper Shipping Name: AEROSOLS

Additional IMDG information:
EmS: F-D, S-U
MFAG: 1

**Transport hazard class(es)**

Class: 2.1

**Packing group**

PG: -

**Environmental hazards**

Marine pollutant: No.
Environmentally Hazardous substance: No.

**Special precautions for user**

Special precautions: None known.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Transport in bulk: Not relevant.
SAFETY DATA SHEET

Product name: PROTECTING LAQUER
Revision Date: 2019-06-19
Document No.: M0033
Page: 13/14
Print date: 2019-06-19
SDS-ID: US-EN/18.2

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Special provisions: State and local regulation may apply.

TSCA: Listed.

NFPA Rating: Health:2  Fire:4  Reactivity:0  Other:-

SARA Section 302: No.
SARA Section 304: Yes.
SARA Section 313: Yes.
SARA (311/312) Hazard categories: Yes.
CAA: Yes. (Xylenes)
California Proposition 65: (Ethylbenzene)

National regulation:
The following lists have been checked:
Threshold Limit Values (2018), ACGIH, by the American Conference on Governmental Industrial Hygienists.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 40, part 261.33. Identification and listing of hazardous waste.
SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 3.
The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Additional information: Classification according to HCS 2012:
Calculation method.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Agern Allé 5, DK-2970 Hørsholm, Denmark.