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

Product identifier

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.

Uses advised against: No specific uses advised against are identified. (*)

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 Category 2</td>
<td>Eye irritant Category 2A Category 3 Target organ toxicant Single Exposure (narcotic effects)</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 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 Press. Gas</td>
<td>C; U</td>
</tr>
<tr>
<td>5-&lt;10</td>
<td>1330-20-7; 905-588-0</td>
<td>01-2119486136-34-xxxx</td>
<td>Xylene, Ethylbenzene</td>
<td>Flammable Liquid Category 3 Acute Dermal Toxicity Category 4 Acute Inhalation Toxicity Category 4 Skin Irritant Category 2 Eye irritant Category 2A Category 3 Target organ toxicant, Single Exposure (respiratory tract irritation) Category 2 Target organ toxicant, Repeated Exposure Aspiration Toxicity Category 1</td>
<td></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 2-Methoxy-1-methylethyl acetate</td>
<td>Flammable Liquid Category 3 Category 3 Target organ toxicant Single Exposure (narcotic effects)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-&lt;10</td>
<td>128601-23-0; 64742-95-6</td>
<td>01-2119455851-35-xxxx</td>
<td>Hydrocarbons, C9, aromatics</td>
<td>Flammable Liquid Category 3 Category 3 Target organ toxicant, Single Exposure (respiratory tract irritation) Category 3 Target organ toxicant Single Exposure (narcotic effects) Aspiration Toxicity Category 1 Aquatic Chronic Toxicity Category 2</td>
<td></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

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 fire-fighters: 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

For non-emergency personnel: 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.

For emergency responders: 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>435 mg/m³</td>
<td>TWA</td>
<td>-</td>
</tr>
<tr>
<td>123-86-4</td>
<td>n-Butyl-acetate</td>
<td>-</td>
<td>150 ppm</td>
<td>710 mg/m³</td>
<td>TWA</td>
<td>-</td>
</tr>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>-</td>
<td>1000 ppm</td>
<td>2400 mg/m³</td>
<td>TWA</td>
<td>-</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td>-</td>
<td>100 ppm</td>
<td>435 mg/m³</td>
<td>TWA</td>
<td>-</td>
</tr>
<tr>
<td>74-98-6</td>
<td>Propane</td>
<td>-</td>
<td>1000 ppm</td>
<td>1800 mg/m³</td>
<td>TWA</td>
<td>-</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></td>
<td></td>
<td></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>Methylhippuric acids in urine</td>
<td>1.5 g/g Cre</td>
<td>End of shift</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>Acetone in urine</td>
<td>25 mg/L</td>
<td>End of shift</td>
<td>Na</td>
<td>-</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td>Ethyl benzene in end-exhaled air</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethyl benzene</td>
<td>Ethyl benzene in end-exhaled air</td>
<td></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 ANSI 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.

Thickness: 0.4 mm
Breakthrough time: 42 min (Xylene, Ethylbenzene) (*)

**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>
<tr>
<td><strong>Other data:</strong></td>
<td>Volatile Organic Compound (VOC): 683 g/l/684.9 g/l (calculated)</td>
</tr>
</tbody>
</table>
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: TOXICOCHEMICAL INFORMATION

#### Information on toxicological effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute Toxicity (Oral):</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Acute Toxicity (Dermal):</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Acute Toxicity (Inhalation):</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Skin Corrosion/Irritation:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Serious eye damage/irritation:</strong></td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td><strong>Respiratory or skin sensitization:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Carcinogenicity:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>National Toxicology Program (NTP): No.</td>
<td></td>
</tr>
<tr>
<td>IARC Cancer Review: Group 2B for Ethylbenzene.</td>
<td></td>
</tr>
<tr>
<td>IARC Cancer Review: Group 3 for Xylenes.</td>
<td></td>
</tr>
<tr>
<td>OSHA: No.</td>
<td></td>
</tr>
<tr>
<td><strong>Reproductive Toxicity:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>STOT - Single exposure:</strong></td>
<td>May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td><strong>STOT - Repeated exposure:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Aspiration hazard:</strong></td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td><strong>Inhalation:</strong></td>
<td>Vapors and spray mist may irritate throat and respiratory system and cause coughing.</td>
</tr>
<tr>
<td><strong>Skin contact:</strong></td>
<td>Repeated exposure may cause skin dryness or cracking.</td>
</tr>
<tr>
<td><strong>Ingestion:</strong></td>
<td>Delayed symptoms include nausea, vomiting, headache and dizziness.</td>
</tr>
<tr>
<td><strong>Specific effects:</strong></td>
<td>Frequent inhalation of even small concentrations may cause irritability, fatigue and memory failure and eventually permanent damage to the nervous system, including the brain.</td>
</tr>
</tbody>
</table>
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.
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 (2019), 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: 1, 8.
The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Allan Vorup

Abbreviations and acronyms used in the safety data sheet:
PBT = Persistent, Bioaccumulative and Toxic.
vPvB = very Persistent and very Bioaccumulative.

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.