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

Product identifier

Product name: PRONTOFIX HARDENER
Cat. No. 40200108, 40200110 (and mixed with ProntoFix Accelerator in the recommended ratio)

Container size: 280 ml, 500 ml

Relevant identified uses of the substance or mixture and uses advised against

Application: For embedding and impregnation 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: 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:
Acute Oral Toxicity Category 4
Acute Inhalation Toxicity Category 4
Skin Corrosive Category 1A
Serious Eye Damage Category 1
Skin Sensitizer Category 1
Category 2 reproductive toxicant
Aquatic Acute Toxicity Category 1
Aquatic Chronic Toxicity Category 1
SAFETY DATA SHEET

Product name: PRONTOFIX HARDENER  
Revision Date: 2020-02-18  
Document No.: M0225  

Label elements

Danger

H302 + H332  Harmful if swallowed or if inhaled.
H314  Causes severe skin burns and eye damage.
H317  May cause an allergic skin reaction.
H361  Suspected of damaging fertility or the unborn child.
H410  Very toxic to aquatic life with long lasting effects.

P280  Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
P310  Immediately call a poison center/doctor.
P501  Dispose of contents/container in accordance with local regulations.

P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P260  Do not breathe dust/fume/gas/mist/vapours/spray.
P261  Avoid breathing dust/fume/gas/mist/vapours/spray.
P264  Wash hands thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P271  Use only outdoors or in a well-ventilated area.
P272  Contaminated work clothing should not be allowed out of the workplace.
P273  Avoid release to the environment.
P301 + P312  IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P304 + P340  IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313  IF skin exposed or concerned: Get medical advice/attention.
P333 + P313  If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364  Take off contaminated clothing and wash it before reuse.
P391  Collect spillage.
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
P405  Store locked up.
Other hazards

Vapors are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung edema.

PBT/vPvB: Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

The product contains: Amines.
<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>
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<tbody>
<tr>
<td>15-&lt;40</td>
<td>98-54-4</td>
<td>202-679-0</td>
<td>01-2119489419-21-xxxx</td>
<td>4-tert-Butylphenol</td>
<td>Skin Irritant Category 2</td>
<td>Serious Eye Damage Category 1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Category 2 reproductive toxicant</td>
<td>Aquatic Acute Toxicity Category 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic Toxicity Category 1</td>
<td></td>
</tr>
<tr>
<td>10-&lt;25</td>
<td>1477-55-0</td>
<td>216-032-5</td>
<td>01-2119480150-50-xxxx</td>
<td>m-Phenylenebis (methylamine)</td>
<td>Acute Oral Toxicity Category 4</td>
<td>Acute Dermal Toxicity Category 4</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Inhalation Toxicity Category 4</td>
<td>Skin Corrosive Category 1B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Sensitizer Category 1</td>
<td>Aquatic Chronic Toxicity Category 3</td>
</tr>
<tr>
<td>15-&lt;25</td>
<td>90640-67-8</td>
<td>292-588-2</td>
<td>01-2119487919-13-xxxx</td>
<td>Amines, polyethylenepoly-, triethylenetetramine fraction</td>
<td>Acute Oral Toxicity Category 4</td>
<td>Acute Dermal Toxicity Category 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Corrosive Category 1B</td>
<td>Serious Eye Damage Category 1</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Skin Sensitizer Category 1</td>
<td>Aquatic Chronic Toxicity Category 3</td>
</tr>
<tr>
<td>10-&lt;20</td>
<td>15520-10-2</td>
<td>239-556-6</td>
<td>01-2119976310-41-xxxx</td>
<td>2-Methyl-1,5-pentamethylene diamine</td>
<td>Acute Oral Toxicity Category 4</td>
<td>Acute Dermal Toxicity Category 4</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Serious Eye Damage Category 1</td>
<td>Category 3 Target organ toxicant, Single Exposure (respiratory tract irritation)</td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

Description of first aid measures

Inhalation: Move injured person into fresh air immediately. Call an ambulance. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure. Bring these instructions.

Skin contact: Flush immediately with plenty of water and remove contaminated clothing. Call an ambulance, continue to rinse during transportation to hospital and bring these instructions.

Eye contact: Immediately flush with plenty of water. Remove any contact lenses and open eyes wide apart. Call an ambulance and continue flushing during transportation to hospital taking along these instructions.

Ingestion: Immediately call a Poison Center/doctor. Rinse mouth. Do not induce vomiting. Do not drink anything without first consulting a doctor. Have these instructions at hand.

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 foam, carbon dioxide, dry powder or water fog.

Special hazards arising from the substance or mixture

Specific hazards: During fire, health hazardous gases may be formed.

Advice for firefighters

Protective equipment for firefighters: Use air-supplied respirator, gloves and protective goggles.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid inhalation of vapors 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: Do not discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up

Spill Cleanup Methods: Dam and absorb spillages with sand, earth or other non-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: Wash hands before breaks and before smoking, eating or drinking.

Technical precautions: Local exhaust is recommended. First-aid equipment, including eye wash bottle, must be available at the work site.

Conditions for safe storage, including any incompatibilities

Storage conditions: Store in tightly closed original container in a dry, cool and well-ventilated place.

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>1477-55-0</td>
<td>m-Xylene a,o'-diamine</td>
<td>-</td>
<td>0.018 ppm</td>
<td>CLV</td>
<td>Skin</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

Exposure controls

Engineering measures: Mix and prepare in a place with efficient exhaust ventilation. An eye wash bottle must be available at the work site. Provide access to washing facilities including soap, skin cleanser and fatty cream. Observe Occupational Exposure Limits and minimize the risk of inhalation.

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 and work of brief duration, use suitable respiratory equipment. Use NIOSH-certified respirator with at least an APF 50. It is recommended to use respiratory equipment with combination filter, type ABEK

Hand protection: Use chemically impervious gloves. Use disposable gloves protecting against epoxy and amines along with cotton gloves closest to the skin. 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 splashes.

Hygiene measures: Remove contaminated clothing and wash the skin thoroughly with soap and water after work. When using do not eat, drink or smoke.

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

Information on basic physical and chemical properties

Form: Liquid.
Color: Yellowish.
Odor: Amine.
Odor threshold: Not available.
pH: Not available.
Melting point: Not available.
Boiling point: 180 - 300°C
Flash point: >83°C / >181.4°F (*)
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Explosion limits: Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Relative density: 0.99 - 1.00
Solubility: Partially soluble in water.
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°F): Not available.
Decomposition temperature (°F): Not available.
Viscosity: 115 - 200 mPa*s
Explosive properties: Not available.
Oxidizing properties: Not available.

Other information

Other data: No information available.
### SECTION 10: STABILITY AND REACTIVITY

**Reactivity**
- Reactivity: Reacts violently with strong oxidizing substances.

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

**Possibility of hazardous reactions**
- Hazardous Reactions: None under normal conditions.

**Conditions to avoid**
- Conditions/materials to avoid: Moisture, heating and strong oxidizing substances.

**Incompatible materials**

**Hazardous decomposition products**
- Hazardous decomposition products: When heated, toxic and corrosive vapors/gases may be formed.
SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

**Acute Toxicity (Oral):** Harmful if swallowed.
- m-Phenylenebis(methylamine):
  - LD$_{50}$ (Oral, Rat): 940 mg/kg
- 2-Methyl-1,5-pentamethylen-diamine:
  - LD$_{50}$ (Oral, Rat): 1690 mg/kg

**Acute Toxicity (Dermal):** Based on available data, the classification criteria are not met.
- m-Phenylenebis(methylamine):
  - LD$_{50}$ (Dermal, Rabbit): 2000 mg/kg
- 2-Methyl-1,5-pentamethylen-diamine:
  - LD$_{50}$ (Dermal, Rabbit): 1900 mg/kg

**Acute Toxicity (Inhalation):** Harmful if inhaled.

**Skin Corrosion/Irritation:** Causes severe burns.

**Serious eye damage/irritation:** Causes serious eye damage.

**Respiratory or skin sensitization:** May cause an allergic skin reaction.

**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.
- I.A.R.C. Monographs: No.
- OSHA: No.

**Reproductive Toxicity:** Suspected of damaging fertility or the unborn child.

**STOT - Single exposure:** May cause respiratory irritation.

**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 are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung edema.

**Ingestion:** Strongly corrosive. Even small amounts may be fatal. Symptoms are severe burning pains in mouth, throat and stomach.
SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: Very toxic to aquatic life with long lasting effects.

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: This product does not contain any PBT or vPvB substances.

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. Note that fully cured material is not considered as hazardous waste.

Contaminated packaging: Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

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

UN number

UN-No: 2735

UN proper shipping name

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (2-Methyl-1,5-pentamethylen-diamine, m-Phenylenebis(methylamine))

Transport hazard class(es)

Class: 8

Packing group

PG: I

Environmental hazards

Marine pollutant: Yes.

Environmentally Hazardous substance: Yes.

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

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: Not available.

NFPA Rating: Health: 3 Fire: 1 Reactivity: 0 Other:-

SARA Section 302: No.
SARA Section 304: No.
SARA Section 313: No.
SARA (311/312) Hazard categories: Yes.

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.
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.