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

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:

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: 2019-05-08  
Document No.: M0225  
Page: 2  
Print date: 2019-05-08  
SDS-ID: US-EN/1.2

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**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/docotr.

**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>Chemical name</th>
<th>Hazard classification</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-&lt;40</td>
<td>4-tert-Butylphenol</td>
<td>Skin Irritant Category 2</td>
<td>Serous Eye Damage Category 1, Category 2 reproductive toxicant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Acute Toxicity Category 1</td>
<td>Aquatic Chronic Toxicity Category 1</td>
</tr>
<tr>
<td>10-&lt;25</td>
<td>m-Phenylenebis (methylamine)</td>
<td>Acute Oral Toxicity Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute Dermal Toxicity Category 4</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Acute Inhalation Toxicity Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin Corrosive Category 1B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin Sensitizer Category 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic Toxicity Category 3</td>
<td></td>
</tr>
<tr>
<td>15-25</td>
<td>Amines, polyethylenepoly-, triethylenetetramine fraction</td>
<td>Acute Oral Toxicity Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute Dermal Toxicity Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin Corrosive Category 1B</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Serious Eye Damage Category 1B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin Sensitizer Category 1</td>
<td></td>
</tr>
<tr>
<td>10-20</td>
<td>2-Methyl-1,5-pentamethylene-diamine</td>
<td>Acute Oral Toxicity Category 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute Dermal Toxicity Category 4</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Acute Inhalation Toxicity Category 4</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Skin Corrosive Category 1A</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Serious Eye Damage Category 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Category 3 Target organ toxicant, Single Exposure (respiratory tract irritation)</td>
<td></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**

**Protective equipment:**
Avoid inhalation of vapors 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:**
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,a'-diamine</td>
<td>-</td>
<td>0.1 mg/m3</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 along with cotton gloves closest to the skin. Laminate (PE/EVOH) gloves are recommended. 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: Not available.
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<sub>50</sub> (Oral, Rat): 940 mg/kg
- 2-Methyl-1,5-pentamethylene-diamine:
  - LD<sub>50</sub> (Oral, Rat): 1690 mg/kg

**Acute Toxicity (Dermal):** Based on available data, the classification criteria are not met.
- m-Phenylenebis(methylamine):
  - LD<sub>50</sub> (Dermal, Rabbit): 2000 mg/kg
- 2-Methyl-1,5-pentamethylene-diamine:
  - LD<sub>50</sub> (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-pentamethylene-diamine, m-Phenylenbis(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.
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 (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: 8.
The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

[Signature]

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.