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 Australia
27 Mayneview Street
Milton QLD 4064, Australia

Supplier in NZ: Malcolm Total Logistics
39 Richard Pearse Drive
Airport Oaks, Auckland
New Zealand
Tel:+64 9 2573564

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

Emergency telephone number

New Zealand Poisons Centre: 0800 764 766 (24 hours a day, 7 days a week).

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

HSNO:
6.1D
8.2A
8.3A
6.5B
9.1C
9.1D
9.3C

Label elements

Danger

Contains:
4-tert-Butylphenol (15-%40%)
m-Phenylenebis(methylamine) (15-%25%)
2-Methyl-1,5-pentamethylene-diamine (15-%<20%)
Amines, polyethylenepoly-, triethylenetetramine fraction (15-%<25%)
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.
H433 Harmful to terrestrial vertebrates.

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): Remove/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 or doctor/physician.
P501 Dispose of contents/container in accordance with local regulations.

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 or doctor/physician if you feel unwell.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before re-use.
P391 Collect spillage.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Other hazards
Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema.
PBT/vPvB: Not Classified as PBT/vPvB by current EU criteria.
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>-</td>
<td>4-tert-Butylphenol</td>
<td>6.1D (H302)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.1D (H312)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.3A (H315)</td>
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<td></td>
<td></td>
<td></td>
<td>6.4A (H319)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.1D (H401)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.1D (H413)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.3C (H433)</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>6.1D (H302)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.1D (H312)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.1D (H332)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.2B (H314)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.5B (H317)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.1C (H412)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>triethylenetetramine fraction</td>
<td>6.1D (H312)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.2B (H314)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>8.3A (H318)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.5B (H317)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>9.1C (H412)</td>
<td></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-pentamethylenediamine</td>
<td>6.1D (H302)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.1D (H312)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.1D (H332)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.2A (H314)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.3A (H318)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.9 (H335)</td>
<td></td>
</tr>
</tbody>
</table>

Reference: The full text for all hazard statements is displayed in section 16.
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 oedema (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. Bring 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, gases hazardous to health may be formed.

Advice for firefighters

Protective measures 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 vapours 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

Methods for cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material.

Reference to other sections

Reference: 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 vapours 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>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>
</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. Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation.

Personal protection: Personal protection equipment should be chosen according to the AS/NZS 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. It is recommended to use respiratory equipment with combination filter, type ABEK

Hand protection: 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**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Yellowish</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Amine</td>
</tr>
<tr>
<td><strong>Odour 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>180 - 300°C</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>&gt;83°C / &gt;181.4°F</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>Not available</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>0.99 - 1.00</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Partially soluble in water</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature (°C)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Decomposition temperature (°C)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>115 - 200 mPa*s</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>Not available</td>
</tr>
</tbody>
</table>

**Other information**

**Other data:**

No information available.
SECTION 10: STABILITY AND REACTIVITY

Reactivity
Reactivity: Reacts violently with strong oxidising 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 oxidising substances.

Incompatible materials

Hazardous decomposition products
Hazardous decomposition products: When heated, toxic and corrosive vapours/gases may be formed.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute Toxicity (Oral): Harmful if swallowed.
- m-Phenylenebis(methylamine):
  LD50 (Oral, Rat): 940 mg/kg
- 2-Methyl-1,5-pentamethylen-diamine:
  LD50 (Oral, Rat): 1690 mg/kg

Acute Toxicity (Dermal): Harmful in contact with skin.

Acute Toxicity (Inhalation): Harmful if inhaled.

Skin Corrosion/Irritation: Causes severe burns.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitisation: 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.

Reproductive Toxicity: Based on available data the classification criteria are not met.

STOT - Single exposure: Based on available data the classification criteria are not met.

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: Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema.

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: Toxic to aquatic life. Harmful 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. Waste is classified as hazardous waste. Note that fully cured material is not considered as hazardous waste.

L-Code: 16 05 08

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, ADR/RID).

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-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.

SECTION 15: REGULATORY INFORMATION

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

Special provisions: As a general rule, persons under 15 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions. New Zealand Inventory of Chemical Substances (NZIoC): Not determined.

National regulation:


Hazardous Substances (Classification) Notice 2017.

Hazardous Substances (Safety Data Sheets) Notice 2017.

Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 (the GRWM Regulations).

New Zealand Waste List.
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:

- The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Allan Vorup

Additional information:
Classification according to HSNO:
Calculation method.

Wording of H-statements:
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.
H433 Harmful to terrestrial vertebrates.

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.