

SAFETY DATA SHEET

PRONTOFIX HARDENER



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : PRONTOFIX HARDENER
Cat. No. : 40200110, 50209130
Container size : 280 ml, 500 ml
Product type : Liquid.
Other means of identification : Not available.

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

Product use : For embedding and impregnation of materialographic specimens
Area of application : Professional applications.

Uses advised against

None identified.

1.3 Details of the supplier of the safety data sheet

Struers Ltd.
Unit 11 Evolution @ the AMP
Whittle Way
Catcliffe Rotherham S60 5BL
United Kingdom
Telephone: +44 (0) 845 604 6664
e-mail address of person responsible for this SDS : sdsquestions@struers.dk

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : NHS: 111

Supplier

Telephone number : +45 44 600 800 (Only during office hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Skin Corr. 1A, H314
Eye Dam. 1, H318
Skin Sens. 1, H317
Repr. 2, H361f
Aquatic Chronic 1, H410

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
See Section 16 for the full text of the H statements declared above.



SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms

:



Signal word

: Danger

Hazard statements

: H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H361f - Suspected of damaging fertility.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
P273 - Avoid release to the environment.

Response

: P391 - Collect spillage.
P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.

Storage

: Not applicable.

Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients

: 4-tert-butylphenol
Amines, polyethylenepoly-, triethylenetetramine fraction
m-phenylenebis(methylamine)
2-methylpentane-1,5-diamine

Supplemental label elements

: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

: Causes digestive tract burns.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
4-tert-butylphenol	REACH #: 01-2119489419-21 EC: 202-679-0 CAS: 98-54-4 Index: 604-090-00-8	≥25 - ≤50	Skin Irrit. 2, H315 Eye Dam. 1, H318 Repr. 2, H361f Aquatic Chronic 1, H410 (M=1)	[1] [2]
Amines, polyethylenepoly-, triethylenetetramine fraction	REACH #: 01-2119487919-13 EC: 292-588-2 CAS: 90640-67-8 Index: 612-065-00-8	≥10 - ≤25	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412	[1]
m-phenylenebis(methylamine)	UK (GB) REACH #: <1 tonne REACH #: 01-2119480150-50 EC: 216-032-5 CAS: 1477-55-0	≥10 - ≤20	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 EUH071	[1]
2-methylpentane-1,5-diamine	REACH #: 01-2119976310-41 EC: 239-556-6 CAS: 15520-10-2	≥10 - ≤15	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.



SECTION 4: First aid measures

- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced foetal weight
increase in foetal deaths
skeletal malformations



SECTION 4: First aid measures

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced foetal weight
increase in foetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to British standard BS EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".



SECTION 6: Accidental release measures

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dispose of via a licensed waste disposal contractor. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria



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SECTION 7: Handling and storage

Category	Notification and MAPP threshold	Safety report threshold
 1	100 tonnes	200 tonnes

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name

4-tert-butylphenol

Result

DNEL - General population - Long term - Oral

0.026 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Dermal

0.026 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

0.071 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

0.09 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

0.5 mg/m³

Effects: Systemic



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SECTION 8: Exposure controls/personal protection

Amines, polyethylenepoly-,
triethylenetetramine fraction

DNEL - General population - Long term - Inhalation

0.096 mg/m³

Effects: Systemic

DNEL - General population - Long term - Oral

0.14 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Inhalation

0.54 mg/m³

Effects: Systemic

m-phenylenebis(methylamine)

DNEL - Workers - Long term - Inhalation

0.2 mg/m³

Effects: Local

DNEL - Workers - Long term - Dermal

0.33 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Inhalation

1.2 mg/m³

Effects: Systemic

2-methylpentane-1,5-diamine

DNEL - General population - Long term - Inhalation

0.125 mg/m³

Effects: Local

DNEL - General population - Short term - Inhalation

0.25 mg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

0.25 mg/m³

Effects: Local

DNEL - Workers - Short term - Inhalation

0.5 mg/m³

Effects: Local

DNEL - General population - Long term - Oral

0.25 mg/kg bw/day

Effects: Systemic



SECTION 8: Exposure controls/personal protection

PNECs

Not available.

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: butyl rubber.
The breakthrough time must be greater than the end use time of the product.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.



SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Liquid.
Colour	: Yellowish.
Odour	: Amine.
Odour threshold	: Not available.
Melting point/freezing point	: Not available.
Initial boiling point and boiling range	: 180 to 300°C
Flammability (solid, gas)	: Not available.
Upper/lower flammability or explosive limits	: Not available.
Flash point	: Closed cup: >83°C
Auto-ignition temperature	:

Ingredient name	°C	Method
2-methylpentane-1,5-diamine	350	

Decomposition temperature	: Not available.
pH	: Not applicable.
Viscosity	: Dynamic (room temperature): Not available. Kinematic (room temperature): 115 to 200 mm ² /s Kinematic (40°C): Not available.

Media	Result
water	Not soluble

Solubility in water	: Not available.
Miscible with water	: No.
Partition coefficient: n-octanol/ water	: Not applicable.

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
2-methylpentane-1,5-diamine	0.2	0.027				

Evaporation rate	: Not available.
Relative density	: 0.99 to 1
Vapour density	: Not available.
Explosive properties	: Not available.
Oxidising properties	: Not available.
Particle characteristics	
Median particle size	: Not applicable.

9.2 Other information



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SECTION 9: Physical and chemical properties

Physical/chemical properties : No additional information.
comments

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerisation will not occur.

10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials : Reactive or incompatible with the following materials:
oxidising materials
Reactive or incompatible with the following materials: acids.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
 tert-butylphenol	Rabbit - Dermal - LD50 2318 mg/kg	
	Rat - Oral - LD50 4000 mg/kg	
Amines, polyethylenepoly-, triethylenetetramine fraction	Rat - Oral - LD50 1716.2 mg/kg	
	Rat - Male - Dermal - LD50 1465 mg/kg	
m-phenylenebis(methylamine)	Rabbit - Dermal - LD50 2 g/kg	
	Rat - Oral - LD50 940 mg/kg	
	Rat - Inhalation - LC50 Gas. 700 ppm [1 hours]	Toxic effects: Eye - Lacrimation Lung, Thorax, or Respiration - Respiratory depression
2-methylpentane-1,5-diamine	Rat - Dermal - LD50 1900 mg/kg	



SECTION 11: Toxicological information

Rat - Oral - LD50

1690 mg/kg

Rat - Inhalation - LC50 Vapour

2900 mg/m³ [1 hours]

Toxic effects: Lung, Thorax, or
Respiration - Dyspnea
Gastrointestinal - Hypermotility,
diarrhea

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
PRONTOFIX HARDENER	2304.7	2912.5	24000.0	73.3	N/A
4-tert-butylphenol	4000	2318	N/A	N/A	N/A
Amines, polyethylenepoly-, triethylenetetramine fraction	1716.2	1465	N/A	N/A	N/A
m-phenylenebis(methylamine)	940	2000	4500	N/A	N/A
2-methylpentane-1,5-diamine	1690	1900	N/A	11	N/A

Skin corrosion/irritation

Product/ingredient name

4-tert-butylphenol

Result

Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 4 hours

Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name

4-tert-butylphenol

Result

Rabbit - Eyes - Severe irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 50 ug

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 10 mg

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation



SECTION 11: Toxicological information

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name

2-methylpentane-1,5-diamine

Result

STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes severe burns. May cause an allergic skin reaction.
Ingestion : Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics



SECTION 11: Toxicological information

Eye contact	: Adverse symptoms may include the following: pain watering redness
Inhalation	: Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary [Product] : Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging fertility.

Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result
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SECTION 12: Ecological information

4-tert-butylphenol	Chronic - NOEC - Fresh water Fish - <i>Pimephales promelas</i> 0.01 mg/l [128 days]	OECD 210 [Fish, Early-Life Stage Toxicity Test]
	Acute - EC50 - Fresh water Algae - Green algae - <i>Scenedesmus quadricauda</i> - Exponential growth phase 11.08 mg/l [72 hours]	Effect: Population OECD
	Chronic - NOEC - Fresh water Algae - Green algae - <i>Scenedesmus quadricauda</i> - Exponential growth phase 1 mg/l [72 hours]	Effect: Population OECD
	Acute - LC50 Fish - <i>Oryzias latipes</i> (Ricefish)) 5.1 mg/l [96 hours]	
	Acute - EC50 Daphnia - <i>Daphnia magna</i> (Big water flea) 3.4 mg/l [48 hours]	
Amines, polyethylenepoly-, triethylenetetramine fraction	Chronic - NOEC - Fresh water Crustaceans - Shrimp - <i>Neocaridina</i> sp. - Sub-adult 265.38 µg/l [21 days]	Effect: Population ASTM
	Acute - EC50 - Fresh water Daphnia 33.9 mg/l [48 hours]	
m-phenylenebis(methylamine)	Acute - EC50 Algae - <i>Scenedesmus subspicatus</i> 12 mg/l [72 hours]	
	Acute - LC50 - Fresh water Fish 87.6 mg/l [96 hours]	OECD 203 [Fish, Acute Toxicity Test]
	Acute - EC50 - Fresh water Daphnia 15.2 mg/l [48 hours]	OECD 202 [Daphnia sp. Acute Immobilization Test and Reproduction Test]
	Chronic - NOEC - Fresh water Daphnia 4.7 mg/l [21 days]	OECD 211 [Daphnia Magna Reproduction Test]
	Acute - NOEC - Fresh water Algae 10.5 mg/l [72 hours]	OECD 201 [Alga, Growth Inhibition Test]
2-methylpentane-1,5-diamine	Acute - LC50 Fish - <i>Leuciscus idus</i> (golden orphan)	



SECTION 12: Ecological information

215 mg/l [96 hours]

Chronic - NOEC - Fresh water
Daphnia
≥9.3 mg/l [21 days]

OECD 211 [Daphnia Magna
Reproduction Test]

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Product/ingredient name	Result	
4-tert-butylphenol	Aerobic 60% [28 days] - Readily	OECD 301F [Ready Biodegradability - Manometric Respirometry Test]
m-phenylenebis(methylamine)	49% [28 days] - Not readily	OECD 301B [Ready Biodegradability - CO2 Evolution Test]
2-methylpentane-1,5-diamine	Aerobic - 1.1 mg/l 100% [28 days] - Readily	OECD 301D [Ready Biodegradability - Closed Bottle Test]

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
4-tert-butylphenol	-	-	Readily
Amines, polyethylenepoly-, triethylenetetramine fraction	-	-	Not readily
m-phenylenebis (methylamine)	-	-	Not readily
2-methylpentane- 1,5-diamine	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
4-tert-butylphenol	3	44 to 48 [OECD 305 C, METI guideline (concentration test on chemical substances in fish)]	Low
Amines, polyethylenepoly-, triethylenetetramine fraction	-2.65	-	Low
m-phenylenebis (methylamine)	0.18	2.69	Low

12.4 Mobility in soil

Soil/water partition coefficient : Not available.

Mobility : Not available.



PRONTOFIX HARDENER

SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
☒ tert-butylphenol	No	N/A	No	Yes	No	N/A	No
Amines, polyethylenepoly-, triethylenetetramine fraction	No	N/A	N/A	No	N/A	N/A	N/A
m-phenylenebis (methylamine)	No	N/A	No	No	No	N/A	No
2-methylpentane-1,5-diamine	No	N/A	N/A	No	N/A	N/A	N/A

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

Waste catalogue

Waste code	Waste designation
16 05 08*	discarded organic chemicals consisting of or containing hazardous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	Waste catalogue
☒ Glass bottles or jugs	15 01 07 glass packaging

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN2735	UN2735	UN2735	UN2735

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SECTION 14: Transport information

14.2 UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, 2-methylpentane-1,5-diamine)	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, 2-methylpentane-1,5-diamine)	AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction, 2-methylpentane-1,5-diamine)	Amines, liquid, corrosive, n.o.s. (Amines, polyethylenepoly-, triethylenetetramine fraction, 2-methylpentane-1,5-diamine)
14.3 Transport hazard class(es)	8  	8  	8  	8 
14.4 Packing group	I	I	I	I
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

ADR/RID	: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Hazard identification number 88 Limited quantity 0 Special provisions 274 Tunnel code (E)
ADN	: The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Special provisions 274
IMDG	: The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-A, S-B Special provisions 274
IATA	: The environmentally hazardous substance mark may appear if required by other transportation regulations. Quantity limitation Passenger and Cargo Aircraft: 0.5 L. Packaging instructions: 850. Cargo Aircraft Only: 2.5 L. Packaging instructions: 854. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden. Special provisions A3, A803
14.6 Special precautions for user	: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
14.7 Transport in bulk according to IMO instruments	: Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
Substance of equivalent concern for environment	4-tert-butylphenol	Candidate	-	7/16/2019

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
PRONTOFIX HARDENER	≥90	3

Labelling : Not applicable.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category
E1

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.



SECTION 15: Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment

: The supplier has not performed a chemical safety assessment for the substance/product.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = GB CLP-specific Hazard statement
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Key literature references and sources for data

: UK CLP Regulation SI 2019/720; European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 plus amendments (Uniform text: Journal of Laws 27/2009 pos. 162 plus amendments); European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN); Occupational exposure limits; International regulations

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Corr. 1A, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 2, H361f	Calculation method
Aquatic Chronic 1, H410	Calculation method

Full text of abbreviated H statements



PRONTOFIX HARDENER

SECTION 16: Other information

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.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

Training advice : Ensure operatives are trained to minimise exposures. Training staff on good practice.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

