

Product name:	CALDOFIX-2 HARDENER	Page:	1/10
Revision:	2019-12-10	Print date:	2019-12-10
Document No.:	M0169	SDS-ID:	GB-EN/15.0

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

1.1. Product identifier

Product name: CALDOFIX-2 HARDENER
Cat. No.40200086, 40200084

CAS-No.: 1761-71-3

EC No.: 217-168-8

REACH Reg. No.: 01-2119541673-38-xxxx

Container size: 300ml; 500ml

1.2. 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. (*)

1.3. Details of the supplier of the safety data sheet

Supplier: Struers ApS
Pederstrupvej 84
DK-2750 Ballerup
Tel:+45 44 600 800

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

1.4. Emergency telephone number

NHS: 111

+45 44 600 800
(Only during office hours)

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SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP:
Acute Tox. 4;H302
Skin Corr. 1B;H314
Eye Dam. 1;H318
Skin Sens. 1;H317
STOT RE 2;H373

2.2. Label elements



Danger

Contains: 4,4'-Methylenebis(cyclohexylamine)

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H373 May cause damage to organs through prolonged or repeated exposure.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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 [or 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.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.

P501 Dispose of contents/container in accordance with local regulations.

2.3. 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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

The product contains: amine compound.

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CLP:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
100	1761-71-3	217-168-8	01-2119541673-38-xxxx	4,4'-Methylenebis (cyclohexylamine)	Acute Tox. 4;H302 Skin Corr. 1B;H314 Eye Dam. 1;H318 Skin Sens. 1;H317 STOT RE 2;H373	

References: The full text for all hazard statements is displayed in section 16.

SECTION 4: FIRST AID MEASURES

4.1. 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.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

4.3. Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media: Extinguish with foam, carbon dioxide, dry powder or water fog. Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards: In case of fire, toxic gases may be formed (COx, NOx).

5.3. Advice for firefighters

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

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. 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.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

References: For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. 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.

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

Specific use(s): No information available.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No occupational exposure limit assigned.

8.2. Exposure controls

Engineering measures: Local exhaust is recommended. 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.

Personal protection: Personal protection equipment should be chosen according to the CEN 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: Wear protective gloves. 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.

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.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<u>Form:</u>	Liquid.
<u>Colour:</u>	Colourless.
<u>Odour:</u>	ammonia
<u>Odour threshold:</u>	Not available.
<u>pH:</u>	12
<u>Melting point:</u>	Not available.
<u>Boiling point:</u>	320°C / 608°F
<u>Flash point:</u>	160°C / 320°F
<u>Evaporation rate:</u>	Not available.
<u>Flammability (solid, gas):</u>	Not available.
<u>Explosive limits</u>	Not available.
<u>Vapour pressure:</u>	0.0549 Pa @ 20°C OECD 104 (*)
<u>Vapour density:</u>	7.24 (*)
<u>Relative density:</u>	0.96
<u>Solubility:</u>	insoluble in water
<u>Partition coefficient (n-octanol/water):</u>	log Pow 2.03 (*)
<u>Auto-ignition temperature (°C):</u>	300°C / 572°F (*)
<u>Decomposition temperature (°C):</u>	Not available.
<u>Viscosity:</u>	29.6 mPa s @ 40°C (*)
<u>Explosive properties:</u>	Not available.
<u>Oxidising properties:</u>	Not available.

9.2. Other information

<u>Other data:</u>	Volatile Organic Compound (VOC): 0 g/l
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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: Reacts violently with strong oxidising substances.

10.2. Chemical stability

Stability: Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

Hazardous Reactions: No data available.

10.4. Conditions to avoid

Conditions/materials to avoid: Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Incompatible materials: Strong oxidising substances. Acids and metals (e.g. aluminium and zinc).

10.6. Hazardous decomposition products

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

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: May cause damage to organs through prolonged or repeated exposure.

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.

Toxicological data: LD50 (Oral, Rat): 625 mg/kg

LD50 (Dermal, Rabbit): 2110 mg/kg

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SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: LC50 96 hours, fish, mg/l(Leuciscus idus): > 100

12.2. Persistence and degradability

Degradability: The product is slowly degradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.
log Pow 2.03 (*)

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

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

12.6. Other adverse effects

Other adverse effects: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. 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.

EWC-code: 16 05 08

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

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SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN-No: 2735

14.2. UN proper shipping name

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-Methylenebiscyclohexanamine)

Additional IMDG information:

EmS: F-A, S-B

MFAG: 1

Segregation Group: Alkali

14.3. Transport hazard class(es)

Class: 8

14.4. Packing group

PG: II

14.5. Environmental hazards

Marine pollutant: No.

Environmentally Hazardous substance: No.

14.6. Special precautions for user

Special precautions: None known.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk: Not relevant.

SECTION 15: REGULATORY INFORMATION

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

Special provisions: As a general rule, persons under 18 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.

National regulation: Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.
Statutory Instruments 2008 No. 2852 - The REACH Enforcement Regulations 2008.
The Control of Substances Hazardous to Health Regulations 2002 (S.I. 2002 No. 2677) with amendments.
The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), with amendments.
The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).

15.2. Chemical Safety Assessment

CSA status: No chemical safety assessment has been carried out.

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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, 9, 12.

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 Regulation (EC) No. 1272/2008:
Calculation method.

Wording of H-statements:

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated exposure.

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.
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