

Product name:	CALDOFIX-2 HARDENER	Page:	1/9
Revision Date:	2014-02-24	Print date:	2014-02-24
Document No.:	M0169	SDS-ID:	US-EN/8.0

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

### Product identifier

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

CAS-No.: 1761-71-3 (\*)

EC No.: 217-168-8 (\*)

Container size: 300ml; 500ml

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

Application: For embedding of materialographic specimens

### Details of the supplier of the safety data sheet

Supplier: Struers A/S  
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:  
Lisbeth.Mygind@struers.dk

### Emergency telephone number

Emergency telephone: Infotrac:  
1-800-535-5053  
Struers US:  
1-440-871-0071

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## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the substance or mixture

The product is classified:

67/548/EEC: C;R35 Xn;R22-48/22 R43 N;R51-53 (\*)

GHS: Acute Tox. 4;H302 - Skin Corr. 1A;H314 - Skin Sens. 1;H317 - STOT RE 2;H373 - Aquatic Chronic 2;H411 (\*)

Human health: Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause damage to organs through prolonged or repeated exposure. Vapors are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung edema. (\*)

Environment: Toxic to aquatic life with long lasting effects.

### Label elements

(\*)



DANGER

Contains: 4,4'-Methylenebis(cyclohexyl)amine

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.

H411 Toxic to aquatic life with long lasting effects.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301/330/331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303/361/353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305/351/338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308/311 IF exposed or concerned: Call a POISON CENTER/doctor.

P501a Dispose of contents/container in accordance with local regulations.

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

### Other hazards

PBT/vPvB: Not relevant.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Substances

The product contains: amine compound (\*)

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67/548/EEC:

<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	-	4,4'-Methylenebiscyclohexylamine	C;R35 Xn;R22-48/22 R43 N;R51-53	

GHS:

<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	-	4,4'-Methylenebiscyclohexylamine	Acute Tox. 4;H302 Skin Corr. 1A;H314 Skin Sens. 1;H317 STOT RE 2;H373 Aquatic Chronic 2;H411	

References: The full text for all R-phrases and hazard statements are 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 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 rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and bring along these instructions.

### 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: Not known.

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## 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 fire-fighters: Use air-supplied respirator, gloves and protective goggles.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of vapors and contact with skin and eyes.

### 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

Technical measures for safe storage: No special precautions.

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

### Specific end use(s)

Specific use(s): Not relevant.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

No occupational exposure limit assigned.

### Exposure controls

Engineering measures: Provide adequate ventilation. Local exhaust is recommended. 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. Use respiratory equipment with gas filter, type A2.

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.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance: colorless liquid (\*)

Odor: ammonia

pH: 12 (\*)

Boiling point: 320°C (\*)

Flash point: > 100°C (\*)

Explosion limits: Not available.

Vapor pressure: <0,1 mmHg (21°C) (\*)

Relative density: 0.96 (\*)

Solubility: insoluble in water

Other information

Other data: VOC (Volatile Organic Substances): 0 g/l

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## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

Reactivity: None known.

### Chemical stability

Stability: Stable under normal temperature conditions.

### Possibility of hazardous reactions

Hazardous Reactions: None known.

### Conditions to avoid

Conditions/materials to avoid: Strong oxidizing substances. Acids and metals (e.g. aluminum and zinc).

### Incompatible materials

Incompatible materials: None known.

### Hazardous decomposition products

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

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects

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

Skin contact: Strongly corrosive. May cause deep tissue damage. May cause an allergic skin reaction. (\*)

Eye contact: Strongly corrosive. Causes severe burns. Immediate first aid is imperative.

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

Specific effects: Carcinogenicity:  
National Toxicology Program (NTP): No.  
I.A.R.C. Monographs: No.  
OSHA: No. None known.

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

LD50 (Dermal, Rabbit): 2110 mg/kg (\*)

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## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

Ecotoxicity: Toxic to aquatic life with long lasting effects.

LC50 96 hours, fish, mg/l(Leuciscus idus): 46 - 100 (\*)

EC50 48 hours, Daphnia, mg/l(Magna): 6,84 (\*)

### Persistence and degradability

Degradability: The product is slowly degradable. (\*)

### Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

### Mobility in soil

Mobility: No data available.

### Results of PBT and vPvB assessment

PBT/vPvB: Not relevant.

### Other adverse effects

Other adverse effects: None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

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.

Waste from residues: EWC-code: 16 05 08

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## SECTION 14: TRANSPORT INFORMATION

### UN number

UN-No: 2735

### 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

### Transport hazard class(es)

Class: 8

### Packing group

PG: II

### 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: TSCA: Listed.  
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: Europe/USA:  
This Material Safety Data Sheet has been prepared according to the EU-regulation.

### Chemical Safety Assessment

CSA status: Not relevant.

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## SECTION 16: OTHER INFORMATION

For restrictions on use see section 15.

The following sections contain revisions or new statements: 1, 2, 3, 9, 11, 12.

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

Approved by DHI.

Allan Vorup

Additional information:

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

Wording of H-statements:

R22	Harmful if swallowed.
R35	Causes severe burns.
R43	May cause sensitisation by skin contact.
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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.
H411	Toxic to aquatic life with long lasting effects.

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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.  
[www.dhigroup.com](http://www.dhigroup.com).

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