

Product name:	CALDOFIX-2 HARDENER	Page:	1/11
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Document No.:	M0169	SDS-ID:	CA-EN/15.0

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## 1. IDENTIFICATION

### 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

### Recommended use and restrictions on use

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 Ltd  
7275 West Credit Avenue  
Ontario L5N 5M9 Mississauga  
Canada  
Tel:+1 (905) 8148855

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

Alberta & NWT:  
Poison & Drug Information Service (PADIS): 1-800-332-1414

British Columbia:  
Drug and Poison Information Centre (DPIC): 604-682-5050 / 1-800-567-8911

Ontario:  
Poison Centre: 1-800-268-9017

Québec:  
Poison Control Centre: 1-800-463-5060

Infotrac:  
1-800-535-5053

Struers CAN:  
+1 (905) 8148855  
(Only during office hours)

## 2. HAZARDS IDENTIFICATION

### Classification of the hazardous product

WHMIS 2015: Acute (Oral) Toxicity — Category 4  
Skin Corrosion — Category 1B  
Serious Eye Damage — Category 1  
Skin Sensitizer — Category 1  
Specific Target Organ Toxicity — Repeated Exposure — Category 2

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## Label elements



### Danger

- 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.
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- 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 [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.
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- P260 Do not breathe gas, fume, vapours or spray.
- P264 Wash contaminated skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P362 + P364 Take off contaminated clothing and wash it before reuse.
- P363 Wash contaminated clothing before reuse.
- P391 Collect spillage.
- 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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Substances

The product contains: amine compound.

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WHMIS 2015:

<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'-Methylenebis (cyclohexylamine)	Acute (Oral) Toxicity Category 4 Skin Corrosion Category 1B Serious Eye Damage Category 1 Skin Sensitizer Category 1 Category 2 Target organ toxicant, Repeated Exposure	

## 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 take along 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.

## 5. FIRE-FIGHTING MEASURES

### 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.

### Specific hazards arising from the hazardous product

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

### Advice for fire-fighters

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

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Avoid inhalation of vapors 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

Spill Cleanup Methods: Dam and absorb spillages with sand, earth or other non-combustible material.

### Reference to other items

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

## 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.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

No occupational exposure limit assigned.

### 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 relevant 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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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 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>Explosion 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.
<b><u>Other information</u></b>	
<u>Other data:</u>	Volatile Organic Compound (VOC): 0 g/l

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## 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: No data available.

### Conditions to avoid

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

### Incompatible materials

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

### Hazardous decomposition products

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

## 11. TOXICOLOGICAL INFORMATION

### 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 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.  
IARC Not Listed.

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: 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.

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

LD50 (Dermal, Rabbit): 2110 mg/kg

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

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

### Persistence and degradability

Degradability: The product is slowly degradable.

### Bioaccumulative potential

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

### 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.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

Waste from residues: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Note that fully cured material is not considered as hazardous waste.

Contaminated packaging: Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

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## 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: No.

Environmentally Hazardous substance: No.

### 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

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## 15. REGULATORY INFORMATION

### Safety, health and environmental regulations specific to the product

Special provisions: This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

DSL: All chemicals included in the product are DSL listed or exempt.

National regulation: Hazardous Products Regulations, with amendments.  
Canadian Environmental Protection Act, Reporting for the Domestic Substances List (DSL), with amendments.  
U.S. Department of health and human services: 2011 - Report on Carcinogens - 12th Edition.  
International Agency for Research on Cancer (IARC): IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Lyon: IARC, World Health Organization.  
British Columbia: Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, with amendments (2015).  
Ontario: Control of Exposure to Biological or Chemical Agents R.R.O. 1990, Reg. 833, with amendments (2016).  
Quebec: Regulation respecting the quality of the work environment, with amendments (2013-12-13).  
Alberta: Occupational Health and Safety Code 2009.

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## 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 WHMIS 2015:  
Calculation method.

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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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