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

Product identifier

Product name: CALDOFIX-2 RESIN
Cat. No. 40200085, 40200084
Container size: 1 l

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

Application: For embedding and impregnation of materialographic specimens

Details of the supplier of the safety data sheet

Supplier: Struers ApS
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: struers@struers.dk

Emergency telephone number

National Capital Poison Center: 1-800-222-1222

Infotrac:
1-800-535-5053
Struers US:
1-440-871-0071
SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA 2012:
- Skin Irritant Category 2
- Serious Eye Damage Category 1
- Skin Sensitizer Category 1
- Category 2 mutagen
- Aquatic Chronic Toxicity Category 2

Label elements

Danger
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H318: Causes serious eye damage.
- H341: Suspected of causing genetic defects.
- H411: Toxic to aquatic life with long lasting effects.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P302 + P352: IF ON SKIN: Wash with plenty of water.
- P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
- 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/doctor.
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P261: Avoid breathing gas, fume, vapours or spray.
- P264: Wash contaminated skin thoroughly after handling.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P332 + P313: If skin irritation occurs: Get medical advice/attention.
- P362 + P364: Take off contaminated clothing and wash it before reuse.
- P391: Collect spillage.
- P405: Store locked up.
- P501: Dispose of contents/container in accordance with local regulations.

Other hazards
- PBT/vPvB: No information available.
### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### Mixtures

The product contains: epoxy resin.

**OSHA 2012:**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>60-100</td>
<td>25068-38-6</td>
<td>500-033-5</td>
<td>01-2119456619-26-xxxx</td>
<td>Reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight &lt;= 700)</td>
<td>Eye irritant Category 2A Skin Irritant Category 2 Skin Sensitizer Category 1 Aquatic Chronic Toxicity Category 2</td>
<td></td>
</tr>
<tr>
<td>15-35</td>
<td>26761-45-5</td>
<td>247-979-2</td>
<td>01-2119431597-33-xxxx</td>
<td>Neodecanoic acid oxiranylmethylester</td>
<td>Skin Sensitizer Category 1 Category 2 mutagen Aquatic Chronic Toxicity Category 2</td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>13048-33-4</td>
<td>235-921-9</td>
<td>01-2119484737-22-xxxx</td>
<td>Hexamethylene diacrylate</td>
<td>Eye irritant Category 2A Skin Irritant Category 2 Skin Sensitizer Category 1</td>
<td>D</td>
</tr>
<tr>
<td>1.5-2.5</td>
<td>3524-68-3</td>
<td>222-540-8</td>
<td>-</td>
<td>Pentaerythritol triacrylate</td>
<td>Acute Oral Toxicity Category 4 Skin Irritant Category 2 Serious Eye Damage Category 1 Skin Sensitizer Category 1 Aquatic Chronic Toxicity Category 2</td>
<td></td>
</tr>
<tr>
<td>1.5-2.5</td>
<td>4986-89-4</td>
<td>225-644-1</td>
<td>-</td>
<td>Pentaerythritol tetraacrylate</td>
<td>Acute Oral Toxicity Category 4 Skin Irritant Category 2 Serious Eye Damage Category 1 Skin Sensitizer Category 1 Aquatic Chronic Toxicity Category 2</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

**Description of first aid measures**

**Inhalation:** Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions.

**Skin contact:** Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention 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. Keep person under observation. If person becomes uncomfortable seek hospital and bring these instructions. Do not induce vomiting.

**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. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

**Special hazards arising from the substance or mixture**

**Specific hazards:** During fire, health hazardous gases may be formed.

**Advice for firefighters**

**Protective equipment for firefighters:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Protective equipment:** Avoid contact with skin and eyes. For personal protection, see section 8. (*)

**Emergency procedures:** No specific recommendations. For personal protection, see section 8. (*)

**Environmental precautions**

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground.

**Methods and material for containment and cleaning up**

**Spill Cleanup Methods:** Absorb spillage with suitable absorbent 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 contact with skin and eyes. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Observe good chemical hygiene practices.

Technical measures: Work practice should minimize contact. Technical aids: Use disposable equipment (rags, brushes, spatulas, putty knives, etc.), if possible.

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 closed original container in a dry place.

Specific end use(s)

Specific use(s): No information available.

SECTION 8: EXPOSURE CONTROLS/PERSOINAL 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 the ANSI 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.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

(*)

Appearance: clear yellowish liquid
Odor: slight odor
Odor threshold: Not available.
\(\text{pH}\): Not available.
Melting point: Not available.
Boiling point: Not available.
Flash point: 230°F
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Explosion limits: Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Relative density: 1.13
Solubility: insoluble in water
Partition coefficient (\(n\)-octanol/water): Not available.
Auto-ignition temperature (\(^{\circ}\text{F}\)): Not available.
Decomposition temperature (\(^{\circ}\text{F}\)): Not available.
Viscosity: Not available.
Explosive properties: Not available.
Oxidizing properties: Not available.

Other information

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

Reactivity
Reactivity: No data available.

Chemical stability
Stability: Stable under normal temperature conditions.

Possibility of hazardous reactions
Hazardous Reactions: No data available.

Conditions to avoid
Conditions/materials to avoid: Strong oxidizing substances and strong bases.

Incompatible materials
Incompatible materials: No information available.

Hazardous decomposition products
Hazardous decomposition products: None under normal conditions.
**SECTION 11: TOXICOLOGICAL INFORMATION**

**Information on toxicological effects**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity (Oral)</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Acute Toxicity (Dermal)</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Acute Toxicity (Inhalation)</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Suspected of causing genetic defects.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>National Toxicology Program (NTP)</td>
<td>No.</td>
</tr>
<tr>
<td>I.A.R.C. Monographs</td>
<td>No.</td>
</tr>
<tr>
<td>OSHA</td>
<td>No.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>STOT - Single exposure</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>STOT - Repeated exposure</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not relevant at normal room temperatures. When heated, irritating vapors may be formed.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Irritating. May cause nausea, stomach pain and vomiting.</td>
</tr>
</tbody>
</table>

**Toxicological data**

- Reaction product: bisphenol-A-((epichlorhydrin), epoxy resin (number average molecular weight $\leq 700$):
  - Acute Toxicity (Oral LD50): 11400 mg/kg (Rat)
  - Acute Toxicity (Dermal LD50): 2000 mg/kg (Rat)

- Neodecanoic acid oxiranylmethylester:
  - Acute Toxicity (Oral LD50): 9600 mg/kg (Rat)
  - Acute Toxicity (Dermal LD50): 3800 mg/kg (Rat)
SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: Toxic to aquatic life with long lasting effects.

Reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (number average molecular weight <= 700): 1.3 (LC50 96 hours, fish, mg/l) (*)

Neodecanoic acid oxiranylmethylester: 9.6 (LC50 96 hours, fish, mg/l) (*)

Persistence and degradability

Degradability: This product is expected to be heavily biodegradable.

Bioaccumulative potential

Bioaccumulative potential: May accumulate in soil and water systems.

Mobility in soil

Mobility: No data available.

Results of PBT and vPvB assessment

PBT/vPvB: No information available.

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.

Contaminated packaging: Dispose of waste and residues in accordance with local authority requirements.
SECTION 14: TRANSPORT INFORMATION

UN number
UN-No: 3082

UN proper shipping name
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin)

Additional IMDG information:
EmS: F-A , S-F
MFAG:1

Transport hazard class(es)
Class: 9

Packing group
PG: III

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: State and local regulation may apply.

TSCA: Listed.

NFPA Rating: Health: 2  Fire: 1  Reactivity: 0  Other:-

SARA Section 302: No.
SARA Section 304: No.
SARA Section 313: No.
SARA (311/312) Hazard categories: Yes.

National regulation: The following lists have been checked:

Threshold Limit Values (2018), ACGIH, by the American Conference on Governmental Industrial Hygienists.
NIOSH Pocket Guide to Chemical Hazards.
The Code of Federal Regulation, Title 40, part 261.33. Identification and listing of hazardous waste.
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: 6, 9.
The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Allan Vorup

Additional information: Classification according to HCS 2012:
Calculation method.

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.