






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

- **Product identifier**
- **Trade name:** **CM 405-1 (A&B)**
- **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the preparation** Construction chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Hilti (China) Co., Ltd
Xuhui District, Shanghai
Gui Qing-Straße 69
Gebäude 29
6th Floor,

Tel.: 800-820-2585 (Toll free)
400-820-2585 (mobile users)
Fax: +8621 64850311
E-mail: cncs@hilti.com
- **Informing department:** see section 16
- **Emergency telephone number:**
Hilti (China) Co., Ltd
Tel.: 800-820-2585 (Toll free)
400-820-2585 (mobile users)
Fax: +8621 64850311
Schweizerisches Toxikologisches Informationszentrum - 24 h Service
Tel.: 0041 / 44 251 51 51 (international)

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
-  C; Corrosive
R34: Causes burns.
-  Xn; Harmful
R20/21/22-68-62: Harmful by inhalation, in contact with skin and if swallowed. Possible risk of irreversible effects. Possible risk of impaired fertility.
-  Xi; Irritant
R36/38: Irritating to eyes and skin.
-  Xi; Sensitising
R43: May cause sensitisation by skin contact.
-  N; Dangerous for the environment
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Classification system:**
The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

· Label elements

- **Labelling according to EU guidelines:**
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
- **Code letter and hazard designation of product:**



C Corrosive
N Dangerous for the environment

· Hazard-determining components of labelling:

3,6,9,12-tetra-azatetradecamethylenediamine
Benzyl alcohol
reaction product: bisphenol-A-(epichlorhydrin) epoxy resin
(number average molecular weight = 700)
2,3-epoxypropyl o-tolyl ether

· Risk phrases:

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
34 Causes burns.

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- 36/38 Irritating to eyes and skin.
- 43 May cause sensitisation by skin contact.
- 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 68 Possible risk of irreversible effects.
- 62 Possible risk of impaired fertility.

· Safety phrases:

- 25 Avoid contact with eyes.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 29 Do not empty into drains.
- 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

· Special labelling of certain preparations:

Contains epoxy constituents. See information supplied by the manufacturer.
Restricted to professional users.

· Other hazards

· Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description:

Mixture consisting of the following components.

· Dangerous components:

CAS: 25068-38-6 NLP: 500-033-5	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) ☒ Xi R36/38; ☒ Xi R43; ☒ N R51/53 ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	10-25%
CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol ☒ Xn R20/22 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	10-25%
CAS: 2855-13-2 EINECS: 220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine ☒ C R34; ☒ Xn R21/22; ☒ Xi R43 R52/53 ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	10-25%
CAS: 2210-79-9 EINECS: 218-645-3	2,3-epoxypropyl o-tolyl ether ☒ Xn R68; ☒ Xi R38; ☒ Xi R43; ☒ N R51/53 Muta. Cat. 3 ⚠ Muta. 2, H341; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	2,5-10%
CAS: 25620-58-0 EINECS: 247-134-8	trimethylhexane-1,6-diamine ☒ C R34; ☒ Xn R22; ☒ Xi R43 ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	2,5-10%
CAS: 80-05-7 EINECS: 201-245-8	bisphenol A ☒ Xn R62; ☒ Xi R37-41; ☒ Xi R43 R52 Repr. Cat. 3 ⚠ Repr. 2, H361f; ⚠ Eye Dam. 1, H318; ⚠ Skin Sens. 1, H317; STOT SE 3, H335	2-5%

· Dangerous components A:

CAS: 25068-38-6 NLP: 500-033-5	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) ☒ Xi R36/38; ☒ Xi R43; ☒ N R51/53 ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	
CAS: 2210-79-9 EINECS: 218-645-3	2,3-epoxypropyl o-tolyl ether ☒ Xn R68; ☒ Xi R38; ☒ Xi R43; ☒ N R51/53 Muta. Cat. 3 ⚠ Muta. 2, H341; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	

· Dangerous components B:

CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol ☒ Xn R20/22 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	
CAS: 2855-13-2 EINECS: 220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine ☒ C R34; ☒ Xn R21/22; ☒ Xi R43 R52/53 ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	

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CAS: 25620-58-0 EINECS: 247-134-8	trimethylhexane-1,6-diamine <input checked="" type="checkbox"/> C R34; <input checked="" type="checkbox"/> Xn R22; <input checked="" type="checkbox"/> Xi R43 <input checked="" type="checkbox"/> Skin Corr. 1B, H314; <input checked="" type="checkbox"/> Acute Tox. 4, H302; Skin Sens. 1, H317
CAS: 80-05-7 EINECS: 201-245-8	bisphenol A <input checked="" type="checkbox"/> Xn R62; <input checked="" type="checkbox"/> Xi R37-41; <input checked="" type="checkbox"/> Xi R43 R52 Repr. Cat. 3 <input checked="" type="checkbox"/> Repr. 2, H361f; <input checked="" type="checkbox"/> Eye Dam. 1, H318; <input checked="" type="checkbox"/> Skin Sens. 1, H317; STOT SE 3, H335

· **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **Description of first aid measures**
- **After inhalation**
Take affected persons into the open air and position comfortably
Seek medical treatment in case of complaints.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly. If skin irritation persist, call a physician.
- **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- **After swallowing** Seek immediate medical advice.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents** Water spray, carbon dioxide (CO₂), carbon dioxide blanket, foam, or dry powder.
- **Special hazards arising from the substance or mixture** Formation of poisonous gases during heating or in fires.
- **Advice for firefighters**
- **Protective equipment:** In the event of fire, wear self contained breathing apparatus

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.
Keep away from ignition sources
- **Environmental precautions:** Do not allow to enter drainage system, surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Collect mechanically.
Dispose of contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

7 Handling and storage

- **Handling**
- **Precautions for safe handling**
Provide sufficient air exchange and/or exhaust in work rooms. When using, do not eat, drink or smoke. Ingestion, exposure to skin and eyes and inhalation of any general vapours should be avoided.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Keep in a cool, dry and dark place; 10 °C to 40 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Store in a locked cabinet and out of the reach of children.
- **Storage class** 8 A
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures should be adhered to general rules for handling chemicals.
Take off immediately all contaminated clothing
Keep away from foodstuffs, beverages and food.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Use breathing protection in case of insufficient ventilation.
- **Protection of hands:**
Protective gloves
EN 374 + EN 388
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
Tightly sealed safety glasses.
EN 166 + EN 170
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - **Form:** Fluid
 - **Colour:** Light yellow
 - **Odour:** Amine-like
- **pH-value at 20 °C:** 11
- **Change in condition**
 - **Melting point/Melting range:** Not determined
 - **Boiling point/Boiling range:** >200 °C
- **Flash point:** >100 °C
- **Ignition temperature:**
 - **Decomposition temperature:** Not determined.
- **Self-inflammability:** Product is not selfigniting.
- **Danger of explosion:** Product is not explosive.
- **Vapour pressure:** Not determined.
- **Density:** Not determined
- **Solubility in / Miscibility with**
 - **Water:** Partly miscible
- **Viscosity:**
 - **dynamic:** Not determined.
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Stable until boiling point
- **Possibility of hazardous reactions**
Reacts with strong acids and alkali
Reacts with strong oxidizing agents
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Corrosive gases/vapours

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11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

· LD/LC50 values that are relevant for classification:

100-51-6 Benzyl alcohol		
Oral	LD50	1230 mg/kg (rango)
Dermal	LD50	2000 mg/kg (rbt)
2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine		
Oral	LD50	1030 mg/kg (rango)
25620-58-0 trimethylhexane-1,6-diamine		
Oral	LD50	900 mg/kg (rango)

- Primary irritant effect:
- on the skin: Caustic effect on skin and mucous membranes.
- on the eye: Strong caustic effect.
- Sensitization: Sensitization possible by skin contact.
- Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
Corrosive
Product is suspected to cause injury to foetus.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behaviour in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Ecotoxicological effects:
- Remark: Toxic for fish
- Additional ecological information:
- General notes:
Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
- Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
- Recommendation:
Disposal must be made according to official regulations.
Dispose of packaging according to regulations on the disposal of packagings.

14 Transport information

· UN-Number	
· ADR, IMDG, IATA	(A) 3082 / (B) 2735
· UN proper shipping name	
· ADR, IMDG, IATA	(A) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (REACTION: Bisphenol A Epoxy Resin) (B) AMINES, LIQUID, CORROSIVE, NOS (trimethylhexanmetilendiamina; Isphorondiamine)
· Transport hazard class(es)	
· ADR, IMDG, IATA	
· Class	(A) 9 / (B) 8
· Label	(A) 9 / (B) 8
· Packing group	
· ADR, IMDG, IATA	(A) III / (B) III

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· Environmental hazards:	
· Marine pollutant:	Yes
· Special precautions for user	Not applicable.
· Kemler Number:	(A) 90 / (B) 80
· EMS Number:	(A) F-A, S-F (B) F-A, S-B
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	(A) 5 L / (B) 5 kg
· Tunnel restriction code	(A) [E] / (B) [E]

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Designation according to EC guidelines:
- Hazard-determining components of labelling: Contains epoxy constituents. See information supplied by the manufacturer.
- Chemical safety assessment: not required.

16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

- 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.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H361f Suspected of damaging fertility.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- R20/22 Harmful by inhalation and if swallowed.
- R21/22 Harmful in contact with skin and if swallowed.
- R22 Harmful if swallowed.
- R34 Causes burns.
- R36/38 Irritating to eyes and skin.
- R37 Irritating to respiratory system.
- R38 Irritating to skin.
- R41 Risk of serious damage to eyes.
- R43 May cause sensitisation by skin contact.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R52 Harmful to aquatic organisms.
- R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R62 Possible risk of impaired fertility.
- R68 Possible risk of irreversible effects.

· Department issuing data specification sheet:

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FL-9494 Schaan / Liechtenstein

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