# SAFETY DATA SHEET

WEICON TI Epoxy Hardener

## SECTION 1: Identification of the substance/mixture and of the company/ undertaking

### 1.1 Product identifier

**Product name** : WEICON TI Epoxy Hardener

**UFI** : 2820-A0QC-S002-1A4D

**Product code** : 104302

**Color** : White.

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

| Identified uses |
|---|
| Hardener for resins. |

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

WEICON GmbH & Co. KG
Königsberger Str. 255
48157 Münster
Germany
Phone: +49 251 93220
Fax: +49(0)251 / 9322 - 244
Internet: www.weicon.de

**e-mail address of person responsible for this SDS** : msds@weicon.de

### 1.4 Emergency telephone number

**Telephone number** : EMERGENCY CONTACT – UK, UAE, South Africa (24h): Tel: ++44 1865 407333 (English)
TRANSPORT EMERGENCY CONTACT - UK, UAE, South Africa (24h): Tel: ++44 1865 407333 (English)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Acute Tox. 4, H302
Skin Corr. 1B, H314
Eye Dam. 1, H318
Skin Sens. 1, H317
STOT RE 2, H373
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

## SECTION 2: Hazards identification

**Hazard pictograms** :

**Signal word** : Danger

**Hazard 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.
H410 - Very toxic to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention** : P280 - Wear protective gloves, protective clothing and eye or face protection.
P273 - Avoid release to the environment.
P260 - Do not breathe vapor.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash thoroughly after handling.

**Response** : P391 - Collect spillage.
P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
P363 - Wash contaminated clothing before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

**Storage** : P405 - Store locked up.

**Disposal** : P501 - Dispose of waste according to applicable legislation.

**Hazardous ingredients** : 4,4'-methylenebis(cyclohexylamine)
amines, polyethylenepoly-
3,6,9,12-tetra-azatetradecamethylenediamine

**Supplemental label elements** : Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

### 2.3 Other hazards

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other hazards which do not result in classification** : None known.

# SECTION 3: Composition/information on ingredients

**3.2 Mixtures** : Mixture

| Product/ingredient name | Identifiers | % | Regulation (EC) No. 1272/2008 [CLP] | Type |
|---|---|---|---|---|
| 4,4'-methylenebis (cyclohexylamine) | REACH #: 01-2119541673-38<br>EC: 217-168-8<br>CAS: 1761-71-3 | ≥25 - ≤50 | Acute Tox. 4, H302<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1B, H317<br>STOT RE 2, H373 | [1] |
| amines, polyethylenepoly- | REACH #: 01-2119485823-28<br>EC: 268-626-9<br>CAS: 68131-73-7<br>Index: 612-121-00-1 | ≥10 - ≤25 | Acute Tox. 4, H302<br>Acute Tox. 4, H312<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>Aquatic Acute 1, H400 (M=1)<br>Aquatic Chronic 1, H410 (M=1) | [1] |
| 3,6,9,12-tetra-azatetradecamethylenediamine | REACH #: 01-2119485826-22<br>EC: 223-775-9<br>CAS: 4067-16-7<br>Index: 612-064-00-2 | ≥10 - ≤25 | Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>Aquatic Acute 1, H400 (M=1)<br>Aquatic Chronic 1, H410 (M=1)<br>**See Section 16 for the full text of the H statements declared above.** | [1] |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern
[6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

# SECTION 4: First aid measures

**4.1 Description of first aid measures**

**Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

**Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

# SECTION 4: First aid measures

**Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

**Over-exposure signs/symptoms**

**Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

**Ingestion** : Adverse symptoms may include the following:
stomach pains

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

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** : No specific treatment.

# SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

### 5.2 Special hazards arising from the substance or mixture

**Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

## SECTION 5: Firefighting measures

**Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**6.2 Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

**6.3 Methods and materials for containment and cleaning up** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance.

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

# SECTION 7: Handling and storage

### 7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

**Seveso Directive - Reporting thresholds**

**Danger criteria**

| Category | Notification and MAPP threshold | Safety report threshold |
|---|---|---|
| E1 | 100 tonne | 200 tonne |

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

# SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

### 8.1 Control parameters

**Occupational exposure limits**

No exposure limit value known.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**DNELs/DMELs**

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|---|---|---|---|---|---|
| 4,4'-methylenebis(cyclohexylamine) | DNEL | Long term Oral | 0.06 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 0.06 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 0.1 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 0.21 mg/m³ | General population | Systemic |
| | DNEL | Long term Inhalation | 1 mg/m³ | Workers | Systemic |
| amines, polyethylenepoly- | DNEL | Long term Dermal | 0.4 mg/kg | General | Systemic |

## SECTION 8: Exposure controls/personal protection

| | | | | | |
|---|---|---|---|---|---|
| | | | bw/day | population | |
| | DNEL | Long term Inhalation | 0.46 mg/m³ | General population | Systemic |
| | DNEL | Long term Oral | 0.65 mg/ kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 0.91 mg/ kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 1.59 mg/m³ | Workers | Systemic |
| | DNEL | Short term Dermal | 13 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Oral | 32 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Inhalation | 2542 mg/ m³ | General population | Systemic |
| | DNEL | Short term Inhalation | 8550 mg/ m³ | Workers | Systemic |
| | DNEL | Long term Dermal | 0.044 mg/ cm² | Workers | Local |
| | DNEL | Long term Dermal | 0.68 mg/ cm² | General population | Local |
| | DNEL | Short term Dermal | 1.59 mg/ cm² | General population | Local |
| 3,6,9,12-tetra-azatetradecamethylenediamine | DNEL | Long term Dermal | 0.4 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Inhalation | 0.46 mg/m³ | General population | Systemic |
| | DNEL | Long term Oral | 0.65 mg/ kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 0.91 mg/ kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 1.59 mg/m³ | Workers | Systemic |
| | DNEL | Short term Dermal | 13 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Oral | 32 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Inhalation | 2542 mg/ m³ | General population | Systemic |
| | DNEL | Short term Inhalation | 8550 mg/ m³ | Workers | Systemic |
| | DNEL | Long term Dermal | 0.044 mg/ cm² | Workers | Local |

# SECTION 8: Exposure controls/personal protection

| | | | | | |
|---|---|---|---|---|---|
| | DNEL | Long term Dermal | 0.68 mg/ cm² | General population | Local |
| | DNEL | Short term Dermal | 1.59 mg/ cm² | General population | Local |

**PNECs**

No PNECs available.

**8.2 Exposure controls**

**Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

**Skin protection**

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended : 1 - 4 hours (breakthrough time): nitrile rubber ; 4 - 8 hours (breakthrough time): Viton®/butyl rubber

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended : organic vapor (Type AX) and particulate filter

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

# SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

**Appearance**

**Physical state** : Liquid.

**Color** : White.

**Odor** : Unpleasant.

**Odor threshold** : Not available.

## SECTION 9: Physical and chemical properties

**Melting point/freezing point** : Not available.

**Initial boiling point and boiling range** : Not available.

**Flammability (solid, gas)** : Not available.

**Upper/lower flammability or explosive limits** : Not available.

**Flash point** : Closed cup: 94°C (201.2°F)

**Auto-ignition temperature** : Not applicable.

**Decomposition temperature** : Not available.

**pH** : Not applicable.

**Viscosity** : Not available.

**Solubility(ies)** : Very slightly soluble in the following materials: cold water.

**Solubility in water** : Not available.

**Miscible with water** : No.

**Partition coefficient: n-octanol/water** : Not applicable.

**Vapor pressure** :

| Ingredient name | Vapor Pressure at 20˚C | | | Vapor pressure at 50˚C | | |
|---|---|---|---|---|---|---|
| | mm Hg | kPa | Method | mm Hg | kPa | Method |
| 4,4'-methylenebis (cyclohexylamine) | 0 | 0 | OECD 104 | | | |
| amines, polyethylenepoly- | 0 | 0 | | | | |
| 3,6,9,12-tetra-azatetradecamethylenediamine | 0 | 0 | OECD 104 | | | |

**Evaporation rate** : Not available.

**Relative density** : Not available.

**Density** : 1.45 to 1.55 g/cm³ [20°C (68°F)]

**Vapor density** : Not available.

**Explosive properties** : Not available.

**Oxidizing properties** : Not available.

**Particle characteristics**

**Median particle size** : Not applicable.

**9.2 Other information**

**SADT** : Not available.

**SAPT** : Not available.

## SECTION 10: Stability and reactivity

**10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability** : The product is stable.

**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**10.4 Conditions to avoid** : No specific data.

**10.5 Incompatible materials** : No specific data.

## SECTION 10: Stability and reactivity

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| 4,4'-methylenebis (cyclohexylamine) | LC50 Inhalation Dusts and mists | Mouse | 400 mg/m³ | 4 hours |
| amines, polyethylenepoly- | LD50 Oral | Rat | 2540 mg/kg | - |

**Conclusion/Summary** : Not available.

**Acute toxicity estimates**

| Route | ATE value |
|---|---|
| Oral | 990.1 mg/kg |
| Dermal | 8461.54 mg/kg |

**Irritation/Corrosion**

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|---|---|---|---|---|
| 4,4'-methylenebis (cyclohexylamine) | Eyes - Severe irritant | Rabbit | - | 24 hours 10 uL | - |

**Conclusion/Summary** : Not available.

**Sensitization**

**Conclusion/Summary** : Not available.

**Mutagenicity**

**Conclusion/Summary** : Not available.

**Carcinogenicity**

**Conclusion/Summary** : Not available.

**Reproductive toxicity**

**Conclusion/Summary** : Not available.

**Teratogenicity**

**Conclusion/Summary** : Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

| Product/ingredient name | Category | Route of exposure | Target organs |
|---|---|---|---|
| 4,4'-methylenebis(cyclohexylamine) | Category 2 | - | - |

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

**Eye contact** : Causes serious eye damage.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Causes severe burns. May cause an allergic skin reaction.

**Ingestion** : Harmful if swallowed.

# SECTION 11: Toxicological information

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

**Ingestion** : Adverse symptoms may include the following:
stomach pains

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

Not available.

**Conclusion/Summary** : Not available.

**General** : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Other information** : Not available.

# SECTION 12: Ecological information

**12.1 Toxicity**

**Conclusion/Summary** : Not available.

**12.2 Persistence and degradability**

**Conclusion/Summary** : Not available.

**12.3 Bioaccumulative potential**

# SECTION 12: Ecological information

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| 4,4'-methylenebis (cyclohexylamine) | 2.03 | - | low |
| amines, polyethylenepoly- | -3.67 | - | low |
| 3,6,9,12-tetra-azatetradecamethylenediamine | -3.67 | - | low |

### 12.4 Mobility in soil

**Soil/water partition coefficient ($K_{OC}$)** : Not available.

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**12.6 Other adverse effects** : No known significant effects or critical hazards.

# SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

**Product**

**Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

**European waste catalogue (EWC)**

| Waste code | Waste designation |
|---|---|
| 08 04 09* | waste adhesives and sealants containing organic solvents or other hazardous substances |

**Packaging**

**Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

| Type of packaging | European waste catalogue (EWC) |
|---|---|
| 15 01 10* | packaging containing residues of or contaminated by hazardous substances |

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

| | ADR/RID | IMDG | IATA |
|---|---|---|---|
| **14.1 UN number** | UN2735 | UN2735 | UN2735 |
| **14.2 UN proper shipping name** | AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylenebis (cyclohexylamine)) | AMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylenebis (cyclohexylamine)) | Amines, liquid, corrosive, n.o. s. (4,4'-methylenebis (cyclohexylamine)) |
| **14.3 Transport hazard class(es)** | 8  | 8  | 8  |
| **14.4 Packing group** | III | III | III |
| **14.5 Environmental hazards** | Yes.<br><br>amines, polyethylenepoly-, 3,6,9,12-tetra-azatetradecamethylenediamine | Yes.<br><br>amines, polyethylenepoly-, 3,6,9,12-tetra-azatetradecamethylenediamine | Yes. The environmentally hazardous substance mark is not required. |

**Additional information**

**ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
**Hazard identification number** 80
**Limited quantity** 5 L
**Special provisions** 274
**Tunnel code** (E)
**ADR Classification Code:** C7

**IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
**Emergency schedules** F-A, S-B
**Special provisions** 223, 274

**IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
**Quantity limitation** Passenger and Cargo Aircraft: 5 L. Packaging instructions: 852. Cargo Aircraft Only: 60 L. Packaging instructions: 856. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y841.
**Special provisions** A3, A803

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to IMO instruments** : Not available.

# SECTION 15: Regulatory information

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

**EU Regulation (EC) No. 1907/2006 (REACH)**

**Annex XIV - List of substances subject to authorization**

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Other EU regulations**

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

**Ozone depleting substances (1005/2009/EU)**

Not listed.

**Prior Informed Consent (PIC) (649/2012/EU)**

Not listed.

**Persistent Organic Pollutants**

Not listed.

**Seveso Directive**

This product is controlled under the Seveso Directive.

**Danger criteria**

| Category |
|---|
| E1 |

**National regulations**

**Storage class (TRGS 510)** : 8A

**Hazardous incident ordinance**

This product is controlled under the Germany Hazardous Incident Ordinance.

**Danger criteria**

| Category | Reference number |
|---|---|
| E1 | 1.3.1 |

**Hazard class for water** : 3

**Technical instruction on air quality control** : TA-Luft Number 5.2.5: 27-100%

**AOX** : The product does not contain organically bound halogens which could lead to an AOX value in waste water.

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

## SECTION 15: Regulatory information

**Montreal Protocol**

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

**Inventory list**

| | | |
|---|---|---|
| **Australia** | : | All components are listed or exempted. |
| **Canada** | : | All components are listed or exempted. |
| **China** | : | All components are listed or exempted. |
| **Europe** | : | All components are listed or exempted. |
| **Japan** | : | All components are listed or exempted. |
| **New Zealand** | : | All components are listed or exempted. |
| **Philippines** | : | All components are listed or exempted. |
| **Republic of Korea** | : | All components are listed or exempted. |
| **Taiwan** | : | All components are listed or exempted. |
| **Turkey** | : | Not determined. |
| **United States** | : | All components are active or exempted. |
| **Viet Nam** | : | All components are listed or exempted. |

**15.2 Chemical Safety Assessment** : This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

| Classification | Justification |
|---|---|
| Acute Tox. 4, H302 | Calculation method |
| Skin Corr. 1B, H314 | Calculation method |
| Eye Dam. 1, H318 | Calculation method |
| Skin Sens. 1, H317 | Calculation method |
| STOT RE 2, H373 | Calculation method |
| Aquatic Acute 1, H400 | Calculation method |
| Aquatic Chronic 1, H410 | Calculation method |

**Full text of abbreviated H statements**

## SECTION 16: Other information

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

**Full text of classifications [CLP/GHS]**

| | |
|---|---|
| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Aquatic Acute 1 | AQUATIC HAZARD (ACUTE) - Category 1 |
| Aquatic Chronic 1 | AQUATIC HAZARD (LONG-TERM) - Category 1 |
| Eye Dam. 1 | SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 |
| Skin Corr. 1B | SKIN CORROSION/IRRITATION - Category 1B |
| Skin Sens. 1 | SKIN SENSITIZATION - Category 1 |
| Skin Sens. 1B | SKIN SENSITIZATION - Category 1B |
| STOT RE 2 | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 |

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