

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 30.01.2018

Version number 7

Revision: 30.01.2018

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

- **1.1 Product identifier**
- **Trade name:** Härter 025
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Hardening agent/ Curing agent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
FORBO Eurocol Deutschland GmbH
August-Roebling-Str. 2
D-99091 Erfurt
Tel.: +49 (0)361 73041-0
Fax: +49 (0)361 73041-92
Website: <http://www.forbo-bonding.de>
- **Further information obtainable from:**
Laboratory
Elisabeth Reinhardt
Elisabeth.Reinhardt@forbo.com
- **1.4 Emergency telephone number:** GGIZ +49-361-730730 (for Germany)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

Acute Tox. 4	H302	Harmful if swallowed.
Acute Tox. 4	H312	Harmful in contact with skin.
Acute Tox. 4	H332	Harmful if inhaled.
Skin Corr. 1B	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 2	H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
STOT RE 1	H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



- **Signal word** Danger
- **Hazard-determining components of labelling:**
2-piperazin-1-ylethylamine
Benzyl alcohol
3-aminomethyl-3,5,5-trimethylcyclohexylamine

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· Hazard statements*H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.**H314 Causes severe skin burns and eye damage.**H317 May cause an allergic skin reaction.**H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.**H372 Causes damage to organs through prolonged or repeated exposure.**H412 Harmful to aquatic life with long lasting effects.***· Precautionary statements***P201 Obtain special instructions before use.**P260 Do not breathe dusts or mists.**P280 Wear protective gloves/protective clothing/eye protection/face protection.**P310 Immediately call a POISON CENTER/doctor.**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.**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+P313 IF exposed or concerned: Get medical advice/attention.**P321 Specific treatment (see on this label).**P362+P364 Take off contaminated clothing and wash it before reuse.**P405 Store locked up.***· Additional information:***Restricted to professional users.***· 2.3 Other hazards****· Results of PBT and vPvB assessment****· PBT:** Not applicable.**· vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures**· Description:** Mixture of substances listed below with nonhazardous additions.**· Dangerous components:**

CAS: 100-51-6 EINECS: 202-859-9 Index number: 603-057-00-5	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2, H319	30-<40%
CAS: 140-31-8 EINECS: 205-411-0 Index number: 612-105-00-4	2-piperazin-1-ylethylamine ⚠ Acute Tox. 3, H311; ⚠ Repr. 2, H361fd; STOT RE 1, H372; ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 3, H412	30-<40%
CAS: 2855-13-2 EINECS: 220-666-8 Index number: 612-067-00-9	3-aminomethyl-3,5,5-trimethylcyclohexylamine ⚠ Skin Corr. 1B, H314; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	10-<20%

· Regulation (EC) No 648/2004 on detergents / Labelling for contents*perfumes (BENZYL ALCOHOL)***· Additional information:** For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Do NOT use solvents or thinners.
Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Wear self-contained respiratory protective device.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow to enter drains/ surface or ground water.
Do not allow to penetrate the ground/soil.
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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Dispose contaminated material as waste according to item 13.

· 6.4 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 disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Avoid contact with skin and eyes.

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· Information about fire - and explosion protection: No special measures required.**· 7.2 Conditions for safe storage, including any incompatibilities****· Storage:****· Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.**· Information about storage in one common storage facility:** Not required.**· Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Recommended storage temperature: +10 °C - +25 °C**· 7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.**· 8.1 Control parameters****· Ingredients 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.

· DNELs**100-51-6 Benzyl alcohol**

Dermal DNEL (worker) 9.5 mg/kg bw/day (worker)

Inhalative DNEL (worker) 90 mg/m³ (worker)**2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine**Inhalative DNEL (worker) 20.1 mg/m³ (worker)**140-31-8 2-piperazin-1-ylethylamine**

Dermal DNEL (worker) 3.3 mg/kg bw/day (worker)

Inhalative DNEL (worker) 80 mg/m³ (worker)**· PNECs****100-51-6 Benzyl alcohol**

PNEC aqua 0.1 mg/l (water)

2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

PNEC aqua 0.006 mg/l (water)

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140-31-8 2-piperazin-1-ylethylamine

PNEC aqua	0.058 mg/l (water)
PNEC sediment	215 mg/kg dw (sediment)

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Recommended filter device for short term use: Filter A**

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

Fluorocarbon rubber (Viton)

PVC gloves

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Duration of wearing with occasional contact (splashes): > 10 min

Duration of wearing with permanent contact: > 480 min

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Fluid
Colour:	Yellow tint

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· Odour:	Amine-like
· pH-value:	Not applicable.
· Change in condition Melting point/freezing point: Initial boiling point and boiling range:	Undetermined. > 200 °C
· Flash point:	> 100 °C (DIN EN ISO 3679)
· Flammability (solid, gas):	Not applicable.
· Ignition temperature:	Undetermined.
· Decomposition temperature:	Undetermined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Vapour pressure at 50 °C:	< 5 hPa
· Density at 20 °C: · Evaporation rate	1.03 g/cm ³ (DIN 51757) Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Undetermined.
· Viscosity: Dynamic at 20 °C:	70 mPas
· Solvent content: VOC (CE)	44.00 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with acids.
- **10.4 Conditions to avoid** Protect from heat and direct sunlight.
- **10.5 Incompatible materials:**
strong oxidizing agents
Reacts with strong acids and alkali.
- **10.6 Hazardous decomposition products:**
Formation of toxic gases is possible during heating or in case of fire.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed, in contact with skin or if inhaled.

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· LD/LC50 values relevant for classification:**140-31-8 2-piperazin-1-ylethylamine**

Oral	LD50	2140 mg/kg (rat)
Dermal	LD50	880 mg/kg (rabbit)

100-51-6 Benzyl alcohol

Oral	LD50	1230 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)

2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Oral	LD50	1030 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity**
Suspected of damaging fertility. Suspected of damaging the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
Causes damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information**· 12.1 Toxicity****· Aquatic toxicity:****140-31-8 2-piperazin-1-ylethylamine**

EC50/48h	32 mg/l (Daphnia magna)
EC50/72h	495 mg/l (Selenastrum capricornutum)
LC50/96h	2190 mg/l (Pimephales promelas)

100-51-6 Benzyl alcohol

EC50/48h	360 mg/l (Daphnia magna)
LC50/96h	460 mg/l (Pimephales promelas)

2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

EC50/24h	42 mg/l (Daphnia magna)
EC50/72h	37 mg/l (Scenedesmus suspicatus)
LC50/96h	110 mg/l (Leuciscus idus)

- **12.2 Persistence and degradability** No further relevant information available.

· Degree of elimination:**100-51-6 Benzyl alcohol**

Biodegradability	92-96 % / 28d (OECD 301C)
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2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Biodegradability 8 % / 28d (OECD 301A)

- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Behaviour in sewage processing plants:**

Type of test	Effective concentration	Method	Assessment
2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine			
EC50/3h	10.1 mg/l (activated sludge)	(OECD 303A)	

- **Additional ecological information:**

- **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Harmful to aquatic organisms

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Recommendation** Do not allow product to reach sewage system.

- **European waste catalogue**

08 01 11*: waste paint and varnish containing organic solvents or other dangerous substances

- **Uncleaned packaging:**

- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**

- **ADR, IMDG, IATA**

UN2735

- **14.2 UN proper shipping name**

- **ADR**

2735 POLYAMINES, LIQUID, CORROSIVE, N.O.S. (2-methylpentane-1,5-diamine, N-AMINOETHYLPIPERAZINE)

- **IMDG, IATA**

AMINES, LIQUID, CORROSIVE, N.O.S. (N-AMINOETHYLPIPERAZINE, ISOPHORONEDIAMINE)

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· **14.3 Transport hazard class(es)**· **ADR**· **Class** 8 (C7) Corrosive substances.· **Label** 8· **IMDG, IATA**· **Class** 8 Corrosive substances.· **Label** 8· **14.4 Packing group**· **ADR, IMDG, IATA** III· **14.5 Environmental hazards:**· **Marine pollutant:** No· **14.6 Special precautions for user**

Warning: Corrosive substances.

· **Danger code (Kemler):** 80· **EMS Number:** F-A,S-B· **Segregation groups** Alkalis· **14.7 Transport in bulk according to Annex II of****Marpol and the IBC Code** Not applicable.· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)** 5L· **Excepted quantities (EQ)** Code: E1· **Transport category** 3· **Tunnel restriction code** E· **IMDG**· **Excepted quantities (EQ)** Code: E1· **UN "Model Regulation":**UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S.,
8, III**SECTION 15: Regulatory information**· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction:** 3· **National regulations:**

Harmful to aquatic organisms

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

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- **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed. (94/33/EC)
Employment restrictions concerning pregnant and lactating women must be observed. (92/85/EC)
- **VOC (CE) 453.2 g/l**
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

- **Relevant phrases**
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H361D Suspected of damaging fertility. Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.
- **Department issuing SDS:** Laboratory
- **Contact:**
Dr. Amina Chnirheb
Amina.Chnirheb@forbo.com
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Repr. 2: Reproductive toxicity – Category 2
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
- *** Data compared to the previous version altered.**