

# SAFETY DATA SHEET

according to Regulation No. 1907/2006 (REACH) and  
Commission Regulation (EU) 2020/878

Hardener HG 353

Revision: 2.1  
Issue date: 2015-07-14  
Revision date: 2021-06-10

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

### 1.1 Product identifier

Chemical name/ trade name: **Hardener HG 353**  
 UFI: 4Q1W-Y0GS-200A-P3T7  
 Producer: **GRM Systems s.r.o.**  
 Address: **Olomouc, 77900, Technologická 886/28**  
 Distributor: **GRM Systems s.r.o.**  
 Address: **Olomouc, 77900, Technologická 886/28**

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

Intended use: Hardener for epoxy resin.  
 Uses advised against: The product must not be used in ways other than those listed in section 1.

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

Supplier of SDS: GRM Systems s.r.o.  
 Address: Olomouc, 77900, Technologická 886/28  
 Identification No.: 26916835  
 Tel: +420 585 431 734  
 www: <http://www.grm-systems.cz/>  
 Responsible person for this SDS: Anna Šťáhelová

### 1.4 Emergency telephone number

**Toxicological Information Centre: City Hospital, Dudley Rd, Birmingham, United Kingdom, Tel.: +44 121 507 4123, 844 892 0111**

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to the EC Regulation No. 1272/2008 (CLP):

Chronic (long term) aquatic hazard, category 1, H410 Very toxic to aquatic life with long lasting effects.  
 Acute aquatic toxicity, category 1, H400 Very toxic to aquatic life.  
 Serious eye damage, category 1, H318 Causes serious eye damage.  
 Skin corrosion, category 1, H314 Causes severe skin burns and eye damage.  
 Reproductive toxicity, category 2, H361 Suspected of damaging fertility or the unborn child <state specific effect if known > <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.  
 Skin sensitisation, category 1, H317 May cause an allergic skin reaction.  
 Acute Toxicity, category 4, H302 Harmful if swallowed.

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]:

Hazard pictogram(s):



Signal word(s): DANGER

Contain: 3-aminomethyl-3,5,5-trimethylcyclohexylamine, Phenol, 4-nonyl-, branched, Benzyl alcohol

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## Hazard statement(s):

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H361 Suspected of damaging fertility or the unborn child <state specific effect if known >  
<state route of exposure if it is conclusively proven that no other routes of exposure  
cause the hazard>.  
H410 Very toxic to aquatic life with long lasting effects.

## Precautionary statement(s):

P260 Do not breathe vapors.  
P264 Wash hands thoroughly with soap after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves / protective clothing / eye protection.  
P301/330/331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303/361/353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse  
skin with water [or shower].  
P305/351/338 IF IN EYES: Rinse cautiously with water for several minutes. Remove  
contact lenses, if present and easy to do. Continue rinsing.  
P310 Call a physician immediately.  
P391 Collect spillage.  
P405 Store locked up.  
P501 Dispose of contents / container according to the instructions in the safety data sheet  
section 13.

## Supplemental information:

### 2.3 Other hazards

This mixture does not contain any substances which are classified as PBT or vPvB  
The product contains SVHC-substance Phenol, 4-nonyl-, branched.  
Contains endocrine disruptor: Phenol, 4-nonyl-, branched

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

| Name of the component   | Content (weight %) | CAS<br>EINECS<br>Index N°<br>Reg. Number                         | Classification according to<br>Regulation (EC) No 1278/2008 (CLP)                  |  |
|---|--------------------|--|--|--|
|   |                    |  |  |  |
| 3-aminomethyl-3,5,5-trimethylcyclohexylamine  | 40-50              | 2855-13-2<br>220-666-8<br>612-067-00-9<br>01-2119514687-32-0000  | Acute Tox. 4<br>Acute Tox. 4<br>Aquatic Chronic 3<br>Skin Corr. 1B<br>Skin Sens. 1 | H312<br>H302<br>H412<br>H314<br>H317   |
| Phenol, 4-nonyl-, branched  | 20-30              | 84852-15-3<br>284-325-5<br>601-053-00-8<br>01-2119510715-45-0000 | Acute Tox. 4<br>Aquatic Acute 1<br>Aquatic Chronic 1<br>Repr. 2<br>Skin Corr. 1B   | H302<br>H400<br>H410<br>H361fd<br>H314 |
| Benzyl alcohol  | 10-15              | 100-51-6<br>202-859-9<br>603-057-00-5<br>01-2119492630-38-0000   | Acute Tox. 4<br>Acute Tox. 4   | H332<br>H302                           |
| 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-, reaction products with glycidyl tolyl ether | 15-20              | 90366-91-9<br>291-236-5  |  |  |

For full text of H-statements see SECTION 16.

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

|                             |  |
|-----------------------------|--|
| General advice:             | In case of accident or if you feel unwell, seek medical advice immediately (show the safety data sheet or label if possible).  |
| Inhalation:                 | Pause exposure. Move the affected person to fresh air quickly and for your own safety, do not let him walk! · Depending on the situation, it is recommended to rinse the oral cavity or nose with water · Change the victim if the substance is affected by clothing · Secure the victim against colds · Call an ambulance if necessary · or provide medical treatment due to the need for further monitoring for at least 24 hours.   |
| Skin contact:               | Take off contaminated clothing. Wash the affected area with plenty of lukewarm water. If there is no skin injury, it is advisable to use soap, soap solution or shampoo. Seek medical attention.   |
| Eye contact:                | Immediately flush eyes with running water, keep eyelids open (even by force); if the affected person has contact lenses, remove them immediately. Rinse for 10-30 minutes from the inner corner to the outer one so that the other eye is not affected. Never neutralize! Depending on the situation, call an ambulance or arrange for medical treatment as soon as possible. Everyone must be sent for examination, even in the event of a small impact.  |
| Ingestion:                  | DO NOT INDUCE VOMITING! There is a risk of perforation of the esophagus and stomach! IMMEDIATELY RINSE MOUTH WITH WATER AND DRINK 2-5 dl of cold water to reduce the thermal effect of the caustic. Due to the almost immediate effect on the mucous membranes, it is better to give tap water quickly and not delay in finding chilled liquids - with every minute of delay, the condition of the mucosa is irreparably damaged! Sodium or mineral water from which carbon dioxide gas may be released are not suitable. The affected person must not be forced to drink, especially if he already has pain in his mouth or throat. In this case, only allow the victim to rinse the mouth with water. DO NOT SUBMIT ACTIVATED CARBON! (blackening makes it more difficult to examine the condition of the mucous membranes of the digestive tract and has no beneficial effect on acids and alkalis). Do not give anything by mouth if the victim is unconscious or has convulsions. Depending on the situation, call an ambulance or get medical attention as soon as possible. |
| Protection of first aiders: | When providing first aid, it is necessary to ensure the safety of the rescuer and the rescued.   |

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

No data available.

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

Symptomatic treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

|                                 |   |
|---------------------------------|---|
| Suitable extinguishing media:   | Foam, extinguishing powder, CO <sub>2</sub> , water mist. |
| Unsuitable extinguishing media: | Direct water flow - could cause fire to spread.           |

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

Combustion products and hazardous gases: smoke, carbon monoxide, carbon dioxide.

### 5.3 Advice for firefighters

Respiratory units exposed to smoke or vapors must be equipped with respiratory and eye protection devices. When using in enclosed areas, an insulating respirator must be used. Containers exposed to fire cool with water mist. Collect extinguishing water separately, and avoid its penetration into the soil and water. Chemical protective clothing (EN 469).

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## SECTION 6: Accidental release measures

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

Wear suitable protective clothing, replace contaminated clothing. Avoid contact with skin and eyes, contamination of clothes and shoes. Ensure ventilation of the affected area. All persons who do not participate in rescue operations to a safe distance.

### 6.2 Environmental precautions

Prevent leakage into the environment, avoid ingress into surface water and sewers, soil and land. In case of leakage into the sewage system or water course, inform immediately its administrator, the police, the fire brigade or the environmental department.

### 6.3 Methods and material for containment and cleaning up

In case of leakage, localize and, if possible, absorb / remove mechanically. Residues or smaller amounts sweep / get absorbed into a suitable absorbent (universal sorbent, diatomaceous earth, soil, sand) and place in suitable containers and labeled for disposal transmit in accordance with applicable regulations.

### 6.4 Reference to other sections

See section 7, 8 a 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Use appropriate PPE. Use only in well-ventilated areas

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

Store in well sealed original containers in dry, cool and well-ventilated areas. Store in a vertical position to prevent leakage and dripping. Keep away from food, feed and medication.

### 7.3 Specific end use(s)

See section 1.2.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Exposure limits: According to national legislation of target country.

| Substance      | CAS      | Permissible exposure limits (mg/m <sup>3</sup> ) | Maximum permissible concentration (mg/m <sup>3</sup> ) | Note |
|----------------|----------|--|--|------|
| Benzyl-alcohol | 100-51-6 | 40   | 80   |      |

Substances with Community Exposure Limits: Union occupational exposure limit values in accordance with Directive 2000/39/EC (as amended).

| Substance          | CAS | Limit values             |                           | Note |
|--------------------|-----|--------------------------|---------------------------|------|
|                    |     | OEL (mg/m <sup>3</sup> ) | STEL (mg/m <sup>3</sup> ) |      |
| No data available. |     |                          |                           |      |

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DNEL:

## 3-aminomethyl-3,5,5-trimethylcyclohexylamine (CAS: 2855-13-2)

| Exposed group and route of exposure | Duration of exposure | Type of effect | Unit              | Value |
|-------------------------------------|----------------------|----------------|-------------------|-------|
| <b>Workers</b>                      |                      |                |                   |       |
| Inhalation                          | Long-term (chronic)  | systemic       | mg/m <sup>3</sup> | -     |
|                                     |                      | local          | mg/m <sup>3</sup> | 0.073 |
| <b>Consumers</b>                    |                      |                |                   |       |
| Oral                                | Long-term (chronic)  | systemic       | mg/kg bw/d        | 0.526 |

## Phenol, 4-nonyl-, branched (CAS: 84852-15-3)

| Exposed group and route of exposure | Duration of exposure | Type of effect | Unit              | Value |
|-------------------------------------|----------------------|----------------|-------------------|-------|
| <b>Workers</b>                      |                      |                |                   |       |
| Inhalation                          | Long-term (chronic)  | systemic       | mg/m <sup>3</sup> | 0.5   |
| Dermal                              | Long-term (chronic)  | systemic       | mg/kg bw/d        | 7.5   |
| <b>Consumers</b>                    |                      |                |                   |       |
| Inhalation                          | Long-term (chronic)  | systemic       | mg/m <sup>3</sup> | 0.4   |
| Dermal                              | Long-term (chronic)  | systemic       | mg/kg bw/d        | 3.8   |
| Oral                                | Long-term (chronic)  | systemic       | mg/kg bw/d        | 0.08  |

## Benzyl alcohol (CAS: 100-51-6)

| Exposed group and route of exposure | Duration of exposure | Type of effect | Unit              | Value |
|-------------------------------------|----------------------|----------------|-------------------|-------|
| <b>Workers</b>                      |                      |                |                   |       |
| Inhalation                          | Long-term (chronic)  | systemic       | mg/m <sup>3</sup> | 22    |
| Dermal                              | Long-term (chronic)  | systemic       | mg/kg bw/d        | 8     |
| <b>Consumers</b>                    |                      |                |                   |       |
| Inhalation                          | Long-term (chronic)  | systemic       | mg/m <sup>3</sup> | 5.4   |
| Dermal                              | Long-term (chronic)  | systemic       | mg/kg bw/d        | 4     |
| Oral                                | Long-term (chronic)  | systemic       | mg/kg bw/d        | 4     |

PNEC:

## 3-aminomethyl-3,5,5-trimethylcyclohexylamine (CAS: 2855-13-2)

| Component of the environment               | PNEC                           | Unit                          | Value             |       |
|--|--------------------------------|-------------------------------|-------------------|-------|
| <b>Water environment</b>                   | Freshwater                     | PNEC <sub>water, fresh.</sub> | mg/L              | 0.06  |
|  | Freshwater, occasional leakage | PNEC <sub>water, fresh.</sub> | mg/L              | 0.23  |
|  | Freshwater sediment            | PNEC <sub>sed., fresh.</sub>  | mg/kg sediment dw | 5.784 |
|  | Seawater                       | PNEC <sub>water, mar.</sub>   | mg/L              | 0.006 |
|  | Marine sediment                | PNEC <sub>sed., mar.</sub>    | mg/kg sediment dw | 0.578 |
| <b>Microbiological activity</b>            | Wastewater treatment plant     | PNEC <sub>sew. treat.</sub>   | mg/L              | 3.18  |
| <b>Terrestrial environment / organisms</b> | Soil                           | PNEC <sub>soil</sub>          | mg/kg soil dw     | 1.121 |

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## Phenol, 4-nonyl-, branched (CAS: 84852-15-3)

| Component of the environment        | PNEC                           | Unit                          | Value                        |       |
|-------------------------------------|--------------------------------|-------------------------------|------------------------------|-------|
| Water environment                   | Freshwater                     | PNEC <sub>water, fresh.</sub> | mg/L                         | 0.001 |
|                                     | Freshwater, occasional leakage | PNEC <sub>water, fresh.</sub> | mg/L                         | 0     |
|                                     | Freshwater sediment            | PNEC <sub>sed., fresh.</sub>  | mg/kg <sub>sediment dw</sub> | 4.62  |
|                                     | Seawater                       | PNEC <sub>water, mar.</sub>   | mg/L                         | 0.001 |
|                                     | Marine sediment                | PNEC <sub>sed., mar.</sub>    | mg/kg <sub>sediment dw</sub> | 1.23  |
| Microbiological activity            | Wastewater treatment plant     | PNEC <sub>sew. treat.</sub>   | mg/L                         | 9.5   |
| Terrestrial environment / organisms | Soil                           | PNEC <sub>soil</sub>          | mg/kg <sub>soil dw</sub>     | 2.3   |
| Food chain                          | Predators                      | PNEC <sub>oral.</sub>         | mg/kg <sub>food</sub>        | 2.36  |

## Benzyl alcohol (CAS: 100-51-6)

| Component of the environment        | PNEC                           | Unit                          | Value                        |       |
|-------------------------------------|--------------------------------|-------------------------------|------------------------------|-------|
| Water environment                   | Freshwater                     | PNEC <sub>water, fresh.</sub> | mg/L                         | 1     |
|                                     | Freshwater, occasional leakage | PNEC <sub>water, fresh.</sub> | mg/L                         | 2.3   |
|                                     | Freshwater sediment            | PNEC <sub>sed., fresh.</sub>  | mg/kg <sub>sediment dw</sub> | 5.27  |
|                                     | Seawater                       | PNEC <sub>water, mar.</sub>   | mg/L                         | 0.1   |
|                                     | Marine sediment                | PNEC <sub>sed., mar.</sub>    | mg/kg <sub>sediment dw</sub> | 0.527 |
| Microbiological activity            | Wastewater treatment plant     | PNEC <sub>sew. treat.</sub>   | mg/L                         | 39    |
| Terrestrial environment / organisms | Soil                           | PNEC <sub>soil</sub>          | mg/kg <sub>soil dw</sub>     | 0.456 |

DNELs and PNECs values for the other components of the mixture haven't been determined.

### 8.2 Exposure controls

Technical measures:

Technical measures and appropriate work procedures take precedence over personal protective equipment. Observe the usual hygiene principles. Do not eat, drink, smoke. Before breaks and after work wash your hands with warm water and soap.

#### Individual protection measures

Respiratory protection:

If the exposure limits are exceeded, when using dust, fog, aerosol, use a suitable filter (type ABEK -EN 14387+A1 - anti-gas and combined filters, type P -EN 143 - particle filters, type FFP3 / FFP2 - EN 149+A1 - Particle-based half masks; EN 142 - mouth masks).

Hand protection:

Protective working gloves (EN 374). Observe the manufacturer's exact instructions, including the time of use. Replace damaged gloves.

Eye / face protection:

Safety glasses with side-plates or facial shields (EN 166).

Skin protection:

Working clothes (EN ISO 13688) and footwear (EN ISO 20347). Protective clothing against liquid chemicals (EN 14605). Protective clothing against chemicals (EN ISO 14325).

Thermal hazards:

No data available.

Environmental exposure controls:

Avoid unnecessary releases into the environment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state: Liquid  
Colour: Colourless  
Odour: No data available.

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Odour threshold: No data available.  
pH : 11  
Melting point / freezing point (°C): No data available.  
Boiling point or initial boiling point and boiling range (°C): 208  
Flash point (°C): 96  
Evaporation rate: No data available.  
Flammability (gases, liquids and solids): No data available.

Lower and upper explosion limit: No data available.  
Vapour pressure (20 °C): No data available.  
Vapour pressure (50 °C): No data available.  
Relative vapour density: No data available.  
Density and/or relative density (g/cm<sup>3</sup>, 20 °C): 1  
Solubility (20 °C): No data available.  
Partition coefficient n-octanol/water (log value): No data available.  
Auto-ignition temperature: No data available.  
Decomposition temperature: No data available.  
Kinematic viscosity: No data available.  
Refractive index (20 °C): No data available.  
Oxidising properties: No data available.  
Explosive properties: No data available.

## 9.2 Other information

VOC (%): 0  
Dry matter content: No data available.  
Additional information:

### 9.2.1 Information with regard to physical hazard classes

The product has no physical hazards.

### 9.2.2 Other safety characteristics:

mechanical sensitivity: No data available.  
self-accelerating polymerisation temperature: No data available.  
formation of explosible dust/air mixtures: No data available.

acid/alkaline reserve: No data available.  
evaporation rate: No data available.  
miscibility: No data available.  
conductivity: No data available.  
corrosiveness: No data available.  
gas group: No data available.  
redox potential: No data available.  
radical formation potential: No data available.  
photocatalytic properties: No data available.

## SECTION 10: Stability and reactivity

**10.1 Reactivity** Not expected under proper conditions of use.

**10.2 Chemical stability** Stable under normal conditions.

**10.3 Possibility of hazardous reactions** Dangerous reactions are not known.

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- 10.4 Conditions to avoid** Comply with the handling and storage conditions set out in Section 7.
- 10.5 Incompatible materials** Strong oxidizing agents, strong acids, strong alkalines.
- 10.6 Hazardous decomposition products** Hazardous decomposition products are not known.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 Individual components

#### 3-aminomethyl-3,5,5-trimethylcyclohexylamine (CAS: 2855-13-2)

Acute toxicity:

| Test type           | Results   | Exposure               | Tested organisms |
|---------------------|---|------------------------|------------------|
| OECD 401, key study | 1 030 mg/kg bw  | oral: gavage           | rat              |
| OECD 402, key study | > 2 000 mg/kg bw  | dermal                 | rat              |
| OECD 403, key study | >= 1.07 - <= 5.01 mg/L air (analytical)<br>> 5.01 mg/L air (analytical)<br>> 5.01 mg/L air (analytical) | inhalation:<br>aerosol | rat              |

Serious eye damage / irritation:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

Skin corrosion / irritation:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

Respiratory or skin sensitisation:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

STOT - single exposure:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

STOT - repeated exposure:

| Test type           | Results   | Exposure   | Tested organisms |
|---------------------|---|------------|------------------|
| OECD 408, key study | 160 mg/kg bw/day (nominal), LOAEL<br>59 mg/kg bw/day (actual dose received), NOAEL<br>62 mg/kg bw/day (actual dose received), NOAEL | oral       | rat              |
| supporting study    | 18 mg/m <sup>3</sup> air, LOEC  | inhalation | rat              |



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Carcinogenicity:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

Germ cell mutagenicity:

| Test type           | Results  | Exposure          | Tested organisms |
|---------------------|----------|-------------------|------------------|
| OECD 474, key study | negative | oral: unspecified | mouse            |

Reproductive toxicity:

| Test type                  | Results  | Exposure             | Tested organisms |
|----------------------------|--|----------------------|------------------|
| OECD 421, supporting study | > 160 mg/kg bw/day, NOAEL<br>> 160 mg/kg bw/day, NOAEL | oral: drinking water | rat              |

Aspiration hazard:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

**Phenol, 4-nonyl-, branched (CAS: 84852-15-3)**

Acute toxicity:

| Test type | Results  | Exposure     | Tested organisms |
|-----------|--|--------------|------------------|
| key study | 1 412 mg/kg bw, LD50<br>1 246 mg/kg bw, LD50<br>1 648 mg/kg bw, LD50 | oral: gavage | rat              |

Serious eye damage / irritation:

| Test type           | Results   | Exposure | Tested organisms |
|---------------------|-----------|----------|------------------|
| OECD 405, key study | corrosive | Eye      | rabbit           |

Skin corrosion / irritation:

| Test type                    | Results                 | Exposure | Tested organisms |
|------------------------------|-------------------------|----------|------------------|
| OECD 404, weight of evidence | Category 1B (corrosive) | Skin     | rabbit           |

Respiratory or skin sensitisation:

| Test type           | Results         | Exposure | Tested organisms |
|---------------------|-----------------|----------|------------------|
| OECD 406, key study | not sensitising | Skin     | guinea pig       |

STOT - single exposure:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

STOT - repeated exposure:

| Test type | Results                            | Exposure | Tested organisms |
|-----------|------------------------------------|----------|------------------|
| key study | 650 ppm, NOAEL<br>2 000 ppm, LOAEL | oral     | rat              |

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Carcinogenicity:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

Germ cell mutagenicity:

| Test type                  | Results  | Exposure          | Tested organisms |
|----------------------------|----------|-------------------|------------------|
| OECD 474, supporting study | negative | oral: unspecified | mouse            |

Reproductive toxicity:

| Test type                    | Results   | Exposure   | Tested organisms |
|------------------------------|---|------------|------------------|
| OECD 416, weight of evidence | 15 mg/kg bw/day (nominal),<br>NOAEL<br>15 mg/kg bw/day (nominal),<br>LOAEL<br>50 mg/kg bw/day (nominal),<br>LOAEL | oral: feed | rat              |

Aspiration hazard:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

## Benzyl alcohol (CAS: 100-51-6)

Acute toxicity:

| Test type           | Results  | Exposure               | Tested organisms |
|---------------------|--|------------------------|------------------|
| key study           | 1.55 mL/kg bw, LD50<br>1 mL/kg bw, other:                                  | oral: gavage           | rat              |
| weight of evidence  | > 2 000 mg/kg bw, LD50   | dermal                 | rabbit           |
| OECD 403, key study | > 4 178 mg/m <sup>3</sup> air, LC50<br>3 297 mg/m <sup>3</sup> air, other: | inhalation:<br>aerosol | rat              |

Serious eye damage / irritation:

| Test type         | Results               | Exposure | Tested organisms |
|-------------------|-----------------------|----------|------------------|
| other information | moderately irritating | Eye      | rabbit           |

Skin corrosion / irritation:

| Test type         | Results               | Exposure | Tested organisms |
|-------------------|-----------------------|----------|------------------|
| other information | moderately irritating | Skin     | guinea pig       |

Respiratory or skin sensitisation:

| Test type          | Results              | Exposure | Tested organisms |
|--------------------|----------------------|----------|------------------|
| weight of evidence | GHS criteria not met | Skin     | other:           |

STOT - single exposure:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

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STOT - repeated exposure:

| Test type           | Results   | Exposure   | Tested organisms |
|---------------------|---|------------|------------------|
| key study           | 400 mg/kg bw/day (actual dose received), NOAEL  | oral       | rat              |
| OECD 412, key study | 1 072 mg/m <sup>3</sup> air (analytical), NOAEC | inhalation | rat              |

Carcinogenicity:

| Test type         | Results                      | Exposure      | Tested organisms |
|-------------------|------------------------------|---------------|------------------|
| other information | other: >= 10 - <= 15, other: | in-vitro test | other:           |

Germ cell mutagenicity:

| Test type         | Results | Exposure   | Tested organisms        |
|-------------------|---------|------------|-------------------------|
| other information | other:  | oral: feed | Drosophila melanogaster |

Reproductive toxicity:

| Test type | Results  | Exposure     | Tested organisms |
|-----------|--|--------------|------------------|
| key study | 200 mg/kg bw/day (actual dose received), NOAEL<br>800 mg/kg bw/day (actual dose received), NOAEL | oral: gavage | mouse            |

Aspiration hazard:

| Test type | Results            | Exposure | Tested organisms |
|-----------|--------------------|----------|------------------|
|           | No data available. |          |                  |

## Mixture:

|                                    |  |
|------------------------------------|--|
| Acute toxicity:                    | Harmful if swallowed.                                      |
| Serious eye damage / irritation:   | Causes serious eye damage.                                 |
| Skin corrosion / irritation:       | Causes severe skin burns and eye damage.                   |
| Respiratory or skin sensitisation: | May cause an allergic skin reaction.                       |
| STOT - single exposure:            | The product does not meet the criteria for classification. |
| STOT - repeated exposure:          | The product does not meet the criteria for classification. |
| Carcinogenicity:                   | The product does not meet the criteria for classification. |
| Germ cell mutagenicity:            | The product does not meet the criteria for classification. |
| Reproductive toxicity:             | Suspected of damaging fertility or the unborn child .      |
| Aspiration hazard:                 | The product does not meet the criteria for classification. |

## 11.2 Information on other hazards Endocrine disrupting properties

Contains endocrine disruptor: Phenol, 4-nonyl-, branched

## Other information:

No data available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.  
Very toxic to aquatic life.

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## 3-aminomethyl-3,5,5-trimethylcyclohexylamine (CAS: 2855-13-2)

| Toxicity                        | Tested organisms   | Results  | Test type |
|---------------------------------|--|--|-----------|
| Acute toxicity to fish          | <i>Leuciscus idus</i>  | 140 mg/L, LC100 / 96 h<br>110 mg/L, LC50 / 96 h<br>70 mg/L, LC0 / 96 h   |           |
| Acute toxicity to invertebrates | <i>Daphnia magna</i>   | 66.4 mg/L, EC100 / 48 h<br>23 mg/L, EC50 / 48 h<br>8.3 mg/L, NOEC / 48 h<br>27 mg/L, EC50 / 24 h                           | OECD 202  |
| Acute toxicity to aquatic algae | <i>Desmodesmus subspicatus</i><br>(previous name: <i>Scenedesmus subspicatus</i> ) | 37 mg/L, EC50 / 72 h<br>3.1 mg/L, EC10 / 72 h<br>> 50 mg/L, EC50 / 72 h<br>11.2 mg/L, EC10 / 72 h<br>1.5 mg/L, NOEC / 72 h |           |

## Phenol, 4-nonyl-, branched (CAS: 84852-15-3)

| Toxicity                        | Tested organisms   | Results  | Test type |
|---------------------------------|--|--|-----------|
| Acute toxicity to fish          | <i>Pimephales promelas</i>   | 128 µg/L, LC50 / 96 h<br>96 µg/L, EC50 / 96 h  |           |
| Acute toxicity to invertebrates | <i>Daphnia magna</i>   | 84.4 µg/L, EC50 / 48 h                         |           |
| Acute toxicity to aquatic algae | <i>Desmodesmus subspicatus</i><br>(previous name: <i>Scenedesmus subspicatus</i> ) | 1.3 mg/L, EC50 / 72 h<br>0.5 mg/L, EC10 / 72 h |           |

## Benzyl alcohol (CAS: 100-51-6)

| Toxicity                        | Tested organisms  | Results  | Test type |
|---------------------------------|---|--|-----------|
| Acute toxicity to fish          | <i>Pimephales promelas</i>  | 770 mg/L, LC50 / 1 h<br>770 mg/L, LC50 / 24 h<br>770 mg/L, LC50 / 48 h<br>460 mg/L, LC50 / 72 h<br>460 mg/L, LC50 / 96 h |           |
| Acute toxicity to invertebrates | <i>Daphnia magna</i>  | 230 mg/L, EC50 / 48 h  | OECD 202  |
| Acute toxicity to aquatic algae | <i>Pseudokirchneriella subcapitata</i><br>(previous names: <i>Raphidocelis subcapitata</i> , <i>Selenastrum capricornutum</i> ) | 770 mg/L, EC50 / 72 h<br>310 mg/L, NOEC / 72 h<br>500 mg/L, EC50 / 72 h<br>310 mg/L, NOEC / 72 h                         | OECD 201  |

- 12.2 Persistence and degradability** No data available.
- 12.3 Bioaccumulative potential** No data available.
- 12.4 Mobility in soil** No data available.
- 12.5 Results of PBT and vPvB assessment** This mixture does not contain any substances which are classified as PBT or vPvB
- 12.6 Endocrine disrupting properties** Contains endocrine disruptor: Phenol, 4-nonyl-, branched
- 12.7 Other adverse effects** No data available.

## SECTION 13: Disposal considerations

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## 13.1 Waste treatment methods

|  |   |
|--|---|
| Catalogue No. of mixture waste:  | 08 01 11 waste paint and varnish containing organic solvents or other dangerous substances  |
| Waste codes / waste designations according to LoW:                     | 15 01 10 packaging containing residues of or contaminated by dangerous substances   |
| Recommended procedure for mixture waste disposal:                      | No data available.  |
| Recommended procedure for packaging disposal:                          | Empty containers must be disposed of in accordance with the applicable waste legislation. After perfect cleaning, the packaging can be used as a secondary raw material for the same purpose. Recommended way of disposing of recycling, burning in a hazardous waste incinerator or storing hazardous waste. |
| Physical / chemical properties that may affect waste treatment method: | No data available.  |
| Sewage disposal-relevant information:                                  | Protect against weathering. Prevent leakage of waste into the water / soil / sewage system. In case of leakage, inform the competent authorities.   |
| Other disposal recommendations:  | Dispose of in accordance with applicable legislation.   |

## SECTION 14: Transport information

|      | Type of transport          | Land transport ADR/RID   | Sea transport IMDG   | Air Transport ICAO / IATA  |
|------|----------------------------|--|--|--|
| 14.1 | UN number or ID number     | 2735   | 2735   | 2735   |
| 14.2 | UN proper shipping name    | AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, Phenol, 4-nonyl-, branched) | AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, Phenol, 4-nonyl-, branched) | AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine, Phenol, 4-nonyl-, branched) |
| 14.3 | Transport hazard class(es) | 8  | 8  | 8  |
|      | Classification code        | 80   | -  | -  |
|      | EmS                        | -  | F-A, S-B   | -  |
|      | Packaging instructions     | P001 / IBC03 / LP01 / R001   | P001;LP01 / IBC03  | (passanger/cargo)<br>852 / 856   |
|      | Labels                     | 8  |  |  |
|      |                            |                          |  |  |
| 14.4 | Packing group              | III  | III  | III  |

14.5 Environmental hazards No data available.

14.6 Special precautions for user No data available.

14.7 Maritime transport in bulk according to IMO instruments Not specified.

Other information

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| Type of transport        | Land transport ADR/RID | Sea transport IMDG | Air Transport ICAO / IATA |
|--------------------------|------------------------|--------------------|---------------------------|
| Limited quantities:      | 5 L                    | 5 L                | Y841                      |
| Excepted quantities:     | E1                     | E1                 | E1                        |
| Transport category:      | 3                      | -                  | -                         |
| Tunnel restriction code: | (E)                    | -                  | -                         |
| Segregation group:       | -                      | SGG18;SG35         | -                         |

## SECTION 15: Regulatory information

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

Regulation (EC) No. 1272/2008 (CLP) on classification, labelling and packaging of substances and mixtures, ...  
Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), ...

Applicable national regulations.

The product contains SVHC-substance Phenol, 4-nonyl-, branched.

### 15.2 Chemical safety assessment

A chemical safety assessment has been performed.

## SECTION 16: Other information

### Complete text of all classifications and hazard classes referred to in SECTION 3

**Hazard class:**  
Acute Tox. 4 - Acute Toxicity, category 4  
Aquatic Acute 1 - Acute aquatic toxicity, category 1  
Aquatic Chronic 1 - Chronic (long term) aquatic hazard, category 1  
Aquatic Chronic 3 - Chronic (long term) aquatic hazard, category 3  
Repr. 2 - Reproductive toxicity, category 2  
Skin Corr. 1B - Skin corrosion, category 1B  
Skin Sens. 1 - Skin sensitisation, category 1

**H-statements:**  
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.  
H332 Harmful if inhaled.  
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.

### Abbreviations:

ADN Inland waterways  
ADR Accord Dangereuses Route  
CAS Chemical Abstracts Service  
DNEL Derived no-effect level  
EC50 Effect concentration for 50%  
EINECS European Inventory of Existing Commercial Chemical Substances  
EL50 Effect level for 50%  
IATA International Air Transport Association  
IC50 Inhibition concentration for 50%  
ICAO International Civil Aviation Organization  
IL 50 Inhibition load for 50%  
IMDG International Maritime Dangerous Goods  
LC50 Lethal concentration for 50%

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|       |   |
|-------|---|
| LD50  | Lethal dose for 50%   |
| LL50  | Lethal load for 50%   |
| LOAEC | Lowest observable adverse effect concentration                              |
| LOAEL | Lowest observable adverse effect level                                      |
| LOEC  | Lowest observable effect concentration                                      |
| LOEL  | Lowest observable effect level  |
| NEL   | No effect level   |
| NOAEC | No observable adverse effect concentration                                  |
| NOAEL | No observable adverse effect level  |
| NOEC  | No observable effect concentration  |
| NOEL  | No observable effect level  |
| NPK-P | Maximum permissible concentration   |
| OEL   | Occupational Exposure Limit (workplace exposure limit - 8 hours / shift)    |
| PBT   | Persistent, bioaccumulative and toxic                                       |
| PEL   | Permissible exposure limits   |
| PNEC  | Predicted no-effect concentration   |
| RID   | Regulations for the International Carriage of Dangerous Goods by Rail       |
| SCL   | Specific concentration limits   |
| STEL  | Short Term Exposure Limit (short exposure - corresponds to approx. 15 min.) |
| TT    | Toxic threshold   |
| VOC   | Volatile organic substances   |
| vPvB  | Very persistent and very bioaccumulative                                    |
| WGK   | Hazard classes for water (Wassergefährdungsklassen)                         |

## Changes to previous version SDS:

This revision follows the revision: 2018-08-23 and complies with Regulations (EC) No. 1907/2006 (REACH) and No. 1272/2008 (CLP).

Key literature references and sources for data: Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH), as amended. Regulation (EC) No 1272/2008 of the European Parliament and of the Council, as amended. Act No. 350/2011 Coll., On chemical substances and chemical mixtures, as amended. Principles for providing first aid during exposure to chemical substances (Assoc. Prof. Daniela Pelclová, MD, CSc., Alexandr Fuchs, MD, CSc., Miroslava Hornychová, MD, CSc., Zdeňka Trávníčková, MD, CSc., Jiřina Fridrichovská, prom. Chem. ). Data from the manufacturer of the substance / mixture, if available - data from the registration dossier. (1)

Classification was performed by calculation method.

## Instructions for training:

Workers who come into contact with dangerous substances must be aware of the effects of these substances, how they are treated, and protective measures to the extent necessary.

Furthermore, they must be familiar with the first aid principles, with the necessary sanitation procedures and with the procedures for disaster and accident elimination.

The person handling this chemical product must be familiar with the safety rules and the data given in the safety data sheet.

If a hazardous chemical / mixture is classified as corrosive or toxic, workers should be made aware of the Corrosive / Toxic Chemicals / Mixing Rules.

Persons carrying dangerous substances must be familiar with the ADR / RID accident instructions.

## Other information:

The above information describes the conditions for safe handling of the product and corresponds to the current knowledge of the manufacturer and serves as instruction for the training of the persons handling the product.

The manufacturer carries guarantee the above-described properties of the product at the recommended use.

The user is responsible for determining the suitability of the product for specific purposes and adapting security measures if such application is contrary to the manufacturer's recommendations.