

**Safety Data Sheet**

According to Regulation EC No. 1907/2006

**Hardener GP 421**

Date of issue/Date of revision: 15.02.2022

en / GB - Version 1.0

**1. Identification of the substance/preparation and of the company/undertaking****1.1 Identification of the substance or preparation:**

Hardener GP 421

**1.2 Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture:** model building material**Uses advised against:** Hardener**1.3 Company/undertaking identification**

Company name: Gößl + Pfaff GmbH  
 Street: Münchener Str. 13  
 Place: 85123 Karlskron/Brautlach  
 Telephone: +49 (0) 8450 / 932-0  
 Fax.: +49 (0) 8450 / 932-13  
 Contact person: Management: Mr. Gößl, Mr. Pfaff  
 E-Mail: info@goessl-pfaff.de  
 Internet: [www.goessl-pfaff.de](http://www.goessl-pfaff.de)  
 Responsible Department: Management

**1.4 Emergency telephone****Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0) 6132-84463****2. Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation****Hazard categories:**

Acute toxicity: Acute Tox. 4

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 3

**Hazard Statements:**

Harmful if swallowed.

Harmful in contact with skin.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

Harmful to aquatic life with long lasting effects.

**2.2. Label elements****GB CLP Regulation****Hazard components for labelling**

3-aminomethyl-3,5,5-trimethylcyclohexylamine;

Polyoxypropylenetriamine

**Signal word:** Danger**Pictograms:**

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#### Hazard statements

H302+H312 Harmful if swallowed or in contact with skin.  
 H314 Causes severe skin burns and eye damage.  
 H317 May cause an allergic skin reaction.  
 H412 Harmful to aquatic life with long lasting effects.

#### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310 Immediately call a POISON CENTER/doctor.  
 P501 Dispose of contents/container to an appropriate recycling or disposal facility.

#### 2.3 Other hazards

None known.

### 3. Composition/information on ingredients

#### 3.2. Mixtures

##### Chemical characterization

Amine hardener

##### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
<b>2855-13-2</b>	<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>			<b>75 – &lt; 80 %</b>
	220-666-8	612-067-00-9	01-2119514687-32	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H318 H317 H412			
<b>39423-51-3</b>	<b>Polyoxypropylenetriamine</b>			<b>20 – &lt; 25 %</b>
	500-105-6		01-2119556886-20	
	Acute Tox. 4, Acute Tox. 4, Eye Dam. 1, Aquatic Chronic 2; H312 H302 H318 H411			

Full text of H and EUH statements: see section 16.

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
<b>2855-13-2</b>	<b>220-666-8</b>	<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>	<b>75 – &lt; 80 %</b>
	dermal: LD50 = 1840 mg/kg; oral: LD50 = 1030 mg/kg		
<b>39423-51-3</b>	<b>500-105-6</b>	<b>Polyoxypropylenetriamine</b>	<b>20 – &lt; 25 %</b>
	dermal: LD50 = > 1000 mg/kg; oral: LD50 = 550 mg/kg		

#### Further Information

none

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#### 4. First aid measures

##### 4.1. Description of first aid measures

###### General information

Remove contaminated, saturated clothing immediately.  
Remove affected person from the danger area and lay down.

###### After inhalation

Move to fresh air in case of accidental inhalation of vapours or decomposition products.  
In case of respiratory tract irritation, consult a physician.

###### After contact with skin

Wash with plenty of water/soap.  
If skin irritation or rash occurs: Get medical advice/attention.

###### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

###### After ingestion

Rinse mouth immediately and drink plenty of water.  
Never give anything by mouth to an unconscious person or a person with cramps.  
Call a physician immediately.  
Do NOT induce vomiting.

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

There are no data available on the mixture itself.

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

There are no data available on the mixture itself.

#### 5. Fire-fighting measures

##### 5.1. Extinguishing media

###### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.  
Foam, Carbon dioxide (CO<sub>2</sub>), Dry extinguishing powder, Water spray jet

###### Unsuitable extinguishing media

Full water jet

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

In case of fire may be liberated:  
Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide, Carbon dioxide (CO<sub>2</sub>)

##### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

###### Additional information

Collect contaminated fire extinguishing water separately.  
Do not allow entering drains or surface water.

#### 6. Accidental release measures

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

###### General advice

In case of vapour formation use respirator.  
Provide adequate ventilation.  
Keep away from sources of ignition - No smoking.

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#### 6.2. Environmental precautions

Clear contaminated areas thoroughly.  
Do not allow to enter into surface water or drains.  
Local authorities should be advised if significant spillages cannot be contained.

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

##### Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).  
Take up mechanically, placing in appropriate containers for disposal.

#### 6.4. Reference to other sections

Wear personal protection equipment (refer to section 8).

### 7. Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

Keep container tightly closed.  
Provide adequate ventilation.  
Avoid contact with skin, eyes and clothes.

##### Advice on protection against fire and explosion

No special fire protection measures are necessary.

##### Advice on general occupational hygiene

Do not breathe vapour.  
Wash hands before breaks and after work.  
Do not eat, drink or smoke when using this product.  
Avoid contact with skin, eyes and clothes.  
Remove and wash contaminated clothes before re-use.

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

##### Requirements for storage rooms and vessels

Keep/Store only in original container.  
Keep container tightly closed in a cool, well-ventilated place.  
Protect from direct sunlight.

##### Further information on storage conditions

Keep away from food, drink and animal feedingstuffs

#### 7.3. Specific end use(s)

There are no data available on the mixture itself.

### 8. Exposure controls/personal protection

#### 8.1. Control parameters

##### DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
<b>2855-13-2</b>	<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>		
Worker DNEL, long-term	inhalation	local	0,073 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	local	0,073 mg/m <sup>3</sup>
<b>39423-51-3</b>	<b>Polyoxypropylenetriamine</b>		
Worker DNEL, long-term	dermal	systemic	1,6 mg/kg bw/day
Worker DNEL, long-term	inhalation	systemic	14 mg/m <sup>3</sup>

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**PNEC values**

CAS No	Substance	
<b>Environmental compartment</b>		<b>Value</b>
<b>2855-13-2</b>	<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>	
Freshwater		0,06 mg/l
Marine water		0,006 mg/l
Freshwater sediment		5,784 mg/kg
Micro-organisms in sewage treatment plants (STP)		3,18 mg/l
Soil		1,121 mg/kg
<b>39423-51-3</b>	<b>Polyoxypropylenetriamine</b>	
Freshwater		0,0044 mg/l
Marine water		0,00044 mg/l
Freshwater sediment		0,02 mg/kg
Marine sediment		0,002 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		0,002 mg/kg

**8.2. Exposure controls****Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Tightly fitting goggles

**Hand protection**

Protective gloves resistant to chemicals made off nitrile, Minimum coat thickness 0.4 mm,

Permeation resistance (wear duration) approx. 480 minutes

butyl rubber (Butyl) - = 0.7 mm thickness

This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.

Requirements can vary as a function of the use.

Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

**Skin protection**

Wear suitable protective clothing.

Safety Shoes

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

If product is sprayed, use fresh-air breathing apparatus or (only short-term use) a combination filter A2-P2.

**Environmental exposure controls**

There are no data available on the mixture itself.

**9. Physical and chemical properties****9.1 Information on basic physical and chemical properties**

Physical state: Liquid  
 Colour: light yellow  
 Odour: not determined

**Changes in the physical state**

Melting point/freezing point: not determined  
 Boiling point or initial boiling point and boiling range: > 170 °C  
 Flash point: > 55 °C

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#### Flammability

Solid/liquid: not applicable  
Gas: not applicable

#### Explosive properties

Product does not present an explosion hazard.

Lower explosion limits: not determined  
Upper explosion limits: not determined  
Auto-ignition temperature: not determined  
Decomposition temperature: not determined  
pH-Value: (at 20 °C) 12  
Viscosity / dynamic: ca. 110 mPa·s  
Water solubility: Immiscible  
Partition coefficient n-octanol/water: not determined  
Density: ca. 0,96 g/cm<sup>3</sup>  
Relative vapour density: not determined  
Particle characteristics: not applicable

#### 9.2. Other information

##### Information with regard to physical hazard classes

Oxidizing properties  
not applicable

##### Other safety characteristics

Evaporation rate: not determined

##### Further Information

There are no data available on the mixture itself.

## 10. Stability and reactivity

### 10.1. Reactivity

The product is stable under storage at normal ambient temperatures.

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

Exothermic reaction with: Acids

### 10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.  
Protect from direct sunlight.

### 10.5. Incompatible materials

Oxidising agent, strong, Acids, Alkali (lye)

### 10.6. Hazardous decomposition products

Ammonia, Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide, Carbon dioxide

#### Further information

The product is stable under storage at normal ambient temperatures.

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#### 11. Toxicological information

##### 11.1. Information on hazard classes as defined in GB CLP Regulation

###### Acute toxicity

Harmful if swallowed.  
Harmful in contact with skin.

###### ATEmix calculated

ATE (oral) 848,6 mg/kg; ATE (dermal) 1579,6 mg/kg

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
2855-13-2	<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>					
	oral	LD50	1030 mg/kg	Rat		
	dermal	LD50	1840 mg/kg	Rabbit		
39423-51-3	<b>Polyoxypropylenetriamine</b>					
	oral	LD50	550 mg/kg	Rat		
	dermal	LD50	> 1000 mg/kg	Rat		

###### Irritation and corrosivity

Causes severe skin burns and eye damage.  
Causes serious eye damage.

###### Sensitising effects

May cause an allergic skin reaction. (3-aminomethyl-3,5,5-trimethylcyclohexylamine)

###### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

###### STOT-single exposure

Based on available data, the classification criteria are not met.

###### STOT-repeated exposure

Based on available data, the classification criteria are not met.

###### Aspiration hazard

Based on available data, the classification criteria are not met.

###### Specific effects in experiment on an animal

There are no data available on the mixture itself.

###### Additional information on tests

There are no data available on the mixture itself.

###### Practical experience

There are no data available on the mixture itself.

##### 11.2. Information on other hazards

###### Endocrine disrupting properties

There are no data available on the mixture itself.

###### Other information

There are no data available on the mixture itself.

#### 12. Ecological information

##### 12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
2855-13-2	<b>3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>					
	Acute fish toxicity	LC50	110 mg/l	96 h	Leuciscus idus (golden orfe)	
39423-51-3	<b>Polyoxypropylenetriamine</b>					
	Acute fish toxicity	LC50	>100 mg/l	96 h	Fish	
	Acute algae toxicity	ErC50	4,4 mg/l	72 h	algae	
	Acute crustacea toxicity	EC50	13 mg/l	48 h	Daphnia magna (Big water flea)	

#### 12.2. Persistence and degradability

There are no data available on the mixture itself.

#### 12.3. Bioaccumulative potential

There are no data available on the mixture itself.

#### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	1,9
39423-51-3	Polyoxypropylenetriamine	-1,13

#### 12.4. Mobility in soil

There are no data available on the mixture itself.

#### 12.5. Results of PBT and vPvB assessment

The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

#### 12.6. Endocrine disrupting properties

There are no data available on the mixture itself.

#### 12.7. Other adverse effects

There are no data available on the mixture itself.

#### Further information

Do not allow to enter into surface water or drains.

### 13. Disposal considerations

#### 13.1. Waste treatment methods

##### Disposal recommendations

Where possible recycling is preferred to disposal.

Can be incinerated, when in compliance with local regulations.

It is not possible to give this product a waste code number according to the European waste catalogue because only the intended use of the user consents the assignment of a specific code number.

The waste code number must be agreed with the disposer / manufacturer / competent authority.

##### Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

Contaminated packages must be completely emptied and can be re-used following proper cleaning.

Packing which cannot be properly cleaned must be disposed of.



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**14. Transport information****Land transport (ADR/RID)**

**14.1. UN-number or ID-number:** UN 2735

**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S.  
(3-aminomethyl-3,5,5-trimethylcyclohexylamine; Polyoxypropylenetriamine)

**14.3. Transport hazard class(es):** 8

**14.4. Packing group:** II  
**Hazard label:** 8



**Classification code:** C7  
**Special Provisions:** 274  
**Limited quantity:** 1 L  
**Excepted quantity:** E2  
**Transport category:** 2  
**Hazard No:** 80  
**Tunnel restriction code:** E


**Marine transport (IMDG)**

**14.1. UN-number or ID-number:** UN 2735

**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S.  
(3-aminomethyl-3,5,5-trimethylcyclohexylamine; Polyoxypropylenetriamine)

**14.3. Transport hazard class(es):** 8

**14.4. Packing group:** II  
**Hazard label:** 8



**Special Provisions:** 274  
**Limited quantity:** 1 L  
**Excepted quantity:** E2  
**EmS:** F-A, S-B


**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN-number or ID-number:** UN 2735

**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S.  
(3-aminomethyl-3,5,5-trimethylcyclohexylamine; Polyoxypropylenetriamine)

**14.3. Transport hazard class(es):** 8

**14.4. Packing group:** II  
**Hazard label:** 8



**Special Provisions:** A3 A803  
**Limited quantity Passenger:** 0,5 L  
**Passenger LQ:** Y840  
**Excepted quantity:** E2

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IATA-packing instructions - Passenger: 851  
 IATA-max. quantity - Passenger: 1 L  
 IATA-packing instructions - Cargo: 855  
 IATA-max. quantity - Cargo: 30 L

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

#### 14.6. Special precautions for user

There are no data available on the mixture itself.

#### 14.7. Maritime transport in bulk according to IMO instruments

There are no data available on the mixture itself.

#### Other applicable information

There are no data available on the mixture itself.

### 15. Regulatory information

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

##### EU regulatory information

Restrictions on use (REACH, annex XVII): Entry 3

##### Additional information

This product does not contain substances of very high concern &gt; 0,1% (Regulation (EC) No 1907/2006 (REACH), Article 57).

##### National regulatory information

Water hazard class (D): 2 - obviously hazardous to water

##### Additional information

"ZH 1/129 ""Data Sheet: Irritating substances / corrosive substances (M 004)""

#### 15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

Polyoxypropylenetriamine

### 16. Other information

#### Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H312	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Chronic 3; H412	Calculation method

#### Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.

H302+H312 Harmful if swallowed or 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.

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

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**Further Information**

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

Key literature references and sources for data Regulation (EC) No 1907/2006; Regulation (EC) No. 1272/2008

The information of this MSDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this MSDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.