

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Hardener 386

Revision date: 01.08.2017

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Härter 386

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Hardener (Crosslinker)

1.3. Details of the supplier of the safety data sheet

Company name:	R&G Faserverbundwerkstoffe GmbH	
Street:	Im Meißel 7 - 13	
Place:	D-71111 Waldenbuch	
Post-office box:	1145	
	D-71107 Waldenbuch	
Telephone:	+49-7157-530460	Telefax: +49-7157-530470
e-mail:	info@r-g.de	
Internet:	www.r-g.de	
Responsible Department:	Management	

1.4. Emergency telephone number: Vergiftungs-Informations-Zentrale Freiburg
Tel: +49 (0)761 19240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Acute toxicity: Acute Tox. 3

Acute toxicity: Acute Tox. 3

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1A

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Toxic if inhaled.

Toxic in contact with skin.

Harmful if swallowed.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

Toxic to aquatic life with long lasting effects.

2.2. Label elements**Regulation (EC) No. 1272/2008****Hazard components for labelling**

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Propylidynetrimethanol, propoxylated, reaction products with ammonia

2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)

Signal word: Danger**Pictograms:**

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Hazard statements

H302	Harmful if swallowed.
H311+H331	Toxic in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name	Quantity
	EC No	Index No
		REACH No
	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	45 - < 50 %
	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	
39423-51-3	Propylidynetrimethanol, propoxylated, reaction products with ammonia	30 - < 35 %
	500-105-6	01-2119556886-20
	Acute Tox. 4, Acute Tox. 4, Eye Dam. 1, Aquatic Chronic 2; H312 H302 H318 H411	
6864-37-5	2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	20 - < 25 %
	229-962-1	612-110-00-1
		01-2119497829-12
	Acute Tox. 2, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1A, Aquatic Chronic 2; H330 H311 H302 H314 H411	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately.

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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. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth thoroughly with water. Let water be drunk in little sips (dilution effect). Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. Call a physician immediately.

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

Gastrointestinal complaints.
Conjunctival redness.
Causes skin and eye irritation.

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

Treat symptomatically. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

No information available.

5.2. Special hazards arising from the substance or mixture

Non-flammable. Vapours can form explosive mixtures with air.
Formation of: Nitrogen oxides (NO_x), Carbon dioxide, Carbon monoxide.
Heating causes rise in pressure with risk of bursting.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.
(DIN-/EN-Norms: 469)

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Evacuate area.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Provide adequate ventilation.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal. Stop leak if safe to do so.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

Advice on storage compatibility

No special measures are necessary.

7.3. Specific end use(s)

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls



Appropriate engineering controls

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

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink. Contaminated work clothing should not be allowed out of the workplace. Do not breathe gas/fumes/vapour/spray.

Eye/face protection

Suitable eye protection: Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Wear protective gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	slightly yellow

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Odour: like: Amines
 pH-Value: not determined

Changes in the physical state

Melting point: not determined
 Initial boiling point and boiling range: 245 °C
 Flash point: 100 °C

Flammability

Solid: not applicable
 Gas: not applicable

Explosive properties

Vapours can form explosive mixtures with air.

Lower explosion limits: not determined
 Upper explosion limits: not determined
 Ignition temperature: not determined

Auto-ignition temperature

Solid: not applicable
 Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

Not oxidising.

Vapour pressure: not determined
 Density: 0,95 g/cm³
 Water solubility: easily soluble

Solubility in other solvents

not determined

Partition coefficient: not determined
 Viscosity / dynamic: not determined
 Viscosity / kinematic: not determined
 Vapour density: not determined
 Evaporation rate: not determined

9.2. Other information

Odour threshold: not determined.

SECTION 10: Stability and reactivity**10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

No information available.

10.5. Incompatible materials

No information available.

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10.6. Hazardous decomposition products

Nitrogen oxides (NOx), Carbon dioxide, Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Harmful if swallowed.

Toxic in contact with skin or if inhaled.

ATEmix calculated

ATE (oral) 577,7 mg/kg; ATE (dermal) 537,9 mg/kg; ATE (inhalative vapour) 2,22 mg/l; ATE (inhalative aerosol) 1,867 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine				
	oral	LD50 1030 mg/kg	Rat	Manufacturer	
	dermal	ATE 1100 mg/kg			
39423-51-3	Propylidynetrimethanol, propoxylated, reaction products with ammonia				
	oral	LD50 550 mg/kg	Rat	Manufacturer	
	dermal	LD50 > 1000 mg/kg	Rat	Manufacturer	
6864-37-5	2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)				
	oral	LD50 > 320 - 460 mg/kg	Rat	Manufacturer	
	dermal	LD50 > 200 - 400 mg/kg	Rabbit	Manufacturer	
	inhalative vapour	ATE 0,5 mg/l			
	inhalative (4 h) aerosol	LC50 0,42 mg/l	Rat	Manufacturer	

Irritation and corrosivity

Causes severe skin burns and 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.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

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

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
39423-51-3	Propylidynetrimethanol, propoxylated, reaction products with ammonia	-1,13
6864-37-5	2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	2,3

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:

UN 2922

14.2. UN proper shipping name:

CORROSIVE LIQUID, TOXIC, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine)

14.3. Transport hazard class(es):

8

14.4. Packing group:

II

Hazard label:

8+6.1



Classification code:

CT1

Special Provisions:

274

Limited quantity:

1 L

Excepted quantity:

E2

Transport category:

2

Hazard No:

86

Tunnel restriction code:

E

Inland waterways transport (ADN)

14.1. UN number:

UN 2922

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14.2. UN proper shipping name:CORROSIVE LIQUID, TOXIC, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine)**14.3. Transport hazard class(es):**

8

14.4. Packing group:

II

Hazard label:

8+6.1



Classification code:

CT1

Special Provisions:

274 802

Limited quantity:

1 L

Excepted quantity:

E2

Marine transport (IMDG)**14.1. UN number:**

UN 2922

14.2. UN proper shipping name:CORROSIVE LIQUID, TOXIC, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine)**14.3. Transport hazard class(es):**

8

14.4. Packing group:

II

Hazard label:

8+6.1



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:**

UN 2922

14.2. UN proper shipping name:CORROSIVE LIQUID, TOXIC, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine)**14.3. Transport hazard class(es):**

8

14.4. Packing group:

II

Hazard label:

8+6.1



Special Provisions:

A3 A803

Limited quantity Passenger:

0.5 L

Passenger LQ:

Y840

Excepted quantity:

E2

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:

yes



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Danger releasing substance: Propylidynetrimethanol, propoxylated, reaction products with ammonia
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 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: 3-aminomethyl-3,5,5-trimethylcyclohexylamine

2004/42/EC (VOC): < 70,00 %

Information according to 2012/18/EU H2 ACUTE TOXIC

(SEVESO III):

Additional information: E2

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water contaminating class (D): 3 - highly water contaminating

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning. Causes allergic hypersensitivity reactions.

Additional information

AOX: No information available.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Abbreviations and acronyms**

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 Harmonized 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

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

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

Classification	Classification procedure
Acute Tox. 3; H331	Calculation method
Acute Tox. 3; H311	Calculation method
Acute Tox. 4; H302	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H311+H331	Toxic in contact with skin or if inhaled.
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.
H330	Fatal if inhaled.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)