

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Hardener CL (60 Min.)**

Print date: 26.01.2015

Product code: 109285-H

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

Hardener CL (60 Min.)

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

Epoxy resin dispersions-Hardener (Crosslinker )

**1.3. Details of the supplier of the safety data sheet**

Company name:	R&G Faserverbundwerkstoffe GmbH	
	Composite Technology	
Street:	Im Meißel 7 - 13	
Place:	D-71111 Waldenbuch	
Post-office box:	1145	
	D-71107 Waldenbuch	
Telephone:	+49 (0)7157 5304-60	Telefax: +49 (0)7157 5304-70
e-mail:	info@r-g.de	
Internet:	www.r-g.de	
Responsible Department:	Management	

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

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC**

Indications of danger: C - Corrosive

R phrases:

Harmful in contact with skin and if swallowed.

Causes burns.

May cause sensitisation by skin contact.

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

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

Hazard categories:

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory/skin sensitization: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Harmful to aquatic life with long lasting effects.

**2.2. Label elements****Hazardous components which must be listed on the label**

3-aminomethyl-3,5,5-trimethylcyclohexylamine

benzyl alcohol

salicylic acid

Phenol, styrenated

Signal word: Danger

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Pictograms:

GHS05-GHS07

**Hazard statements**

H302	Harmful if swallowed.
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**

P501	Dispose of waste according to applicable legislation.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P405	Store locked up.
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**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine	50 - 100 %
2855-13-2	C - Corrosive, Xn - Harmful R21/22-34-43-52-53	
612-067-00-9	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H317 H412	
202-859-9	benzyl alcohol	2,5 - 10 %
100-51-6	Xn - Harmful R20/22	
603-057-00-5	Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H302 H332 H319	
01-2119492630-38		
200-712-3	salicylic acid	<= 2,5 %
69-72-7	Xn - Harmful, Xi - Irritant R22-41	
	Acute Tox. 4, Eye Dam. 1; H302 H318	
01-2119486984-17		
262-975-0	Phenol, styrenated	<= 2,5 %
61788-44-1	Xi - Irritant, N - Dangerous for the environment R38-43-51-53	
	Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411	
01-2119979575-18		

Full text of R-, H- and EUH-phrases: see section 16.

**SECTION 4: First aid measures**

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### 4.1. Description of first aid measures

#### General information

Remove contaminated clothing immediately.

#### After inhalation

consult a doctor.

#### After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs.

#### 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

Drink plenty of water and fresh air. Call a doctor immediately

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

No information available.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>), Extinguishing powder, Water spray jet.

#### Unsuitable extinguishing media

High power water jet.

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

When heating up or in the fire case formation of poisonous gases possible.

### 5.3. Advice for firefighters

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

#### Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## SECTION 6: Accidental release measures

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

Use personal protection equipment.

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

Do not allow to enter the soil or subsoil.

### 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.

### 6.4. Reference to other sections

Carefully cleaning scene of an accident.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Provide adequate room ventilation, if necessary with vapour extraction at the workplace.

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### 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/Store only in original container.

#### Advice on storage compatibility

Store separately from foodstuffs.

#### Further information on storage conditions

Keep receptacles tightly sealed.

### 7.3. Specific end use(s)

No further relevant information

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

### 8.2. Exposure controls



#### Appropriate engineering controls

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

#### 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.

#### Eye/face protection

Suitable eye protection: goggles.

#### 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.

Recommended material: FKM (fluoro rubber), @0802.B008198

Thickness of glove material: &gt; 0,5mm

#### Skin protection

Wear suitable protective clothing.

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection. Combination filtering device (EN 14387) A-P2

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

Physical state: liquid  
 Colour: light yellow  
 Odour: Amines

**Test method**

pH-Value: not determined

**Changes in the physical state**

Melting point: not determined

Initial boiling point and boiling range: &gt; 200 °C

Flash point: &gt; 100 °C

**Flammability**

Solid: not applicable

Gas: not applicable

Lower explosion limits:

Upper explosion limits:

**Auto-ignition temperature**

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

**Oxidizing properties**

Not oxidizing.

Density (at 23 °C): 1,0 g/cm<sup>3</sup> ISO 2811

Water solubility: Immiscible

**Solubility in other solvents**

not determined

Partition coefficient: not determined

Viscosity / dynamic:  
(at 25 °C) 94 mPa·s ISO 3219

Vapour density: not determined

Evaporation rate: not determined

**9.2. Other information**

Solid content: 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 further relevant information

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**10.5. Incompatible materials**

Oxidising agent, strong

**10.6. Hazardous decomposition products**

In case of fire may be liberated: toxic and caustic gases and vapours

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****ATEmix calculated**

ATE (oral) 1092,9 mg/kg; ATE (dermal) 1784,2 mg/kg; ATE (inhalative aerosol) 3,333 mg/l

**Acute toxicity**

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine					
	oral	LD50	1030 mg/kg	Rat	OECD 401	
	dermal	LD50	1840 mg/kg	Rabbit	Manufacturer	
	inhalative (4 h) aerosol	LC50	> 5,01 mg/l	Rat	OECD 403	
100-51-6	benzyl alcohol					
	oral	LD50	1620 mg/kg	Rat	IUCLID	
	inhalative vapour	ATE	11 mg/l			
	inhalative (4 h) aerosol	LC50	> 4,178 mg/l	Rat	OECD 403	
69-72-7	salicylic acid					
	oral	LD50	891 mg/kg	Rat	OECD 401	
	dermal	LD50	> 2000 mg/kg	Rat	OECD 402	
61788-44-1	Phenol, styrenated					
	oral	LD50	2197 mg/kg	Rat	Quantitative structure-activity relationship (QSAR)	
	dermal	LD50	3166 mg/kg	Rat	Quantitative structure-activity relationship (QSAR)	

**Additional information on tests**

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP].

**SECTION 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	Method	Dose	[h]   [d]	Species	Source
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine					
	Acute fish toxicity	LC50	110 mg/l	96 h	Leuciscus idus (golden orfe)	Regulation (EC) No. 440/2008, Annex, C.1
	Acute algae toxicity	ErC50	> 50 mg/l	72 h	Scenedesmus subspicatus	Regulation (EC) No. 440/2008, Annex, C.3
	Acute crustacea toxicity	EC50	388 mg/l	48 h	Chaetogammarus marinus	IUCLID
100-51-6	benzyl alcohol					
	Acute fish toxicity	LC50	460 mg/l	96 h	Pimephales promelas (fathead minnow)	EPA OPP 72-1
	Acute algae toxicity	ErC50	770 mg/l	72 h	Pseudokirchneriella subcapitata	OECD 201
	Acute crustacea toxicity	EC50	253 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202
	Algae toxicity	NOEC	3140 mg/l	3 d	Pseudokirchneriella subcapitata	OECD 201
69-72-7	salicylic acid					
	Acute fish toxicity	LC50	1370 mg/l	96 h	Pimephales promelas (fathead minnow)	OECD 203
	Acute algae toxicity	ErC50	> 100 mg/l	72 h	Scenedesmus subspicatus	OECD 201
	Acute crustacea toxicity	EC50	870 mg/l	48 h	Daphnia magna	OECD 202
	Crustacea toxicity	NOEC	10 mg/l	21 d	Daphnia magna	OECD 202
61788-44-1	Phenol, styrenated					
	Acute fish toxicity	LC50	4 mg/l	96 h	Pimephales promelas (fathead minnow)	Quantitative structure-activity relationship (QSAR)
	Acute algae toxicity	ErC50	1,637 mg/l	72 h	Pseudokirchneriella subcapitata	Quantitative structure-activity relationship (QSAR)
	Acute crustacea toxicity	EC50	1,878 mg/l	48 h	Daphnia magna	Quantitative structure-activity relationship (QSAR)

**12.2. Persistence and degradability**

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine			
	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A	8 %	28	IUCLID
	Not readily biodegradable (according to OECD criteria)			
100-51-6	benzyl alcohol			
	OECD 301C/ ISO 9408/ EEC 92/69/V, C.4-F	92-96 %	14	
	Readily biodegradable (according to OECD criteria).			
69-72-7	salicylic acid			
	OECD 301C/ ISO 9408/ EEC 92/69/V, C.4-F	88,1 %	14	
	Readily biodegradable (according to OECD criteria).			
61788-44-1	Phenol, styrenated			
	OECD 301C/ ISO 9408/ EEC 92/69/V, C.4-F	73 %	14	
	Readily biodegradable (according to OECD criteria).			

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**12.3. Bioaccumulative potential**

The product has not been tested.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	0,8
100-51-6	benzyl alcohol	1,05
69-72-7	salicylic acid	2,26

**BCF**

CAS No	Chemical name	BCF	Species	Source
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	3,16	Quantitative structure-activity relationship (QSAR)	IUCLID
61788-44-1	Phenol, styrenated	26,5	Carassius auratus (goldfish)	Quantitative structure-activity relationship (QSAR)

**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.

**Waste disposal number of waste from residues/unused products**

080299 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of other coatings (including ceramic materials); wastes not otherwise specified

**Waste disposal number of used product**

080299 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of other coatings (including ceramic materials); wastes not otherwise specified

**Waste disposal number of contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances Classified as hazardous waste.

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**



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#### Land transport (ADR/RID)

**14.1. UN number:** UN 2735  
**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine )  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** III  
 Hazard label: 8



Classification code: C7  
 Special Provisions: 274  
 Limited quantity: 5 L  
 Transport category: 3  
 Hazard No: 80  
 Tunnel restriction code: E

#### Other applicable information (land transport)

Excepted quantity: E1

#### Inland waterways transport (ADN)

**14.1. UN number:** UN 2735  
**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine )  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** III  
 Hazard label: 8



Classification code: C7  
 Special Provisions: 274  
 Limited quantity: 5 L

#### Other applicable information (inland waterways transport)

Excepted quantity: E1

#### Marine transport (IMDG)

**14.1. UN number:** UN 2735  
**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine )  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** III  
 Hazard label: 8



Marine pollutant: Nein  
 Special Provisions: 223, 274  
 Limited quantity: 5 L  
 EmS: F-A, S-B

#### Other applicable information (marine transport)

Excepted quantity: E1

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**Air transport (ICAO)**

<b>14.1. UN number:</b>	UN 2735
<b>14.2. UN proper shipping name:</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	III
Hazard label:	8



Special Provisions:	A3 A803
Limited quantity Passenger:	1 L
IATA-packing instructions - Passenger:	852
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	856
IATA-max. quantity - Cargo:	60 L

**Other applicable information (air transport)**

Excepted quantity: E1  
 Passenger-LQ: Y841

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**14.6. Special precautions for user**

Warning: strongly corrosive.

**14.7. Transport in bulk according to Annex II of MARPOL73/78 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**

2004/42/EC (VOC): 100 % (1000 g/l)

**Additional information**

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

**National regulatory information**

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): 1 - slightly water contaminating

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

**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

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ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

**Relevant R-phrases (Number and full text)**

20/22	Harmful by inhalation and if swallowed.
21/22	Harmful in contact with skin and if swallowed.
22	Harmful if swallowed.
34	Causes burns.
38	Irritating to skin.
41	Risk of serious damage to eyes.
43	May cause sensitisation by skin contact.
51	Toxic to aquatic organisms.
52	Harmful to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.

**Relevant H- and EUH-phrases (Number and full text)**

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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