

Safety Data Sheet

according to UK REACH Regulation

Hardener CL (60 Min.)

Revision date: 23.05.2022

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 hardener

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-Informations-Zentrale Freiburg	
	Tel: +49 (0)761 19240	

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Hazard categories:

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.

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

Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer
benzyl alcohol**Signal word:**

Danger

Pictograms:**Hazard statements**

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P501	Dispose of the contents / container in accordance with local / regional / national / international regulations.
P405	Store locked up.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P362+P364	Take off contaminated clothing and wash it before reuse.
P310	Immediately call a POISON CENTER/doctor.
P260	Avoid breathing dust/mist.

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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	
	GHS Classification			
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine			50 - 100 %
	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			
68609-08-5	Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer			10-25%
	614-657-1			
100-51-6	benzyl alcohol			2,5 - 10 %
	202-859-9	603-057-00-5	01-2119492630-38	
	Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H332 H302 H319			
61788-44-1	Phenol, styrenated			< 2,5 %
	262-975-0		01-2119979575-18	
	Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411			
69-72-7	salicylic acid			<= 2,5 %
	200-712-3		01-2119486984-17	
	Acute Tox. 4, Eye Dam. 1; H302 H318			

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		
2855-13-2	220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine	50 - 100 %
	dermal: LD50 = 1840 mg/kg; oral: LD50 = 1030 mg/kg		
100-51-6	202-859-9	benzyl alcohol	2,5 - 10 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = > 4,178 mg/l (dusts or mists); oral: LD50 = 1620 mg/kg		
61788-44-1	262-975-0	Phenol, styrenated	< 2,5 %
	dermal: LD50 = >2000 mg/kg; oral: LD50 = >2000 mg/kg		
69-72-7	200-712-3	salicylic acid	<= 2,5 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = 891 mg/kg		

SECTION 4: First aid measures**4.1. Description of first aid measures****After contact with skin**

Immediately with water and soap and rinse thoroughly. Consult a doctor if skin irritation persists.

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

No further relevant information available.

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

No further relevant information available.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol-resistant foam.**Unsuitable extinguishing media**

Full water jet

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

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5.3. Advice for firefighters

Mount respiratory protective device.

Additional information

Fire residues and contaminated extinguishing water must be disposed of in accordance with official regulations.

Contaminated extinguishing water must be collected separately and must not be allowed to enter the sewage system.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Use personal protection equipment.

6.2. Environmental precautions

Do not discharge into drains, surface or groundwater. Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

Provide adequate ventilation.

6.4. Reference to other sections

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information. Carefully cleaning scene of an accident.

SECTION 7: Handling and storage**7.1. Precautions for safe handling****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. Provide for retaining containers, e.g. floor pan without outflow.

7.3. Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine			
Worker DNEL,		inhalation		0,073 mg/m ³
100-51-6	benzyl alcohol			
Worker DNEL, long-term		dermal		8 mg/kg bw/day
61788-44-1	Phenol, styrenated			
Worker DNEL,		dermal		2,1 mg/kg bw/day
69-72-7	salicylic acid			
Worker DNEL,		dermal		2 mg/kg bw/day

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PNEC values

CAS No	Substance	Value
Environmental compartment		
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	
Freshwater		0,06 mg/l
Marine water		0,006 mg/l
100-51-6	benzyl alcohol	
Freshwater		1 mg/l
Marine water		0,1 mg/l
61788-44-1	Phenol, styrenated	
Freshwater		0,03 mg/l
Marine water		0,003 mg/l
69-72-7	salicylic acid	
Freshwater		0,2 mg/l
Marine water		0,02 mg/l

8.2. Exposure controls**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),

Thickness of glove material: > 0,5mm

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**Changes in the physical state**

Melting point/freezing point: not determined
 Flash point: > 100 °C

Flammability

Solid: not applicable
 Gas: not applicable

Lower explosion limits:

Upper explosion limits:

Self-ignition temperature

Solid: not applicable
 Gas: not applicable

Decomposition temperature: not determined

Density (at 23 °C): 1,0 g/cm³ ISO 2811

Water solubility: Immiscible

Solubility in other solvents

not determined

Partition coefficient n-octanol/water: not determined

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

Relative vapour density: not determined

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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 available.

10.5. Incompatible materials

Oxidising agent, strong

10.6. Hazardous decomposition products

in case of fire: toxic gases/vapours, corrosive gases/vapours

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

Harmful if swallowed or if inhaled.

ATEmix calculated

ATE (oral) 1092,9 mg/kg

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	LD50 1840 mg/kg	Rabbit	Manufacturer	
100-51-6	benzyl alcohol				
	oral	LD50 1620 mg/kg	Rat	IUCLID	
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) aerosol	LC50 > 4,178 mg/l	Rat	OECD 403	
61788-44-1	Phenol, styrenated				
	oral	LD50 >2000 mg/kg	Rat		
	dermal	LD50 >2000 mg/kg	Rat		
69-72-7	salicylic acid				
	oral	LD50 891 mg/kg	Rat	OECD 401	
	dermal	LD50 > 2000 mg/kg	Rat	OECD 402	

Irritation and corrosivity

Causes severe skin burns and eye damage.

Sensitising effects

May cause an allergic skin reaction.

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.

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Additional information on tests

The 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.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine					
	Acute fish toxicity	LC50 110 mg/l	96 h	Leuciscus idus (golden orfe)	Manufacturer	
	Acute algae toxicity	ErC50 > 50 mg/l	72 h	Scenedesmus subspicatus	Manufacturer	
	Acute crustacea toxicity	EC50 23 mg/l	48 h	Daphnia magna	Manufacturer	
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	
61788-44-1	Phenol, styrenated					
	Acute fish toxicity	LL50 14,8 mg/l	96 h	fish		
	Acute crustacea toxicity	EL50 1-10 mg/l	48 h	Daphnia magna		
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	

12.2. Persistence and degradability

No further relevant information available.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
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).			
61788-44-1	Phenol, styrenated			
	OECD 301C/ ISO 9408/ EEC 92/69/V, C.4-F	73 %	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).			

12.3. Bioaccumulative potential

No further relevant information available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
100-51-6	benzyl alcohol	1,05
69-72-7	salicylic acid	2,26

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BCF

CAS No	Chemical name	BCF	Species	Source
61788-44-1	Phenol, styrenated	26,5	Carassius auratus (goldfish)	Quantitative structure-activity relationship (QSAR)

12.4. Mobility in soil

No further relevant information available.

12.5. Results of PBT and vPvB assessment

not applicable

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****Disposal recommendations**

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.

List of Wastes Code - 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

List of Wastes Code - 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

List of Wastes Code - 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 hazardous substances; 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**Land transport (ADR/RID)****14.1. UN number:**

UN 2735

14.2. UN proper shipping name:AMINES, LIQUID, CORROSIVE, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine, Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer, benzyl alcohol)**14.3. Transport hazard class(es):**

8

14.4. Packing group:

III

Hazard label:

8



Classification code:

C7

Limited quantity:

5 L

Excepted quantity:

E1

Transport category:

3

Hazard No:

80

Tunnel restriction code:

E

Inland waterways transport (ADN)**14.1. UN number:**

UN 2735

14.2. UN proper shipping name:AMINES, LIQUID, CORROSIVE, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine, Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer, benzyl alcohol)

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14.3. Transport hazard class(es): 8**14.4. Packing group:** III

Hazard label: 8



Classification code: C7

Limited quantity: 5 L

Excepted quantity: E1

Marine transport (IMDG)**14.1. UN number:** UN 2735**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine, Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer, benzyl alcohol)**14.3. Transport hazard class(es):** 8**14.4. Packing group:** III

Hazard label: 8



Limited quantity: 5 L

Excepted quantity: E1

EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)**14.1. UN number:** UN 2735**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S.
(3-aminomethyl-3,5,5-trimethylcyclohexylamine, Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer, benzyl alcohol)**14.3. Transport hazard class(es):** 8**14.4. Packing group:** III

Hazard label: 8



Limited quantity Passenger: 1 L

Excepted quantity: E1

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 Marpol and the IBC Code

not applicable

Other applicable information

Segregation Code: SG35 Stow "separated from"SGG1-acids.

Stowage Category: A

Segregation groups: Alkalis

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

2004/42/EC (VOC): 500 g/L

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Additional information

To follow: BGR 227, BGR 190, BGR 192

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles 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 hazard class (D):

2 - obviously hazardous to water

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**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,4,5,6,7,9,10,11,12,14,15.

Abbreviations and acronymsADR: 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%

Relevant H and EUH statements (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.

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