

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Hardener C

Revision date: 24.09.2018

Product code: 120310

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

Hardener C

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

epoxy resin hardener (Curing agent)

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****Regulation (EC) No. 1272/2008**

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

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Phenol, methylstyrolisiert

benzyl alcohol

Signal word: Danger**Pictograms:****Hazard statements**

H302

Harmful if swallowed.

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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.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P310 Immediately call a POISON CENTER/doctor.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P405 Store locked up.

Additional advice on labelling

The product is classified and labelled under the EC Directives/hazardous substances laws (GefStoffV).

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Chemical characterization**

epoxy resin hardener formulated polyamine

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
100-51-6	benzyl alcohol			25 - 50 %
	202-859-9	603-057-00-5		
	Acute Tox. 4, Acute Tox. 4; H332 H302			
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine			25 - 50 %
	220-666-8	612-067-00-9		
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H317 H412			
68512-30-1	Phenol, methylstyrenated			2,5 - 10 %
	270-966-8		01-2119555274-38	
	Acute Tox. 4, Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 3; H312 H315 H317 H412			
69-72-7	Salicylsäure			< 2,5 %
	200-712-3			
	Acute Tox. 4, Eye Dam. 1; H302 H318			

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

Further Information

The wording of the listed risk phrases refer to section 16

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

Remove contaminated clothing immediately.

After inhalation

Remove casualty to fresh air and keep warm and at rest.

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Consult physician if problems persist.

After contact with skin

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

If skin becomes irritated, seek medical treatment.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

Rinse mouth immediately and drink plenty of water. Provide fresh air.

Immediately call a POISON CENTER/doctor/..?.

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

No data available

No special measures are necessary. Treat symptomatically.

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂).

Extinguishing powder.

Water spray.

alcohol resistant foam

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Gases/vapours, toxic

5.3. Advice for firefighters

[In case of inadequate ventilation] wear respiratory protection.

Additional information

Contaminated fire-fighting water must be collected separately. Dispose according to legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

6.2. Environmental precautions

Disposal: see section 13 Do not allow to enter into surface water or drains.

Do not allow to enter into soil/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).

Disposal: see section 13

Provide adequate ventilation.

6.4. Reference to other sections

Clear contaminated areas thoroughly.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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Advice on safe handling

Advices on safe handling, Observe instructions for use.

If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

Advice on protection against fire and explosion

No special measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep only in the original container.

Advice on storage compatibility

Keep away from food, drink and animal feeding stuffs.

Further information on storage conditions

Keep container tightly closed.

7.3. Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Additional advice on limit values**

See chapter 7. No additional measures necessary.

8.2. Exposure controls**Protective and hygiene measures**

Keep away from food, drink and animal feeding stuffs.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

Avoid contact with eyes and skin.

Eye/face protection

Tightly sealed safety glasses.

Hand protection

Wear protective gloves. NBR (Nitrile rubber). FKM (fluoro rubber) PVC (Polyvinyl chloride).

Thickness of the glove material: > 0,5 mm

Unsuitable material: Leather articles, Thick fabric

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.

To minimize the wetness in the glove due to perspiration changing of gloves during a shift is required

Check leak tightness/impermeability prior to use.

Protect skin by using skin protective cream.

The required protective gloves have to be specified by the glove material and the penetration time of the glove material depending on strength and duration of dermal exposition.

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: yellowish
 Odour: amines.

Test method**Changes in the physical state**

Melting point: not determined
 Initial boiling point and boiling range: 200 °C
 thermische Zersetzung: 250 °C
 Flash point: 100 °C

Flammability

Solid: No data available
 Gas: No data available

Explosive properties

The product is not: Explosive

Lower explosion limits:

Upper explosion limits:

Ignition temperature: 380 °C

Auto-ignition temperature

Solid: The product is not: Spontaneously flammable.
 Gas: The product is not: Spontaneously flammable.

Decomposition temperature: No data available

Oxidizing properties

No data available

Density (at 23 °C): 1,03 g/cm³ ISO 2811-2

Water solubility: not miscible

Solubility in other solvents

No data available

Viscosity / dynamic: 440 mPa·s ISO 3219
 (at 25 °C)

Vapour density: No data available

Evaporation rate: No data available

9.2. Other information

No data available

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

No data available

10.2. Chemical stability

none spontaneous decomposition: Specific use(s)

10.3. Possibility of hazardous reactions

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Response: Etchant and acids, Alkali (lye), Oxidizing agents.

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

In case of fire may be liberated: Gases/vapours, toxic

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
100-51-6	benzyl alcohol				
	oral	LD50 1230 mg/kg	Rat	GESTIS	
	inhalation vapour	ATE 11 mg/l			
	inhalation aerosol	ATE 1,5 mg/l			
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine				
	oral	LD50 1030 mg/kg	Rat	OECD 401	
	dermal	LD50 1840 mg/kg	Rabbit	Manufacturer	
	inhalation (4 h) aerosol	LC50 > 5,01 mg/l	Rat	OECD 403	
68512-30-1	Phenol, methylstyrenated				
	oral	LD50 3600 mg/kg	Rabbit		
	dermal	ATE 1100 mg/kg			
69-72-7	Salicylsäure				
	oral	LD50 891 mg/kg	(rat)		
	dermal	LD50 >2000 mg/kg	(rat)		

Irritation and corrosivity

Skin corrosion

IF IN EYES: strongly corrosive.

Sensitising effects

May cause sensitization by skin contact.

STOT-single exposure

Harmful

corrosive.

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Specific effects in experiment on an animal

Harmful to fish.

Further information

Harmful to aquatic life.

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Water hazard class (WGK): slightly hazardous to water (WGK 1)

Do not allow to enter into surface water or drains.

SECTION 12: Ecological information

12.1. Toxicity

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)	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	
68512-30-1	Phenol, methylstyrenated					
	Acute fish toxicity	LC50 25,8 mg/l	96 h			
	Acute algae toxicity	ErC50 15 mg/l	72 h	Scenedesmus subspicatus		
	Acute crustacea toxicity	EC50 14-51 mg/l	48 h	Daphnia magna		
69-72-7	Salicylsäure					
	Acute fish toxicity	LC50 1380 mg/l	96 h	Pimephales promelas (fathead minnow)		
	Acute algae toxicity	ErC50 > 100 mg/l	72 h	Desmodesmus subspicatus		

12.2. Persistence and degradability

No data available

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)				

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

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

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

12.4. Mobility in soil

No data available

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12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

No data available

Further information

Do not let the product enter the groundwater, open water, or the sewerage system.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

Dispose of waste according to applicable legislation. Dispose of contents/container to industrial incineration plant.

Following consultation with waste management company and after solidification, landfill together with household waste.

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

Contaminated packaging

Dispose of waste according to applicable legislation.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number: UN2735
14.2. UN proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONDIAMIN)
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)

E1

Marine transport (IMDG)

14.1. UN number: UN2735
14.2. UN proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONDIAMINEI)

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

Hazard label: 8



Marine pollutant: no
 Special Provisions: 274
 Limited quantity: 5 L
 EmS: F-A, S-B
 Segregation group: alkalis

Air transport (ICAO-TI/IATA-DGR)**14.1. UN number:** UN2735**14.2. UN proper shipping name:** AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONDIAMINE)**14.3. Transport hazard class(es):** 8**14.4. Packing group:** III

Hazard label: 8



Special Provisions: 223, 274
 Limited quantity Passenger: 5 L
 IATA-packing instructions - Cargo: 856
 IATA-max. quantity - Cargo: 60 L

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

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information**

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

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information**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.
 H332 Harmful if inhaled.
 H412 Harmful to aquatic life with long lasting effects.

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Further Information

All information, recommendations, and advice on the part of R&G Faserverbundwerkstoffe GmbH are published to the best of our knowledge and belief. They are noncommittal and contain neither explicit nor tacit assurance or warranty of particular properties. The values specified for properties are typical figures. Recommendations or advice serve to describe our products and possible applications in a general or exemplary, but not specifically individual manner. In the course of the constant technical advancement and improvement of our products there may be changes to the characteristic values, copy, and diagrams; no specific reference is made to any such change. Owing to our products' wide and highly diverse range of potential applications far beyond any of our attempts to analyse, the customer alone is responsible for examining our products' suitability for the respective processes and purposes and their respective processibility. All and any protective rights and the applicable laws, terms, and conditions must be observed by the buyer or user of our products at their own responsibility. Publication is not a licence and does not intend the violation of any patents.

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