

# Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Hardener L

Print date: 30.07.2012

Product code: 100143-2012-GHS

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### 1. Identification of the substance/mixture and of the company/undertaking

#### Identification of the substance or mixture

Hardener L

#### Company/undertaking identification

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:	+49-7157-530460	Telefax: +49-7157-530470
e-mail:	info@r-g.de	
Internet:	www.r-g.de	
Responsible Department:	Management	
1.4. Emergency telephone:	poison information centre	

### 2. Hazards identification

#### Classification

Indications of danger : Corrosive, Dangerous for the environment

R-phrases:

Harmful by inhalation, in contact with skin and if swallowed.

Causes severe burns.

May cause sensitization by skin contact.

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

GHS:

Hazard categories:

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1A

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.

### 3. Composition/information on ingredients

#### Chemical characterization ( Mixture )

Epoxidharzhärter, Formulierung auf Basis aliphatischer Polyamine

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### Hazardous components

EC No	CAS No	Chemical name	Quantity
		Classification GHS classification	
262-975-0	61788-44-1	pehnol.styrolized	2,5 - 10 %
		Xi, N R38-43-51-53	
		Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411	
229-962-1	6864-37-5	2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)	10 - 25 %
		T, Xn, C, N R23/24-22-35-51-53	
		Acute Tox. 3, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1A, Aquatic Chronic 2; H331 H311 H302 H314 H411	
202-859-9	100-51-6	benzyl alcohol	10 - 25 %
		Xn R20/22	
		Acute Tox. 4, Acute Tox. 4; H332 H302	
220-666-8	2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	10 - 25 %
		Xn, C R21/22-34-43-52-53	
		Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H317 H412	
203-865-4	111-40-0	2,2'-iminodiethylamine, diethylenetriamine	2,5 - 10 %
		Xn, C R21/22-34-43	
		Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1; H312 H302 H314 H317	
201-245-8	80-05-7	bisphenol A; 4,4'-isopropylidenediphenol	2,5 - 10 %
		Repr. Cat. 3, Xi R62-37-41-43-52	
		Repr. 2, STOT SE 3, Eye Dam. 1, Skin Sens. 1; H361f *** H335 H318 H317	

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

### 4. First aid measures

#### General information

Immediately take off soiled, impregnated clothing.

#### After contact with eyes

If the product comes into contact with the eyes, immediately rinse the open eyes with copious amounts of water for at least ten minutes. Afterwards consult an eye specialist.

#### After ingestion

Rinse mouth immediately and drink large quantities of water. Call a doctor, giving the substance's exact name.

#### Advice to doctor

Provide symptomatic treatment.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>). Extinguishing powder. Water fog. Fight major fires with a water spray jet or alcohol-resistant foam.

#### Extinguishing media which must not be used for safety reasons

High power water jet.

#### Additional information

Fire residue and contaminated firefighting water must be disposed of in accordance with government regulations.

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### 6. Accidental release measures

#### 6.2. Environmental precautions

Do not empty into drains or the aquatic environment. Do not allow to enter the soil or subsoil.

#### Methods for cleaning up/taking up

Absorb with liquid-binding material ( e.g. sand, diatomaceous earth, acid- or universal binding agents).  
Dispose of contaminated material as § 13 waste. Provide adequate ventilation.

### 7. Handling and storage

#### Handling

##### Advice on safe handling

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

#### Storage

##### Requirements for storage rooms and vessels

Keep only in the original container. Provide for retaining containers, eg. floor pan without outflow.

##### Advice on storage compatibility

Store separately from foodstuffs.

##### Further information on storage conditions

Provide for retaining containers, eg. floor pan without outflow.

### 8. Exposure controls/personal protection

#### Exposure limit values

##### Exposure limits (EH40)

CAS No	Chemical name	ml/m <sup>3</sup>	mg/m <sup>3</sup>	F/ml	Category	Origin
111-40-0	2,2'-Iminodi(ethylamine)	1	4.3		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
80-05-7	Bisphenol A (inhalable dust)	-	10		TWA (8 h)	EU
		-	-		STEL (15 min)	EU

#### 8.2. Exposure controls

##### Protective and hygiene measures

Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.  
Beschmutzte, getränkte Kleidung sofort ausziehen.  
Vor den Pausen und bei Arbeitsende Hände waschen.  
Berührung mit den Augen und der Haut vermeiden.

##### Respiratory protection

Bei unzureichender Belüftung Atemschutz. Empfohlenes Filtergerät für kurzzeitigen Einsatz:  
Kombinationsfilter A-P2

##### Hand protection

Nur Chemikalien-Schutzhandschuhe mit einer CE-Kennzeichnung der Kategorie III verwenden. Zur Minimierung der Nässe im Handschuh durch Schweißbildung ist ein Wechsell der Handschuhe während einer Schicht erforderlich. Vor jeder erneuten Verwendung des Handschuhs ist die Dichtheit zu prüfen. Vorbeugender Hautschutz durch Verwendung von Hautschutzmitteln wird empfohlen.  
Handschuhmaterial: Nitrilkautschuk, Fluorkautschuk (Viton)  
Empfohlene Materialstärke: >= 0,5mm

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### Eye protection

Dichtschiessende Schutzbrille

### Skin protection

Arbeitsschutzkleidung

## 9. Physical and chemical properties

### General information

Physical state: liquid  
Colour:  
Odour: amine-like

### Important health, safety and environmental information

Test method

#### Changes in the physical state

Boiling point: > 200 °C  
Flash point: > 100 °C  
Lower explosion limits: 0,5 vol. %  
Upper explosion limits: 13 vol. %  
Vapour pressure:  
(at 20 °C) 0,1 hPa  
Density (at 23 °C): 1 g/cm<sup>3</sup>  
Water solubility: slightly soluble  
Viscosity / dynamic:  
(at 25 °C) 320 mPa·s

### 9.2. Other information

Ignition temperature: 275 °C

## 10. Stability and reactivity

### 10.6. Hazardous decomposition products

Fire and decomposition may release irritant, caustic, ignitable, unhealthy, toxic gases and vapours.

## 11. Toxicological information

### Acute toxicity

6864-37-5 2,2'-Dimethyö-4,4'methylenbis(cyclohexylamin)  
Oral LD50 320-460 mg/kg (rat)  
Dermal LD50 200-400 mg/kg (rab)  
Inhalativ LC50/4 h 0,42 mg/l (rat)

100-51-6 Benzylalkohol  
Oral LD50 1040 mg/kg (mou)  
1230 mg/kg (rat)  
1040 mg/kg (rbt)  
Dermal LD50 2000 mg/kg (rbt)  
Inhalativ LC 50/4 h >4,178 mg/l (rat)

2855-13-2 3-Aminomethyl-3,5,5-trimethyl-cyclohexylamin  
Oral LD 50 819-2600 mg/kg (rat)  
Dermal LD50 1840 mg/kg (rab)

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111-40-0 3-Azapentan-1,5-diamin  
Oral LD50 819-2600 mg/kg (rat)  
Dermal LD50 670-1240 mg/kg (rbt)  
Inhalativ LC50/4 h 0,07-0,25 mg/l (rat) als Aerosol

80-05-7 Bisphenol A  
Oral LD50 3250 mg/kg (rat)  
Dermal LD50 3000 mg/kg (rbt)  
Inhalativ LC50/4 h > 5 mg/l (rat)

### Irritation and corrosivity

Strong caustic effects on eyes, skin, and mucous membranes.

### Sensitising effects

May cause sensitization by skin contact.

### Additional information on tests

111-40-0 3-Azapentan-1,5-diamin  
no effect level 30 mg/kg/d (-)  
Reproduktionstoxizitäts-Screeningtest (OECD 421) Ratte  
(90d) 70-80 mg/kg/d (rat)  
subchronische orale Toxizität

## 12. Ecological information

### Ecotoxicity

not determined

### Further information

Undiluted or nonneutralised product may not enter waste water channel or main outfall.

## 13. Disposal considerations

### 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 local, state, and federal regulations.

## 14. Transport information

### Land transport (ADR/RID)

14.1. UN number:	UN2735
ADR/RID class:	8
Classification code:	C7
Warning plate	
Hazard No:	80
Hazard label:	8

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ADR/RID packing group: II  
Limited quantity: 1 L  
Tunnel restriction code: E

### Description of the goods

AMINES, LIQUID, CORROSIVE, N.O.S. (2,2'-Dimethyl-4,4'methylenbis(cyclohexylamin)),  
UMWELTGEFÄHRDEND

### Other applicable information (land transport)

Special provisions: 274  
E2  
: 2

### Marine transport

14.1. UN number: UN2735  
IMDG code: 8  
Marine pollutant: Ja  
Hazard label: 8



IMDG packing group: II  
EmS: F-A, S-B  
Limited quantity: 1 L

### Description of the goods

AMINES, LIQUID, CORROSIVE, N.O.S..(2,2'-dimethyl-4,4'methylenebis(cyclohexylamine))

### Other applicable information (marine transport)

Special provisions: 274, 944  
E2  
E0

### Air transport

UN/ID number: UN2735  
ICAO/IATA-DGR: 8  
Hazard label: 8



ICAO packing group: II  
Limited quantity Passenger: 0.5 L  
IATA-packing instructions - Passenger: 851  
IATA-max. quantity - Passenger: 1 L  
IATA-packing instructions - Cargo: 855  
IATA-max. quantity - Cargo: 30 L

### Description of the goods

AMINES, LIQUID, CORROSIVE, N.O.S..(2,2'-dimethyl-4,4'methylenebis(cyclohexylamine))

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### Other applicable information (air transport)

E2  
: Y808  
Special provisions: A3  
E0  
: Forbidden  
: Y840

## 15. Regulatory information

### Labelling

Danger symbols:

C - Corrosive; N - Dangerous for the environment



C - Corrosive

N - Dangerous for the environment

### R phrases

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
35 Causes severe burns.  
43 May cause sensitization by skin contact.  
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### S phrases

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
57 Use appropriate containment to avoid environmental contamination.  
60 This material and its container must be disposed of as hazardous waste.  
27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. .  
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

### GHS labelling

Signal word:

Danger

Pictograms:

corrosion; exclamation mark



### 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

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing should not be allowed out of the workplace.

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P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P321	Specific treatment (see ... on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P352	Wash with plenty of soap and water.
P363	Wash contaminated clothing before reuse.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see ... on this label).
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 or doctor/physician.
P405	Store locked up.
P501	Dispose of contents/container to ....

### National regulatory information

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

### **Additional information**

BG Merkblatt:  
Praxisleitfaden für den Umgang mit Epoxidharzen  
(herausgegeben von der Berufsgenossenschaft der Bauwirtschaft)  
[www.bgbau.de](http://www.bgbau.de) oder [www.gisbau.de](http://www.gisbau.de)

Epoxidharz-Systeme sicher handhaben  
(herausgegeben von PlasticsEurope)  
[www.plasticseurope.org](http://www.plasticseurope.org)

BGR 227 "Tätigkeiten mit Epoxidharzen"  
(herausgegeben vom Hauptverband der gewerblichen Berufsgenossenschaften)  
[www.dguv.de](http://www.dguv.de)

BGR 190 - Regel für den Einsatz von Atemschutzgeräten  
BGR 192 - Regeln für den Einsatz von Augen- und Gesichtsschutz

## 16. Other information

### **Full text of R-phrases referred to under sections 2 and 3**

20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
20/22	Harmful by inhalation and if swallowed.
21/22	Harmful in contact with skin and if swallowed.
22	Harmful if swallowed.
23/24	Toxic by inhalation and in contact with skin.
34	Causes burns.
35	Causes severe burns.
37	Irritating to respiratory system.
38	Irritating to skin.
41	Risk of serious damage to eyes.
43	May cause sensitization by skin contact.
51	Toxic to aquatic organisms.
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



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- 52 Harmful to aquatic organisms.
- 53 May cause long-term adverse effects in the aquatic environment.
- 62 Possible risk of impaired fertility.

### Full text of H-Statements referred to under sections 2 and 3

- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- 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.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H361f Suspected of damaging fertility.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

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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.)*