

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Hardener P (30 min)

Print date: 09.04.2014

Product code: 115162-GHS-2014

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

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

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

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.

GHS classification

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
m-phenylenebis(methylamine)
Phenol, styrenated
2,2,4-trimethylhexane-1,6-diamine

Signal word: Danger
Pictograms: GHS05-GHS07

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

2.3. Other hazards

No information available.

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

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Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine	40 - < 45 %
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	
216-032-5	m-phenylenebis(methylamine)	20 - < 25 %
1477-55-0	C - Corrosive, Xn - Harmful R20/22-34-43-52-53	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H302 H332 H314 H317 H412	
262-975-0	Phenol, styrenated	20 - < 25 %
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	
247-063-2	2,2,4-trimethylhexane-1,6-diamine	5 - < 10 %
25513-64-8	C - Corrosive, Xn - Harmful R22-34-43-52-53	
	Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H302 H314 H317 H412	
01-2119560598-25		
200-712-3	salicylic acid	5 - < 10 %
69-72-7	Xn - Harmful, Xi - Irritant R22-41	
	Acute Tox. 4, Eye Dam. 1; H302 H318	
01-2119486984-17		
618-561-0	Polyoxyalkylenediamine	5 - < 10 %
9046-10-0	C - Corrosive, Xn - Harmful R22-34-52-53	
	Skin Corr. 1B, Aquatic Chronic 3; H314 H412	
01-2119557899-12		

Full text of R and H phrases: 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. When in doubt or if symptoms are observed, get medical advice.

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. Medical treatment necessary.

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

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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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

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

5.2. Special hazards arising from the substance or mixture

Non-flammable. In case of fire: Formation of: Gases/vapours, toxic.

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

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

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.

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

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

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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.

Suitable material: NBR (Nitrile rubber), FKM (fluoro rubber)

Thickness of the glove material: > 0,5 mm

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Combination filtering device (EN 14387) A-P2

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

Physical state:	liquid
Colour:	light yellow
Odour:	like: Amines

Test method

pH-Value: not determined

Changes in the physical state

Melting point: not determined

Initial boiling point and boiling range: > 200 °C

Flash point: > 100 °C

Flammability

Solid: not applicable

Gas: not applicable

Lower explosion limits: 1,2 vol. %

Upper explosion limits: not determined

Ignition temperature: 365 °C

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Auto-ignition temperature

Solid: not applicable

Gas: not applicable

Decomposition temperature: not determined

Oxidizing properties

Not oxidizing.

Vapour pressure: not determined

Density (at 20 °C): 1 g/cm³ DIN 5

Water solubility: insoluble

Solubility in other solvents

not determined

Partition coefficient: not determined

Viscosity / dynamic:
(at 20 °C) 4000-5000 mPa·s DIN 53018

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

none

10.5. Incompatible materials

Oxidising agent, strong

10.6. Hazardous decomposition products

No known hazardous decomposition products.

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

ATE (oral) 1298,9 mg/kg

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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	
	dermal	LD50	1840 mg/kg	Rabbit	
1477-55-0	m-phenylenebis(methylamine)				
	oral	LD50	930 mg/kg	Rat	
	dermal	LD50	2000 mg/kg	Rabbit	
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)
25513-64-8	2,2,4-trimethylhexane-1,6-diamine				
	oral	LD50	910 mg/kg	Rat	IUCLID
69-72-7	salicylic acid				
	oral	LD50	891 mg/kg	Rat	OECD 401
	dermal	LD50	> 2000 mg/kg	Rat	OECD 402
9046-10-0	Polyoxyalkylenediamine				
	oral	LD50	2885 mg/kg	Rat	IUCLID
	dermal	LD50	2980 mg/kg	Rabbit	IUCLID

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)	
	Acute algae toxicity	ErC50	50 mg/l	72 h	Scenedesmus subspicatus	
	Acute bacteria toxicity		(1120 mg/l)		Pseudomonas putida	
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)
25513-64-8	2,2,4-trimethylhexane-1,6-diamine					
	Acute algae toxicity	ErC50	29,5 mg/l	72 h	Desmodesmus subspicatus.	IUCLID
69-72-7	salicylic acid					
	Acute fish toxicity	LC50	1370 mg/l	96 h	Pimephales promelas (fathead minnow)	OECD 203
	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
9046-10-0	Polyoxyalkylenediamine					
	Acute fish toxicity	LC50	772 mg/l	96 h	Leuciscus idus (golden orfe)	OECD 203
	Acute algae toxicity	ErC50	15 mg/l	72 h	Pseudokirchneriella subcapitata	OECD 201
	Acute crustacea toxicity	EC50	80 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202
	Acute bacteria toxicity		(750 mg/l)	3 h	Activated sludge	OECD 209

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
61788-44-1	Phenol, styrenated			
	OECD 301C/ ISO 9408/ EEC 92/69/V, C.4-F	73%	14	
	Readily biodegradable (according to OECD criteria).			
25513-64-8	2,2,4-trimethylhexane-1,6-diamine			
	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A	7%	28	
	Not 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).			
9046-10-0	Polyoxyalkylenediamine			
	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	0%	28	
	Not 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
69-72-7	salicylic acid	2,26

BCF

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

12.4. Mobility in soil

The product has not been tested.

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****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 contaminated packaging

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

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)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

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Classification code: C7
 Special Provisions: 274
 Limited quantity: 1 L
 Transport category: 2
 Hazard No: 80
 Tunnel restriction code: E

Other applicable information (land transport)

E2

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)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Classification code: C7
 Special Provisions: 274
 Limited quantity: 1 L

Other applicable information (inland waterways transport)

E2

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)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Special Provisions: 274
 Limited quantity: 1 L
 EmS: F-A, S-B

Other applicable information (marine transport)

E2

Air transport (ICAO)

14.1. UN number: UN 2735
14.2. UN proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S.
 (3-aminomethyl-3,5,5-trimethylcyclohexylamine)
14.3. Transport hazard class(es): 8
14.4. Packing group: II

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Hazard label:

8



Special Provisions:

A3 A803

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

Other applicable information (air transport)

E2

Passenger-LQ: Y840

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**

1999/13/EC (VOC): 50-80 %

Additional information

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

Regulation (EC) No. 2037/2000 concerning materials, which cause damage to the ozone layer.

Regulation (EC) No. 648/2004 (Detergents regulation)

National regulatory information

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

Water contaminating class (D): 2 - water contaminating

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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Full text of R phrases referred to under Sections 2 and 3

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.
52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
53	May cause long-term adverse effects in the aquatic environment.

Full text of H statements referred to under Sections 2 and 3

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.
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.)