

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Hardener C

Print date: 22.04.2013

Product code: 120310-GHS-2012

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

Identification of the substance or mixture

Hardener C

Use of the substance/mixture

epoxy resin hardener

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 number:	poison information centre	

2. Hazards identification

Classification

Indications of danger: C - Corrosive

R phrases:

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

Causes burns.

May cause sensitisation 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. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory/skin sensitization: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Toxic to aquatic life with long lasting effects.

3. Composition/information on ingredients

Chemical characterization (Mixture)

epoxy resin hardener

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Hazardous components

EC No	CAS No	Chemical name	Quantity
		Classification GHS classification	
202-859-9	100-51-6	benzyl alcohol	30-60 %
		Xn - Harmful R20/22	
		Acute Tox. 4, Acute Tox. 4; H332 H302	
220-666-8	2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	22 - 30%
		C - Corrosive, Xn - Harmful 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	
246-672-0	25154-52-3	nonylphenol	1 - 7 %
		Repr. Cat. 3, C - Corrosive, Xn - Harmful, N - Dangerous for the environment R62-63-22-34-50-53	
		Repr. 2, Acute Tox. 4, Skin Corr. 1B, Aquatic Acute 1, Aquatic Chronic 1; H361fd H302 H314 H400 H410	

Full text of R and H phrases: see Section 16.

4. First aid measures

General information

Change contaminated clothing.

After inhalation

Provide fresh air. Consult physician.

After contact with skin

Immediately rinse with copious amounts of water. Consult a doctor when irritation persists.

After contact with eyes

Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.

After ingestion

Have victim drink large quantities of water, with active charcoal if possible. Move a vomiting patient lying on his back into a stable position on his side. Do not induce vomiting.
Artificial respiration on respiratory arrest.

5. Fire-fighting measures

Suitable extinguishing media

Carbon dioxide (CO₂).
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.

Special exposure hazards arising from substance or mixture itself, combustion products, resulting gases

In case of fire may form:
Nitrogen oxides (NO_x).
Carbon dioxide (CO₂). Carbon monoxide.

6. Accidental release measures

Personal precautions

Wear personal protection equipment. Keep unprotected persons at a safe distance.

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Remove from all sources of ignition. Avoid contact with skin, eyes, and clothing. Do not breathe in vapours.

6.2. Environmental precautions

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

Methods for cleaning up/taking up

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

7. Handling and storage

Handling

Advice on safe handling

Provide adequate ventilation/vapour extraction at the workplace. Handle open container with care. Keep away from sources of ignition. No smoking. Avoid the formation of aerosol.

Storage

Requirements for storage rooms and vessels

Ventilate adequately storage and work rooms. Employ reliable measures to prevent the product from entering the soil.

Advice on storage compatibility

Keep away from food, drink and animal feeding stuffs.

Further information on storage conditions

Keep in well sealed receptacles at a cool, dry location.

Storageclass (D): 8

8. Exposure controls/personal protection

Exposure limit values

8.2. Exposure controls

Protective and hygiene measures

Take off immediately all contaminated clothing. Avoid contact with skin and eyes. "Wash hands when done working with material; at breaks, lunch, shift changes, etc." Do not breathe in gases/vapours/aerosols.

Respiratory protection

Not necessary when the room is well ventilated. Respiratory equipment for high concentrations. Typ:AX-P2

Hand protection

Wear protective gloves. (EN 374)
Material: NBR (Nitrile rubber). Butyl rubber.
Breakthrough time: (BTT > 480 min.) See information supplied by the manufacturer.

Eye protection

Tightly sealed safety glasses. (EN 166)

Skin protection

Wear protective clothing. (EN 368/9)

9. Physical and chemical properties

General information

Physical state: liquid
Colour: yellowish

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Odour: amine-like

Important health, safety and environmental information

Test method

Changes in the physical state

Boiling point:	200 °C	
thermische Zersetzung:	250 °C	
Flash point:	100 °C	DIN 51758
Lower explosion limits:	1,2 vol. %	
Upper explosion limits:	13,0 vol. %	
Vapour pressure: (at 20 °C)	0,4 hPa	
Density (at 20 °C):	1,02 g/cm ³	DIN 51757
Water solubility: (at 20 °C)	slightly soluble	
Viscosity / dynamic: (at 23 °C)	440 mPa·s	

10. Stability and reactivity

10.4. Conditions to avoid

Take precautionary measures against static discharges.

Materials to avoid

strong acid and alkalis Oxidizing agents.

10.6. Hazardous decomposition products

nitrogen oxides (NOx). Carbon dioxide. Carbon monoxide. smoke

11. Toxicological information

Specific effects in experiment on an animal

2.400 mg/kg (rat) LD50

Irritation and corrosivity

Irritant effect on the eye, mild irritation to the skin (rabbit).

Sensitising effects

Contact may cause skin sensitisation. (Guinea-pig.)

12. Ecological information

Further information

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

13. Disposal considerations

Advice on disposal

Dispose of waste according to applicable local, state, and federal regulations. e.g. transfer to a suitable incineration plant Waste key numbers are assigned according to the European Waste Catalogue (EWC) depending on the sector and process type.

Waste disposal number of waste from residues/unused products

070204 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other organic solvents, washing liquids and mother liquors
Classified as hazardous waste.

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Waste disposal number of used product

070204 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other organic solvents, washing liquids and mother liquors
Classified as hazardous waste.

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



ADR/RID packing group: III
Limited quantity: 5 L
Tunnel restriction code: E

Description of the goods

AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONDIAMINE)

Other applicable information (land transport)

: 274
: 3
: E
E0
: 1
E1

Marine transport (IMDG)

14.1. UN number: UN2735
IMDG code: 8
Marine pollutant: no
Hazard label: 8



IMDG packing group: III
EmS: F-A, S-B
Limited quantity: 5 L

Description of the goods

AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONDIAMINE, nonylphenol)

Other applicable information (marine transport)

: 223, 274, 944
Special provisions: 274

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E0

E1

Air transport (ICAO)

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



ICAO packing group: III
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

Description of the goods

AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORNDIAMINE)

Other applicable information (air transport)

: Y818
E0
:-
Special provisions: A3
E1
: Y841

15. Regulatory information

Labelling

Danger symbols: C - Corrosive



C - Corrosive

Hazardous components which must be listed on the label

Isophorondiamin
Benzylalkohol

R phrases

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
34 Causes burns.
43 May cause sensitisation 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.
36 Wear suitable protective clothing.
37 Wear suitable gloves.
39 Wear eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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Additional advice on labelling

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

GHS labelling

Signal word:

Danger

Pictograms:

corrosion; exclamation mark; environment



Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H411	Toxic 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.
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.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container to

EU regulatory information

Additional information

EC-identification.

National regulatory information

Water contaminating class (D): 2 - water contaminating

16. Other information

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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.
34	Causes burns.
43	May cause sensitisation by skin contact.
50	Very toxic to aquatic organisms.
51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
52	Harmful to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.
62	Possible risk of impaired fertility.
63	Possible risk of harm to the unborn child.

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.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

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.)