

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Hardener MP Advanced

Revision date: 20.11.2018

Product code: 125157-2018

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Hardener MP Advanced

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

Use of the substance/mixture

epoxy resin hardener

Uses advised against

Härter für Werkzeugsysteme

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

Regulation (EC) No. 1272/2008

Hazard Statements:
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes severe skin burns and eye damage.
Causes skin irritation.
Causes serious eye damage.
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of damaging fertility.
May cause respiratory irritation.
May cause damage to organs (...) through prolonged or repeated exposure.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.
Toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Diaminoethyltoluol 1,2-Diamino-cyclohexanBisphenol A; 4,4'-isopropylidenediphenol

Signal word: Danger

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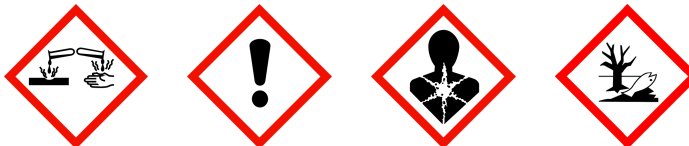
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Pictograms:



Hazard statements

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H361f	Suspected of damaging fertility.
H335	May cause respiratory irritation.
H373	May cause damage to organs (...) through prolonged or repeated exposure.
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.

Precautionary statements

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302+P352	IF ON SKIN: Wash with plenty of water.
P301+P310	IF SWALLOWED: Immediately call poison information centre.
P201	Obtain special instructions before use.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
68479-98-1	diethylmethylbenzenediamine			60-100 %
	270-877-4	612-130-00-0		
	Acute Tox. 4, Acute Tox. 4, STOT RE 2, Eye Irrit. 2, Aquatic Acute 1, Aquatic Chronic 1; H312 H302 H373 ** H319 H400 H410			
80-05-7	Bisphenol A; 4,4'-isopropylidenediphenol			7-13 %
	201-245-8	604-030-00-0		
	Repr. 1B, STOT SE 3, Eye Dam. 1, Skin Sens. 1; H360F H335 H318 H317			
104-15-4	p-toluenesulphonic acid (containing a maximum of 5 % H ₂ SO ₄)			1-3 %
	203-180-0	016-030-00-2		
	Eye Irrit. 2, STOT SE 3, Skin Irrit. 2; H319 H335 H315			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Immediately consult a doctor, presenting the packaging or label. Artificial respiration on respiratory arrest. First Aid for the person providing it can be dangerous to give mouth-to-mouth resuscitation. If unconscious place in

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recovery position and seek medical advice. Symptoms of poisoning can occur after several hours, therefore medical observation for at least 48 hours after the accident. Self-protection of the first aider. Remove from exposure, lie down. Irregular Atmund or artificial respiration. Remove contaminated clothing immediately.

After contact with skin

Immediately consult a doctor, presenting the packaging or label. Wash with plenty of water or soap and water. Remove contaminated clothing and wash affected area with soap and hot water. If irritation from contact persists, seek medical attention. Launder contaminated clothing - including shoes - prior to reuse. Chemical burns must be treated promptly by a physician. In the case of complaints or Symtomen avoid further impacts.

After contact with eyes

Chemical burns must be treated promptly by a physician. In the case of complaints or Symtomen avoid further impacts. Fllush immediately with cold water for 15 minutes and seek medical attention.

After ingestion

Immediately consult a doctor, presenting the packaging or label. Rinse mouth with water, drink water immediately and seek medical advice. Summon a doctor immediately. Do not induce vomiting. If swallowed give water to drink. Never give anything by mouth to an unconscious person. Chemical burns must be treated promptly by a physician. In the case of complaints or Symtomen avoid further impacts. No administration in cases of unconsciousness or cramps. If unconscious, storage and transport in stable lateral position

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

Risk of serious eye injury. May cause respiratory tract irritation Exposure to decomposition products may cause a health hazard. Symptoms can occur only after several hours. Causes severe burns. Contact may cause skin sensitisation. Harmful if swallowed, in contact with skin or if inhaled. When swallowed strong caustic effect on oral cavity and throat and risk of oesophagus and stomach perforation.

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

In case of inhalation of decomposition products in symptoms may be delayed. The affected person may need to be kept under medical observation 48 hours. Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

When fire or if heated, a pressure increase will occur and the container may burst. Very toxic to aquatic organisms. Fire residue and contaminated firefighting water must be disposed of in accordance with government regulations.

5.3. Advice for firefighters

Evacuate all non-essential personnel. No action shall be taken involving any personal risk or without suitable training. Wear breathing apparatus without recirculating air and suitable protective clothing. Fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic protection be chemical incidents.

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

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep away from unprotected people. Keep upwind. Do not breathe in gases/vapours/aerosols. Wear breathing apparatus without recirculating air and suitable protective clothing.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil. Notify the responsible authority when the substance enters open water, the soil, or sewerage system. Remove carefully with a mechanical means (e.g. with a clean PE shovel).

6.3. Methods and material for containment and cleaning up

Stop leak if safe to do so. Dilute with plenty of water. Notify the responsible authority when the substance

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enters open water, the soil, or sewerage system. Absorb with sand, earth, or another absorbent substance. The product must be disposed of by an approved company in accordance with the local government regulations.

6.4. Reference to other sections

1,8,13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Personal protective equipment see Section 8 Avoid contact during pregnancy and while nursing. Avoid contact with skin and eyes. Do not breathe in vapours or spray mists. Avoid release to the environment. Provide adequate room ventilation, if necessary with vapour extraction at the workplace. Keep only in the original container.

Advice on protection against fire and explosion

Personal protective equipment see Section 8 Avoid contact during pregnancy and while nursing. Avoid contact with skin and eyes. Do not breathe in vapours or spray mists. Avoid release to the environment. Provide adequate room ventilation, if necessary with vapour extraction at the workplace. Keep only in the original container.

Further information on handling

Do not smoke, eat, or drink during work. Take off contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Protect against the effects of heat and direct sunlight. Keep separate from other hazardous and incompatible substances. Keep locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
80-05-7	Bisphenol A, inhalable dust	-	10		TWA (8 h)	WEL

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation of the storage area. The exposure level should be below the permissible exposure level (PEL) or maximum allowable concentration (TLV) is held for this product. If exposure exceeds recommended levels, use a cartridge respirator or gas mask with NIOSH approval is recommended. If necessary, technical protection measures are carried out in order to reduce exposure.

Protective and hygiene measures

Wash hands before breaks and after work. Immediately take off soiled, impregnated clothing. Take off contaminated clothing and wash it before reuse. Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately. Do not inhale vapours. Wash hands before breaks and after work. Provide eye wash fountain in work area. Have emergency shower available.

Eye/face protection

Wear goggles. Use personal protection equipment.

Hand protection

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. Material of gloves for long term application (BTT > 480 min): Butyl rubber, Ethylvinylalkoholaminat (EVAL), nitrile rubber, neoprene rubber, polyvinyl chloride

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(PVC). Material of gloves for short-term use / Pritzer (10 min <BTT <480 min): Butyl rubber, Ethylcynylalkohollaminat (EVAL), nitrile rubber, polyvinyl chloride (PVC). There are in accordance with accepted standards such as for example EN 374 (Europe), F739 (U.S.) tested gloves are used. The suitability and durability of a glove is dependent on the use, eg the contact frequency and duration, the skill. Let us advise you always have the gloves. Additional information can for example be found under www.gisbau.de

Skin protection

Use personal protection equipment.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls

When monitoring emissions from plants, the following substances contained in this product are to be determined:

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

Physical state:	liquid
Colour:	yellow
Odour:	weak

Test method**Changes in the physical state**

Flash point:	>150 °C	DIN 51758
Decomposition temperature:	>200 °C	
Density (at 20 °C):	1 g/cm ³	
Viscosity / dynamic: (at 25 °C)	250 - 350 mPa·s	

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

unknown

10.2. Chemical stability

stable

10.3. Possibility of hazardous reactions

The product is stable under storage at normal ambient temperatures.

10.5. Incompatible materials

Acids strong alkalis strong alkalis and acid Strong oxidizing agents.

10.6. Hazardous decomposition products

The product is stable under storage at normal ambient temperatures.

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

Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
68479-98-1	diethylmethylenediamine				
	oral	ATE 500 mg/kg			
	dermal	ATE 1100 mg/kg			
80-05-7	Bisphenol A; 4,4'-isopropylidenediphenol				
	oral	LD50 3250 mg/kg	Rat	GESTIS	
	dermal	LD50 3000 mg/kg	Rabbit	IUCLID	
104-15-4	p-toluenesulphonic acid (containing a maximum of 5 % H ₂ SO ₄)				
	oral	LD50 2480 mg/kg	Rat	GESTIS	

Irritation and corrosivity

- Causes severe skin burns and eye damage.
- Causes skin irritation.
- Causes serious eye damage.
- Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Bisphenol A; 4,4'-isopropylidenediphenol)

Carcinogenic/mutagenic/toxic effects for reproduction

- Suspected of damaging fertility.
- Germ cell mutagenicity: Based on available data, the classification criteria are not met.
- Carcinogenicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

May cause damage to organs (...) through prolonged or repeated exposure. (diethylmethylenediamine)

Aspiration hazard

Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
80-05-7	Bisphenol A; 4,4'-isopropylidenediphenol					
	Acute fish toxicity	LC50 4,6 mg/l	96 h	Pimephales promelas	OECD 203	
	Acute algae toxicity	ErC50 2,73 mg/l	96 h	Selenastrum capricornutum	EPA-600/9-78-018	
	Acute crustacea toxicity	EC50 10,2 mg/l	48 h	Daphnia magna	E07-04, ASTM E-35.21	

12.2. Persistence and degradability

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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
80-05-7	Bisphenol A; 4,4'-isopropylidenediphenol			
	OECD 301F/ ISO 9408/ EEC 92/69/V, C.4-D	89%	28	
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
80-05-7	Bisphenol A; 4,4'-isopropylidenediphenol	3,32
104-15-4	p-toluenesulphonic acid (containing a maximum of 5 % H ₂ SO ₄)	0,93

BCF

CAS No	Chemical name	BCF	Species	Source
80-05-7	Bisphenol A; 4,4'-isopropylidenediphenol	5,1 - 67	Cyprinus carpio (Common Carp)	MITI guideline

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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; hazardous waste

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; hazardous waste

Waste disposal number of contaminated packaging

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; hazardous waste

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 2735
14.2. UN proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S.
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
 Excepted quantity: E2
 Transport category: 2
 Hazard No: 80

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Tunnel restriction code: E

Marine transport (IMDG)

14.1. UN number: UN 2735
14.2. UN proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Special Provisions: 274
 Limited quantity: 1 L
 Excepted quantity: E2
 EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 2735
14.2. UN proper shipping name: POLYAMINES, LIQUID, CORROSIVE, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Special Provisions: A3 A803
 Limited quantity Passenger: 0.5 L
 Passenger LQ: Y840
 Excepted quantity: E2
 IATA-packing instructions - Passenger: 851
 IATA-max. quantity - Passenger: 1 L
 IATA-packing instructions - Cargo: 855
 IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes

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

Authorisations (REACH, annex XIV):
 Substances of very high concern, SVHC (REACH, article 59):
 Bisphenol A; 4,4'-isopropylidenediphenol

Restrictions on use (REACH, annex XVII):
 Entry 30: Bisphenol A; 4,4'-isopropylidenediphenol

National regulatory information

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Water contaminating class (D): 2 - clearly water contaminating

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.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360F	May damage fertility.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs (...) through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
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.

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