

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Epoxy Resin L 20**

Revision date: 13.11.2019

Product code: 112113

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

Epoxy Resin L 20

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

Epoxy resin products, low in solvents, sensitising

**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 categories:

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory or skin sensitisation: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Causes skin irritation.

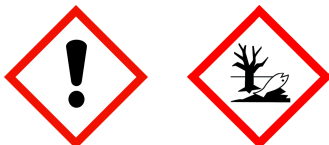
May cause an allergic skin reaction.

Causes serious eye irritation.

Toxic to aquatic life with long lasting effects.

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

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight &lt;= 700)

**Signal word:** Warning**Pictograms:****Hazard statements**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

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### Precautionary statements

P273 Avoid release to the environment.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### Special labelling of certain mixtures

EUH205 Contains epoxy constituents. May produce an allergic reaction.

### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Hazardous components

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	GHS Classification	
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	50 - 70 %
	500-033-5	603-074-00-8
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411	
9003-36-5	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin)	>=20 - <25 %
	500-006-8	603-074-00-8
	01-2119454392-40	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411	
16096-31-4	1,6-Bis(2,3-epoxypropoxy)hexane	15 - 20 %
	240-260-4	01-2119463471-41
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 3; H315 H319 H317 H412	

Full text of H and EUH statements: 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. Keep respiratory equipment at hand. First Aid for the person providing it can be dangerous to give mouth-to-mouth resuscitation.

#### After inhalation

Remove person to fresh air and keep comfortable for breathing. Move victim to fresh air. Put victim at rest and keep warm. In case of irregular breathing or respiratory arrest provide artificial respiration. First Aid for the person providing it can be dangerous to give mouth-to-mouth resuscitation. If unconscious place in recovery position and seek medical advice. 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.

#### 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

Remove contact lenses, if present and easy to do. Continue rinsing. Chemical burns must be treated promptly by a physician. In the case of complaints or Symptoms avoid further impacts. In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an

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ophthalmologist.

**After ingestion**

Rinse mouth thoroughly with water. Remove person to fresh air and keep comfortable for breathing. Let water be drunk in little sips (dilution effect). Do NOT induce vomiting. Risk of aspiration. Potential damage to lungs after vomiting. Never give anything by mouth to an unconscious person or a person with cramps. If unconscious place in recovery position and seek medical advice.

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

Gastrointestinal complaints. Prolonged or repeated contact with skin or mucous membrane result in irritation symptoms such as redness, blistering, dermatitis, etc.

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

Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

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

Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**

none known

**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. Harmful to aquatic life with long lasting effects. Do not allow to enter into surface water or drains.

Decomposition products may include the following materials: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide Nitrogen oxides (NO<sub>x</sub>).

**5.3. Advice for firefighters**

Evacuate all non-essential personnel. No action shall be taken involving any personal risk or without suitable training.

Fire-fighters should: 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.

**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**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas.

Only allow access to authorised staff. Do not breathe in gases/vapours/aerosols. Provide adequate ventilation.

In case of insufficient ventilation, wear suitable respiratory equipment.

For emergency responders : Personal protective equipment see Section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. share Pollution of rivers, lakes or sewers, according to local posited that the relevant competent authorities. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if environmental impacts caused by the product. (Sewers, waterways, soil or air) The containers from spill area.

**6.3. Methods and material for containment and cleaning up**

Stop leak if safe to do so. Dilute with plenty of water. Wipe up with absorbent material (eg. cloth, fleece).

Absorb with sand, earth, or another absorbent substance.

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### 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

Personal protection equipment: see section 8. Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid release to the environment. Provide adequate room ventilation, if necessary with vapour extraction at the workplace. Keep only in the original container. Keep receptacles tightly sealed.

#### Advice on protection against fire and explosion

No special fire protection measures are necessary.

#### Further information on handling

When using do not eat, drink, smoke, sniff. Wash hands with soap and water before eating and drinking. See Section 8, additional information on hygiene measures.

### 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 exhaust at critical locations. Keep container tightly closed and dry in a cool, well-ventilated place. Protect from heat and direct sunlight. Keep opened receptacles upright to prevent leakage.

#### Hints on joint storage

Keep away from incompatible substances under § 10.2. Keep away from food, drink and animal feedingstuffs.

### 7.3. Specific end use(s)

Hardener (Crosslinker )

## SECTION 8: Exposure controls/personal protection

### 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

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recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

#### Skin protection

Wear suitable protective clothing.

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state:	viscous
Colour:	light yellow
Odour:	characteristic

#### Test method

pH-Value (at 20 °C):	not determined
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#### Changes in the physical state

Melting point:	not determined
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Initial boiling point and boiling range:	> 200 °C
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Flash point:	> 150 °C	ISO 2719
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#### Flammability

Solid:	not applicable
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Gas:	not applicable
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Lower explosion limits:	not determined
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Upper explosion limits:	not determined
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Ignition temperature:	460 °C
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#### Auto-ignition temperature

Solid:	not applicable
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Gas:	not applicable
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Decomposition temperature:	not determined
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#### Oxidizing properties

Not oxidising.

Vapour pressure: (at 20 °C)	0,1 hPa
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Density (at 23 °C):	1,16 g/cm <sup>3</sup>	ISO 2811-2
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Water solubility:	The study does not need to be conducted because the substance is known to be insoluble in water.	
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#### Solubility in other solvents

not determined

Partition coefficient:	not determined
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Viscosity / dynamic: (at 25 °C)	750 - 1,050 mPa·s	ISO 9371
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Vapour density:	not determined
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Evaporation rate:	not determined
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#### 9.2. Other information

Solid content:	not determined
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**SECTION 10: Stability and reactivity****10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

**10.2. Chemical stability**

stable

**10.3. Possibility of hazardous reactions**

No dangerous reactions at a correct storage and handling.

**10.4. Conditions to avoid**

none

**10.5. Incompatible materials**

No known hazardous reactions.

**10.6. Hazardous decomposition products**

No known hazardous decomposition products.

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)				
	oral	LD50 mg/kg	11400	Rat	GESTIS
	dermal	LD50 mg/kg	> 22800	Rabbit	GESTIS
9003-36-5	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin)				
	oral	LD50 mg/kg	> 2000	Rat	
	dermal	LD50 mg/kg	> 2000	Rabbit	
16096-31-4	1,6-Bis(2,3-epoxypropoxy)hexane				
	oral	LD50 mg/kg	3010	Rat	OECD 401
	dermal	LD50 mg/kg	> 2000	Rat	OECD 402

**Additional information on tests**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**SECTION 12: Ecological information****12.1. Toxicity**

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

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)					
	Acute fish toxicity	LC50 4,4 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	EPA-660/3-75-009	
	Acute algae toxicity	ErC50 9,4 mg/l	72 h	Scenedesmus capricornutum	EPA-660/3-75-009	
	Acute crustacea toxicity	EC50 2,8 mg/l	48 h	Daphnia magna	OECD 202	
	Acute bacteria toxicity	(> 100 mg/l)	3 h	Activated sludge		
9003-36-5	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin)					
	Acute fish toxicity	LC50 2,54 mg/l	96 h			
16096-31-4	1,6-Bis(2,3-epoxypropoxy)hexane					
	Acute fish toxicity	LC50 30 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	OECD 203	
	Acute crustacea toxicity	EC50 39 - 57 mg/l	48 h	Daphnia magna	OECD 202	

#### 12.2. Persistence and degradability

Poorly biodegradable.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)			
	OECD 301F	5%	28	Manufacturer
	Not readily biodegradable (according to OECD criteria)			
	OECD 301B	6-12%	28	Manufacturer
	Not readily biodegradable (according to OECD criteria)			
9003-36-5	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-F-(epichlorhydrin)			
	OECD 301B	16%	28	Manufacturer
	Not readily biodegradable (according to OECD criteria)			
16096-31-4	1,6-Bis(2,3-epoxypropoxy)hexane			
	OECD 301D	47%	28	Manufacturer
	Readily biodegradable (according to OECD criteria).			

#### 12.3. Bioaccumulative potential

On the basis of existing data about the elimination/degradation and bioaccumulation potential longer term damage to the environment cannot be ruled out.

#### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	3,24

#### BCF

CAS No	Chemical name	BCF	Species	Source
25068-38-6	reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)	31		Quantitative structure-activity relationship (QSAR)
16096-31-4	1,6-Bis(2,3-epoxypropoxy)hexane	3,57		

#### 12.4. Mobility in soil

The product has not been tested.

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**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****Disposal recommendations**

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.

**List of Wastes Code - 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

**List of Wastes Code - 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**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Dispose of waste according to applicable legislation.

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

<b><u>14.1. UN number:</u></b>	UN 3082
<b><u>14.2. UN proper shipping name:</u></b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxidderivate)
<b><u>14.3. Transport hazard class(es):</u></b>	9
<b><u>14.4. Packing group:</u></b>	III
Hazard label:	9



Classification code:	M6
Special Provisions:	274 335 601
Limited quantity:	5 L
Transport category:	3
Hazard No:	90
Tunnel restriction code:	E

**Other applicable information (land transport)**

E1

**Inland waterways transport (ADN)**

<b><u>14.1. UN number:</u></b>	UN 3082
<b><u>14.2. UN proper shipping name:</u></b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxidderivate)



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**14.3. Transport hazard class(es):**

9

**14.4. Packing group:**

III

Hazard label:

9



Classification code:

M6

Special Provisions:

274 335 601

Limited quantity:

5 L

**Other applicable information (inland waterways transport)**

E1

**Marine transport (IMDG)****14.1. UN number:**

UN 3082

**14.2. UN proper shipping name:**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(epoxy derivatives)**14.3. Transport hazard class(es):**

9

**14.4. Packing group:**

III

Hazard label:

9



Marine pollutant:

Ja

Special Provisions:

274, 335

Limited quantity:

5 L

EmS:

F-A, S-F

**Other applicable information (marine transport)**

E1

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN number:**

UN 3082

**14.2. UN proper shipping name:**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(epoxy resin)**14.3. Transport hazard class(es):**

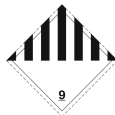
9

**14.4. Packing group:**

III

Hazard label:

9



Special Provisions:

A97 A158

Limited quantity Passenger:

30 kg G

IATA-packing instructions - Passenger:

964

IATA-max. quantity - Passenger:

450 L

IATA-packing instructions - Cargo:

964

IATA-max. quantity - Cargo:

450 L

**Other applicable information (air transport)**

E1

Passenger-LQ: Y964

**14.5. Environmental hazards**

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ENVIRONMENTALLY HAZARDOUS: yes



Danger releasing substance: epoxy resin (number average molecular weight  $\leq 700$ ), reaction product: bisphenol-A-(epichlorhydrin)

**14.6. Special precautions for user**

No information available.

**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**

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

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

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

**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%

**Relevant H and EUH statements (number and full text)**

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

EUH205 Contains epoxy constituents. May produce an allergic reaction.

**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.)*