

Safety Data Sheet
according to Regulation (EG) No. 1907/2006 (REACH)
according to Regulation (EU) No 453/2010

Article No.: F45.0002B Flexonal EP R2H
Print date: 25.02.2020 Revision date: 25.02.2020
Version: 1-1 Issue date: 25.02.2020

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

1.1 Product identifiers

Article No. (manufacturer/supplier): F45.0002B
Identification of the substance or mixture: Flexonal EP R2H

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

Application of the substance / the mixture:

Epoxy resin hardening agent

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Bachmann Kunststoff Technologien GmbH

Rudolf-Diesel-Str. 2

D-63322 Rödermark

Telefon: +49 6074 94394

Telefax: +49 6074 98544

Informing Department:

Information Contact:

Mr. Julien

E-mail (competent person):

service@bktgermany.com

1.4 Emergency Telephone Number:

Telephone: +49 6074 94394
Only available during office hours.

Poison Control Center Mainz - 24 h –
Emergency Call: +49 6131 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No.1272/2008 [CLP]

Acute Tox. 4

H302 Harmful if swallowed.

Skin Corr. 1A

H314 Causes severe skin burns and eye damage.

Eye Dam. 1

H318 Causes serious eye damage.

Skin Sens. 1

H317 May cause an allergic skin reaction

Aquatic Chronic 3

H412 Harmful to aquatic life with long lasting effects.

2.2 Label Elements

Labelling according to Regulation (EG) No. 1272/2008 [CLP]

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



Signal word

GHS05

GHS07

Danger

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.

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Precautionary statements

P260	Do not breathe dusts or mists.
P303+P361+P353	IF ON SKY (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]
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.
P321	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Contains:

3-aminomethyl-3,5,5-trimethylcyclohexylamine
Benzyl alcohol
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer
trimethylhexane-1,6-diamine
Phenol, 4,4'- (1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine

2.3 Other hazards

This substance/mixture does not contain components classified as either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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SECTION 3: Composition/information on ingredients

3.1 **Chemical characterisation:**

Mixtures

Description

Stabilized amine hardener for epoxy resins

Dangerous components:

Chemical Description	CAS-No. EG-No./List Registration-no. Indexno.	Classification (Regulation (EG) No. 1272/2008)	Concentration (%)
Benzyl alcohol	100-51-6 202-859-9 01-2119492630-38-xxxx 603-057-00-5	Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	25-50%
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2 220-666-8 01-2119514687-32-xxxx 612-067-00-9	Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1A, H317; Aquatic Chronic 3, H412	25-50%
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	68609-08-5 614-657-1 REACH Annex V No. 4	Skin Corr. 1B, H314; Eye Dam. 1, H318	10-25%
trimethylhexane-1,6-diamine	25513-64-8 247-063-2 01-2119560598-25-xxxx	Skin Corr. 1A, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Sens. 1A, H317	2.5-10%
Phenol, 4,4'- (1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine	111850-23-8 REACH Annex V No. 4	Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Sens. 1, H317	2.5-10%

Additional information: For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures General information

Instantly remove any clothing soiled by the product.

After inhalation

Take affected persons into the open air and position comfortably
Seek medical treatment in case of complaints.

After skin contact

Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.

After eye contact

Rinse opened eye for several minutes under running water.
Then consult doctor.

After swallowing

Drink copious amounts of water and provide fresh air. Instantly call for doctor.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

Information for doctor

No particular measures are known - treat according to symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Carbon dioxide (CO₂)
extinguishing powder or
water jet.
Fight larger fires with water
jet or alcohol-resistant
foam.

For safety reasons unsuitable extinguishing agents:

Water with a full water jet

5.2 Special hazards arising from the substance or mixture

Special hazards arising from the substance or mixture:

Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters

Protective equipment:

Put on breathing apparatus.

Additional information:

Dispose of fire debris and contaminated firefighting water in accordance with official regulations.

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SECTION 6: Accidental release measures

- 6.1 **Personal precautions, protective equipment and emergency procedures**
Personal precautions: See protective measures under points 7 and 8.
Wear protective clothing.
- 6.2 **Environmental precautions**
Environmental precautions: Do not allow product to reach sewage system or water bodies.
Do not allow to enter the ground/soil
- 6.3 **Methods and material for containment and cleaning up**
Cleaning procedure: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated materials as waste according to item 13.
Ensure adequate ventilation.
- 6.4 **Reference to other sections**
Clean the accident area carefully.

SECTION 7: Handling and storage

- 7.1 **Precautions for safety handling**
Notes on safe handling: The usual precautionary measures for handling chemicals must be observed..
Ensure good ventilation/exhaustion at the workplace
- Notes on fire and explosion protection: No special measures required.
- 7.2 **Conditions for safety storage, including any incompatibilities Storage**
Requirements to be met by storerooms and containers: Store only in unopened original containers.
Keep containers securely closed and dry, store frost-free.
Provide floor trough without outlet.
- Information on storage in one common storage facility: Store away from foodstuffs.
- Further information about storage conditions: Keep container tightly sealed..
- 7.3 **Specific end use(s)**
Specific end use(s): No further relevant information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients	CAS-No.	Value type (type of exposure)	Parameters to be monitored	Basis
Benzyl alcohol	100-51-6	Dermal	r 8 mg/kg / bw/d (langfristig)	DNEL
		Inhalative	22 mg/m ³ (langfristig)	
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2	Inhalative	0.073 mg/m ³	DNEL
100-51-6 Benzyl alcohol			1 mg/l (freshwater)	PNEC
			0.1 mg/l (seawater)	
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2		0.06 mg/l (freshwater)	PNEC
			0.006 mg/l (seawater)	
trimethylhexane-1,6-diamine	25513-64-8		0.102 mg/l (freshwater)	PNEC
			0.01 mg/l (seawater)	

Additional information:

The lists that were valid during the compilation were used as basis.

8.2 Exposure controls

Technical protective measures

Effective suction
 Efficient ventilation in all process areas.

Personel protective equipment

General protective and hygienic measures:

Keep away from foodstuffs, beverages and food.
 Take off immediately all contaminated clothing.
 Wash hands during breaks and at the end of the work.
 Avoid contact with the eyes and skin.

Breathing equipment:
 Recommended filter device for short term use:



Use breathing protection in case of insufficient ventilation.
 Combination filter A-P2

Protection of hands:



Plastic gloves
 Only use chemical-protective gloves with CE-labelling of category III.
 To minimize the wetness in the glove due to perspiration changing of gloves during a shift is required.
 Check the permeability prior to each a new use of the glove.
 Preventive skin protection by use of skin-protecting agents is recommended.

Material of gloves

Nitrile rubber, NBR
 Fluorocarbon rubber (Viton)
 PVC gloves

Recommended thickness of the material: ≥ 0.5 mm
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

As protection from splashes gloves made of the following materials are suitable:

PVC gloves

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Eye protection:



Body protection:

Risk management measures

Not suitable are gloves made of the following materials:

Strong gloves
Leather gloves

Tightly sealed safety glasses

Protective work clothing.

For safe spraying applications observe the substance-related exposure scenarios for benzyl alcohol as described below.

Professional uses for benzyl alcohol in mixtures (SU 19: Building and construction work): Covers concentration up to 50%

Spraying concentration high: Control of worker exposure for spray application is only ensured for horizontal or downward spray direction (PROC 11).

Duration: Covers exposure up to 70 min

Outdoor use: Covers exposure up to 2 h

Spraying concentration low: Control of worker exposure for spray application in any direction, including upwards (PROC 11).

Duration: Covers exposure up to 25 min

Outdoor use: Covers exposure up to 55 min

Spraying concentration high: Control of worker exposure for spray application in any direction, including upwards (PROC 11).

Duration: Covers exposure up to 20 min

Outdoor use: Covers exposure up to 45 min

Conditions affecting worker exposure:

Covers indoor and outdoor use

Room size: 100 m³

Physical form of product: Low volatile liquid, Aerosol

Vapour pressure: < 7 Pa (20 °C)

Temperature: Assumes process temperature up to 20 °C

Ventilation rate: Indoors with good natural ventilation.

Technical and organizational conditions as well as personal protective equipment:

The product causes serious eye irritation. Therefore, exposure should be minimized by appropriate risk management measures. Only appropriate trained and authorized staff may handle the substance.

Activity class: Spraying of liquids

Spray technique: Spraying with no or low compressed air use

Application rate: Moderate application rate (0.3 – 3 l/minute)

Worker distance: < 1 m

Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training (Dermal – minimum efficiency of 90 %) and suitable respiratory protection (Inhalation – minimum efficiency of 90%). In order to avoid possible contact with the product (sampling, spillage, leakage, cleaning) wear additionally protective clothing and eye protection.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Fluid
Colour:	Yellowish
Odour:	Amine-like
Melting point / freezing point:	Not determined
Initial boiling point and boiling range:	>200 °C
Flash point:	>100 °C
Self-inflammability:	Product is not selfigniting
Explosive properties:	Product is not explosive
Critical values for explosion	
Lower:	Not determined
Upper:	Not determined
Vapour pressure:	Not determined
Density:	1 g/cm ³ (23°C) (ISO 2811-2)
Solubility in / Miscibility with Water:	Not miscible or difficult to mix
Viscosity dynamic::	60 mPa.s (23°C) (ISO3219)

9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No further relevant information available.

10.2 Chemical stability

No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions

Reacts with acids, alkalis and oxidizing agents.

10.4 Conditions of avoid

No further relevant information available.

10.5 Incompatible materials

Substances to avoid:

Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products:
In the event of fire:

none, if stored and handled correctly.
toxic gases and vapours

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity Harmful if swallowed

LD/LC50 values that are relevant for classification:	
100-51-6 Benzyl alcohol	
Oral	1,040 mg/kg (mou)
	1,620 mg/kg (rat))
Dermal	>2,000 mg/kg (rbt)
2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine	
Oral	1,030 mg/kg (rat)
Dermal	1,840 mg/kg (rab)
	>2,000 mg/kg (rat)
25513-64-8 trimethylhexane-1,6-diamine	
Oral	910 mg/kg (rat)

Primary irritant effect

Skin corrosion/irritation:

Causes severe skin burns and eye damage.

Serious eye damage/irritation:

Causes serious eye damage.

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

CMR effects (carcinogeny, mutagenicity and toxic for reproduction)

Germ cell mutagenicity:

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

Carcinogenicity:

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

Reproduction toxicity:

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

STOT-single exposure:

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

STOT-repeated exposure:

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

Aspiration hazard:

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

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic Toxicity:

100-51-6 Benzyl alcohol	
Bakterientoxizität (Bacteria toxicity)	>658 mg/l (Pseudomonas putida) (EC10(16h))
Daphnientoxizität (Daphnia toxicity)	390 mg/l (Pseudomonas putida) (EC50(24h))
Algentoxizität (Algae toxicity)	230 mg/l (Daphnia magna (Wasserfloh)) (EC50(48h))
Fischtoxizität (Fish toxicity)	770 mg/l (Pseudokirchnerilla subcapitata) (IC50(72h))
	460 mg/l (Pimephales promelas) (LC50(96h))
	645 mg/l (Goldorfe (orfe)) (LC50(96h))
2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine	
Bakterien-Toxizität (Bacteria toxicity)	1,120 mg/l (Pseudomonas putida) (EC10(18h))
Daphnientoxizität (Daphnia toxicity)	23 mg/l (Daphnia magna (Wasserfloh)) (EC50(48h))
Algentoxizität (Algae toxicity)	>50 mg/l (Scenedesmus subspicatus) (ErC50(72h))
Fischtoxizität (Fish toxicity)	110 mg/l (Leuciscus idus) (LC50(96h))
25513-64-8 trimethylhexane-1,6-diamine	
Bakterientoxizität (Bacteria toxicity) (static)	89 mg/l (Pseudomonas putida) (EC50(17h))
Daphnientoxizität (Daphnia toxicity)	31.5 mg/l (Daphnia magna (Wasserfloh)) (EC50(24h))
Algentoxizität (Algae toxicity)	43.5 mg/l (Scenedesmus subspicatus) (ErC50(72h))
Fischtoxizität (Fish toxicity)	174 mg/l (Leuciscus idus) (LC50(48h))

12.2 Persistence and degradability

Biodegradability: No further relevant information available.

12.3 Bioaccumulative potential

Bioaccumulation: No further relevant information available.

12.4 Mobility in soil

Mobility in soil: No further relevant information available.

Ecotoxicological effects: Not determined

Remark: Harmful to fish.

Additional ecological information:

General notes: Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into soil.
Harmful to aquatic organisms.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable

12.6 Other adverse effects

No further relevant information available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation:

For disposal, Local regulations issued by the authorities must be observed. Dispose of liquid components at a suitable incineration plant. After curing, the product can be disposed of with household waste.

European waste catalogue	
08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 02 00	wastes from MFSU of other coatings (including ceramic materials)
08 02 99	wastes not otherwise specified

Uncleaned packagings:



Disposal must be made according to official regulations.

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SECTION 14 Transport information

14.1	UN-Number ADR/RID/ADN, IMG, IATA	UN2735
14.2	UN proper shipping name ADR/RID/ADN IMDG, IATA	2735 AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE) AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE)
14.3	Transport hazard class(es) ADR/RID/ADN 	Class Label
		8 (C7) Corrosive substances. 8
	IMDG, IATA 	Class Label
		8 (C7) Corrosive substances. 8
14.4	Packing group ADR/RID/ADN, IMDG, IATA	III
14.5	Environmental hazards: Marine pollutant	No
14.6	Special precautions for user	Warning: Corrosive substances. (Kemler Number): 80 EMS-Number: F-A, S-B Segregation group: Alkalis Stowage Category: A Segregation Code: SG35 Stow "separated from" SGG1-acids
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable
Transport/ Additional information:		
ADR/RID/ADN		
Excepted quantities (EQ):	E1	
Limited quantities	5L	
Excepted quantities	Code: E1	
	Maximum net quantity per inner packaging : 30 ml	
	Maximum net quantity per outer packaging : 1000 ml	
Transport category	3	
Tunnel restriction Code:	E	
IMDG		
Limited quantities (LQ)	5L	
Excepted quantities (EQ)	Code : E1	
	Maximum net quantity per inner packaging : 30 ml	
	Maximum net quantity per outer packaging : 1000ml	
UN « Model Regulation » :	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (ISOPHORONEDIAMINE), 8, III	

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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture

Directive 21012/18/EU

Named dangerous substances – ANNEX I

REGULATION (EC) No 1907/2006 ANNEX XVI

None of the ingredients is listed.

Conditions of restriction: 3

National regulations:

VOC -EU (Decopaint-Directive 2004/42/EG)
< 500g/l

Water hazard class:

Water hazard class 2 (Self-assessment): hazardous for water.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out..

SECTION 16: Other information

Relevant Phrases

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.

H318

Causes serious eye damage.

H319

Causes serious eye irritation.

H332

Harmful if inhaled.

H412

Harmful to aquatic life with long lasting effects.

Other information

Training information:

Ensure adequate information, instruction and training for users.

To the best of our knowledge, the information in this safety data sheet corresponds to our knowledge at the time of revision. The information is intended to provide guidance on the safe handling of the product specified in this safety data sheet during storage, processing, transport and disposal. The information is not transferable to other products. Insofar as the product mentioned in this safety data sheet is mixed, blended or processed with other materials or undergoes treatment, the information in this safety data sheet cannot be transferred to the new material thus produced, unless expressly stated otherwise.