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

1.1. Product identifier

RAKU-TOOL EP-2306 Resin

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

Use of the substance/mixture

model building material

Uses advised against

no data available

1.3. Details of the supplier of the safety data sheet

Company name:	RAMPF Tooling Solutions GmbH & Co. KG	
Street:	Robert-Bosch-Str. 8-10	
Place:	D-72661 Grafenberg	
Telephone:	+49(0)7123-9342-1600	Telefax: +49(0)7123/93421666
e-mail:	tooling.solutions@rampf-gruppe.de	

1.4. Emergency telephone number:

Emergency telephone : ++49 (0) 6132 / 84463 GBK GmbH Global Regulatory Compliance, Ingelheim

Further Information

no data available

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

2.2. Label elements

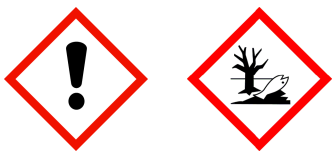
Regulation (EC) No. 1272/2008

Hazard components for labelling

epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin);
Bisphenol F-epichlorohydrin resin;
1,2,3- propanetriol, glycidyl ether

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.

Precautionary statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P362+P364 Take off contaminated clothing and wash it before reuse.

P501 Dispose of contents/container to hazardous or special waste collection point..

2.3. Other hazards

Not fulfilling PBT.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture of the following substances with non-hazardous admixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)			40 - < 45 %
	500-033-5	603-074-00-8	01-2119456619-26	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411			
9003-36-5	Bisphenol F-epichlorohydrin resin			10 - < 15 %
	500-006-8		01-2119454392-40	
	Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411			
90529-77-4	1,2,3- propanetriol, glycidyl ether			5 - < 10 %
	292-011-4			
	Skin Irrit. 2, Eye Irrit. 2A; H315 H319			
38640-62-9	Diisopropylnaphthalene isomers			< 1 %
	254-052-6		01-2119565150-48	
	Asp. Tox. 1, Aquatic Chronic 1; H304 H410			

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

Further Information

none

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately.
In the event of persistent symptoms receive medical treatment.

After inhalation

Move to fresh air in case of accidental inhalation of vapours or decomposition products.
In the event of symptoms refer for medical treatment.

After contact with skin

Wash off immediately with soap and plenty of water.
Consult a doctor if skin irritation persists.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical treatment by eye specialist.

After ingestion

Immediately give plenty of water (if possible charcoal slurry).Do not induce vomiting.
Never give anything by mouth to an unconscious person.
Summon a doctor immediately.

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

no data available

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

no data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam, carbon dioxide (CO2), dry chemical, water-spray.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Fire may produce:
Carbon monoxide and carbon dioxide.

5.3. Advice for firefighters

Protective suit
Use breathing apparatus with independent air supply.

Additional information

Do not let enter contaminated extinguishing water into the soil, groundwater or sutface waters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

In case of vapour formation use respirator.
Ensure adequate ventilation.
Use personal protective clothing.
Keep away from sources of ignition - No smoking.

6.2. Environmental precautions

Clean contaminated surface thoroughly.
Do not discharge into the drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).
Take up mechanically and collect in suitable container for disposal.

6.4. Reference to other sections

none

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Keep container tightly closed.
Use only in thoroughly ventilated areas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion

No special protective measures against fire required.

Further information on handling

no data available

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a dry, cool and well-ventilated place.
Protect against direct sun radiation.

Advice on storage compatibility

Incompatible with: Bases, Amines, Alcohols

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.
Keep at temperatures between 5°C and 40°C.

7.3. Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
1317-65-3	Limestone, total inhalable	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)			
Worker DNEL, acute		dermal	systemic	8,3 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	12,3 mg/m³
Worker DNEL, long-term		dermal	systemic	8,3 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	12,3 mg/m³
9003-36-5	Bisphenol F-epichlorohydrin resin			
Worker DNEL, long-term		dermal	systemic	104,15 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	29,39 mg/m³

PNEC values

CAS No	Substance	
Environmental compartment		Value
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)	
Freshwater		0,006 mg/l
Marine water		0,0006 mg/l
Freshwater sediment		0,996 mg/l
Marine sediment		0,0996 mg/l
Soil		0,196 mg/l
9003-36-5	Bisphenol F-epichlorohydrin resin	
Freshwater		0,003 mg/l
Marine water		0,0003 mg/l
Freshwater sediment		0,294 mg/kg
Marine sediment		0,0294 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		0,237 mg/kg

Additional advice on limit values

Further Information no data available

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Protective and hygiene measures

Do not inhale vapours.
Wash hands before breaks and immediately after handling the product.
When using, do not eat, drink or smoke.
Avoid contact with skin, eyes and clothing.
Remove and wash contaminated clothes before re-use.

Eye/face protection

Tightly fitting goggles

Hand protection

Protective gloves resistant to chemicals made off nitrile , Minimum coat thickness 0.4 mm, Permeation resistance (wear duration) approx. 480 minutes, i.e. protective glove <Camatril Velours 730> made by www.kcl.de. ,
butyl rubber (Butyl) - = 0.7 mm thickness; i.e. < Butoject 898> made by KCL.
This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.
Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

Skin protection

Light protective clothing, Safety Shoes

Respiratory protection

Use suitable breathing apparatus if there is inadequate ventilation.
If product is sprayed, use fresh-air breathing apparatus or (only short-term use) a combination filter A2-P2.

Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Pasty
Colour:	Brown
Odour:	slight
pH-Value:	n.d.

Changes in the physical state

Melting point:	n.d.
Initial boiling point and boiling range:	> 200 °C
Flash point:	> 100 °C

Flammability

Solid:	n.d.
Gas:	n.d.

Explosive properties

Product does not present an explosion hazard.

Decomposition temperature:	> 200 °C

Oxidizing properties

n.a.

Vapour pressure:	n.d.
Density (at 20 °C):	ca. 0,8 g/cm³
Water solubility: (at 20 °C)	Insoluble
Partition coefficient:	n.d.
Viscosity / dynamic: (at 25 °C)	250000 - 350000 mPa·s
Vapour density:	n.d.
Evaporation rate:	n.d.

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Exothermic reaction with: Bases, Amines, Alcohols

10.2. Chemical stability

Stable at normal conditions

10.3. Possibility of hazardous reactions

Stable at normal conditions

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Exothermic reaction with: Bases, Amines, Alcohols

10.6. Hazardous decomposition products

no data available

Further information

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

no data available

Acute toxicity

no data available

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)					
	oral	LD50 mg/kg	>15000	Rat		
	dermal	LD50 mg/kg	23000	Rabbit		
9003-36-5	Bisphenol F-epichlorohydrin resin					
	oral	LD50 mg/kg	> 2000	Rat		
	dermal	LD50 mg/kg	> 2000	Rat		
90529-77-4	1,2,3- propanetriol, glycidyl ether					
	oral	LD50 mg/kg	> 5000	Rat		
38640-62-9	Diisopropylnaphthalene isomers					
	oral	LD50 mg/kg	> 4000	Rat	OECD 401	
	dermal	LD50 mg/kg	> 4000	Rat	OECD 402	
	inhalative (4 h) aerosol	LC50 mg/l	> 5,6	Rat	OECD 403	

Irritation and corrosivity

Irritating to skin..

Causes serious eye irritation.

Sensitising effects

Sensitization through skin contact possible.

Carcinogenic/mutagenic/toxic effects for reproduction

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

Specific effects in experiment on an animal

no data available

Additional information on tests

no data available

Practical experience

Observations relevant to classification

no data available

Other observations

no data available

SECTION 12: Ecological information

12.1. Toxicity

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

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)						
	Acute fish toxicity	LC50	2 mg/l	96 h	Rainbow trout		
	Acute algae toxicity	ErC50	11 mg/l	72 h	algae		
	Acute crustacea toxicity	EC50	1,8 mg/l	48 h	Daphnia		
9003-36-5	Bisphenol F-epichlorohydrin resin						
	Acute fish toxicity	LC50 mg/l	2,54	96 h	Fish		
	Acute algae toxicity	ErC50 mg/l	> 1000	72 h	algae		
	Acute crustacea toxicity	EC50 mg/l	2,55	48 h	Daphnia		
38640-62-9	Diisopropylnaphthalene isomers						
	Acute fish toxicity	LC50	0,5 mg/l	96 h		OECD 203	
	Acute algae toxicity	ErC50 mg/l	0,15	72 h		OECD 201	
	Acute crustacea toxicity	EC50 mg/l	0,16	48 h	Daphnia	DIN 38412, part 11	
	Crustacea toxicity	NOEC mg/l	0,013	21 d	Daphnia	OECD 202, part 2	

12.2. Persistence and degradability

no data available

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)			
	Biodegradable (OECD):	6 - 12 %	28	
	Not readily biodegradable (42%)			
9003-36-5	Bisphenol F-epichlorohydrin resin			
	Biodegradable (OECD): 301 B	16 %	28	
	Not readily biodegradable (42%)			

12.3. Bioaccumulative potential

no data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
25068-38-6	epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)	2,64 - 3,78
9003-36-5	Bisphenol F-epichlorohydrin resin	3,3

BCF

CAS No	Chemical name	BCF	Species	Source
38640-62-9	Diisopropylnaphthalene isomers	> 500		

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

no data available

Further information

Do not flush into surface water or sanitary sewer system.
Hazard to waters

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Where possible recycling is preferred to disposal.
Can be incinerated, when in compliance with local regulations.
It is not possible to give this product a waste code number according to the European waste catalogue because only the intended use of the user consents the assignment of a specific code number.
The waste code number must be agreed with the disposer / manufacturer / competent authority.

Contaminated packaging

Contaminated packagings are to be treated like the product itself.
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.
Packaging that cannot be cleaned should be disposed of like the product.

SECTION 14: Transport information

Land transport (ADR/RID)

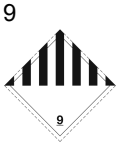
14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxide derivatives)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

Hazard label: 9



Classification code: M6
Special Provisions: 274 335 375 601
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 90

Marine transport (IMDG)

14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxide derivates)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

Hazard label: 9

Marine pollutant: yes
Special Provisions: 274, 335, 969
Limited quantity: 5 L
Excepted quantity: E1
EmS: F-A, S-F

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. (Epoxide derivates)

14.3. Transport hazard class(es): 9

14.4. Packing group: III

Hazard label: 9

Special Provisions: A97 A158 A197
Limited quantity Passenger: 30 kg G
Passenger LQ: Y964
Excepted quantity: E1
IATA-packing instructions - Passenger: 964
IATA-max. quantity - Passenger: 450 L
IATA-packing instructions - Cargo: 964
IATA-max. quantity - Cargo: 450 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

no data available

Other applicable information

no data available

SECTION 15: Regulatory information

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

EU regulatory information

Additional information

This product does not contain substances of very high concern > 0,1% (Regulation (EC) No 1907/2006 (REACH), Article 57).

National regulatory information

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

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s) 2, 3

Abbreviations and acronyms

"(n.a. = not applicable; n.d. = not determined)"

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The classification is based on the calculation method according to Regulation (EU) No. 1272/2008

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.
The information describes exclusively the safety requirements for the product (s) and is based on the present level of our knowledge.
The delivery specifications are contained in the corresponding product sheet.
This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

Key literature references and sources for data Regulation (EC) No 1907/2006; Regulation (EC) No. 1272/2008

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