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

1.1. Product identifier

RAKU-TOOL EH-2904-1

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

Use of the substance/mixture

model building material
Hardener

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: C - Corrosive, Xn - Harmful
R phrases:
Harmful by inhalation, in contact with skin and if swallowed.
Causes burns.
May cause sensitisation by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

Hazard categories:
Acute toxicity: Acute Tox. 4
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 3
Hazard Statements:
Harmful if swallowed or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazardous components which must be listed on the label

benzyl alcohol
3-aminomethyl-3,5,5-trimethylcyclohexylamine
trimethylhexane-1,6-diamine
m-phenylenbis (methylamine)

Signal word:	Danger
Pictograms:	GHS05-GHS07

Hazard statements

H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P273	Avoid release to the environment.
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.
P310	Immediately call a POISON CENTER/doctor.

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

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
202-859-9	benzyl alcohol	40 - < 45 %
100-51-6	Xn - Harmful R20/22	
603-057-00-5	Acute Tox. 4, Acute Tox. 4; H332 H302	
220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine	30 - < 35 %
2855-13-2	C - Corrosive, Xn - Harmful R21/22-34-43-52-53	
612-067-00-9	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H302 H312 H314 H317 H412	
01-2119514687-32		
247-134-8	trimethylhexane-1,6-diamine	10 - < 15 %
25620-58-0	C - Corrosive, Xn - Harmful R22-34-43-52-53	
	Acute Tox. 4, Skin Corr. 1C, Skin Sens. 1, Aquatic Chronic 3; H302 H314 H317 H412	
216-032-5	m-phenylenbis(methylamine)	1 - < 5 %
1477-55-0	C - Corrosive, Xn - Harmful R20/22-35-43-52-53	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H302 H332 H314 H317 H412 EUH071	
01-2119480150-50		

Full text of R-, H- and EUH-phrases: see section 16.

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).
Never give anything by mouth to an unconscious person.
Summon a doctor immediately.
Induce vomiting only upon the advice of a physician.

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:
Nitrous oxides (NOx), Carbon monoxide and carbon dioxide.

5.3. Advice for firefighters

Use breathing apparatus with independent air supply. Wear full protective suit.

Additional information

None

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).
Shovel into 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.

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.

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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.
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.

Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	light yellow
Odour:	Characteristic

		Test method
pH-Value:	alkaline	
Changes in the physical state		
Initial boiling point and boiling range:	> 200 °C	
Flash point:	> 100 °C	
Lower explosion limits:	1,3 vol. %	
Upper explosion limits:	13,0 vol. %	
Ignition temperature:	380 °C	
Vapour pressure:	0,1 hPa	
Density (at 20 °C):	1 g/cm³	
Water solubility: (at 20 °C)	Partly soluble	OECD 105
Viscosity / dynamic: (at 20 °C)	150 mPa·s	

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable at normal conditions

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.
Protect against direct sun radiation.

10.5. Incompatible materials

Strong oxidizing agents., Acids and bases
Exothermic reaction with: Acids

10.6. Hazardous decomposition products

Ammonia, Nitrous oxides (NOx), Carbon monoxide and carbon dioxide.

Further information

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

Stable at normal conditions

ATEmix calculated

ATE (oral) 1035,6 mg/kg; ATE (inhalative vapour) 17,50 mg/l; ATE (inhalative aerosol) 2,517 mg/l

Acute toxicity

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
100-51-6	benzyl alcohol				
	oral	LD50	1230 mg/kg	Rat	GESTIS
	inhalative vapour	ATE	11 mg/l		
	inhalative aerosol	ATE	1,5 mg/l		
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine				
	oral	LD50	1030 mg/kg	Rat	
	dermal	LD50	1840 mg/kg	rabbit	
25620-58-0	trimethylhexane-1,6-diamine				
	oral	LD50	910 mg/kg	rat	
1477-55-0	m-phenylenbis(methylamine)				
	oral	ATE	500 mg/kg		
	inhalative vapour	ATE	11 mg/l		
	inhalative aerosol	ATE	1,5 mg/l		

Irritation and corrosivity

Causes burns.

Sensitising effects

Sensitization through skin contact possible.

STOT-single exposure

no data available

Severe effects after repeated or prolonged 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

no data available

12.2. Persistence and degradability

no data available

12.3. Bioaccumulative potential

no data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
100-51-6	benzyl alcohol	1,05
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	1,9

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 2735

14.2. UN proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine; trimethylhexane-1,6-diamine)

14.3. Transport hazard class(es): 8

14.4. Packing group: III

Hazard label: 8

Classification code: C7
Special Provisions: 274
Limited quantity: LQ7
Transport category: 3
Hazard No: 80
Tunnel restriction code: E

Other applicable information (land transport)

E1

Marine transport (IMDG)

14.1. UN number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine; trimethylhexane-1,6-diamine)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8

Special Provisions:	223, 274
Limited quantity:	5 L
EmS:	F-A, S-B

Other applicable information (marine transport)

E1

Air transport (ICAO)

14.1. UN number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (3-aminomethyl-3,5,5-trimethylcyclohexylamine; trimethylhexane-1,6-diamine)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8

Special Provisions:	A3
Limited quantity Passenger:	1 L
IATA-packing instructions - Passenger:	818
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	820
IATA-max. quantity - Cargo:	60 L

Other applicable information (air transport)

E1

Passenger-LQ:: Y818

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 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

2004/42/EC (VOC): 79,8 % (798 g/l)

National regulatory information

Water contaminating class (D): 2 - water contaminating

Additional information

"ZH 1/129 ""Data Sheet: Irritating substances / corrosive substances (M 004)"""

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s) 1, 2, 3, 8, 10, 11

Relevant R-phrases (Number and full text)

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.
35	Causes severe burns.
43	May cause sensitisation by skin contact.
52	Harmful to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.

Relevant H- and EUH-phrases (Number and full text)

H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
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.
H412	Harmful to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

Further Information

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

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