

Safety Data Sheet

according to Regulation (EC) No 1907/2006



FLAMMADUR® E 711 H

Revision date: 28.04.2020

Product code: 12657-0016

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

1.1. Product identifier

FLAMMADUR® E 711 H

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

Use of the substance/mixture

Hardener component for 2K coating system

1.3. Details of the supplier of the safety data sheet

Company name: AIK Flammadur Brandschutz GmbH
Street: Glüsinger Straße 86
Place: D-21217 Seevetal
Telephone: ++49-(0)561-5801-0 Telefax: ++49-(0)561-5801-240
e-mail: info@aik-flammadur.de
Internet: aik-flammadur.de
Responsible Department: Responsible for the safety data sheet: GBK GmbH, Ingelheim

1.4. Emergency telephone number: INTERNATIONAL: +49 - (0) 6132 - 84463, GBK GmbH (24h - 7d/w - 365d/a)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

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 or skin sensitisation: Skin Sens. 1

Reproductive toxicity: Repr. 2

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Harmful if swallowed.

Harmful if inhaled.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of damaging the unborn child.

Harmful to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

3,6-diazaoctanethylenediamin; triethylenetetramine

3-aminomethyl-3,5,5-trimethylcyclohexylamine

M-phenylenebis(methylamine)

salicylic acid

Signal word: Danger

Pictograms:



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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.
H361d	Suspected of damaging the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Additional advice on labelling

The product is labeled in accordance with Regulation (EC) no. 1272/2008 (GHS).

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Pictograms:



Hazard statements

H314-H361d

Precautionary statements

P280-P305+P351+P338

2.3. Other hazards

For their own protection, persons who suffer from hypersensitivity of the respiratory tract (e. g. asthmatics and chronic bronchitis sufferers) should avoid handling this product.

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Complex mixture

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Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
112-24-3	3,6-diazaoctanethylenediamin; triethylenetetramine			30 - 40 %
	203-950-6	612-059-00-5		
	Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H312 H314 H317 H412			
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine			10 - 20 %
	220-666-8	612-067-00-9	01-2119514687-32	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H317 H412			
1477-55-0	M-phenylenebis(methylamine)			10 - 20 %
	216-032-5		01-2119480150-50	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Aquatic Chronic 3; H332 H302 H314 H317 H412 EUH071			
100-51-6	benzyl alcohol			10 - 20 %
	202-859-9	603-057-00-5	01-2119492630-38	
	Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H332 H302 H319			
69-72-7	salicylic acid			3 - 5 %
	200-712-3	607-732-00-5	01-2119486984-17	
	Repr. 2, Acute Tox. 4, Eye Dam. 1; H361d H302 H318			

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

Further Information

The product does not contain SVHC substances in accordance with Article 57 of the REACH Regulation.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately and dispose of safely.

After inhalation

Take affected person away from danger area. Move to fresh air in case of accidental inhalation of vapours. Refer for medical treatment. In case of the person being unconscious put him/her in a stable side position. If patient is not breathing, apply artificial respiration.

After contact with skin

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

After contact with eyes

Remove contact lens. Rinse thoroughly with plenty of water, also under the eyelids. Summon a doctor immediately. The information contained in the SDS have ready for disposal.

After ingestion

Rinse out mouth and give plenty of water to drink. Do not induce vomiting. Summon a doctor immediately. Never give anything by mouth to an unconscious person.

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

Symptoms of poisoning may not occur for many hours, therefore keep under medical supervision for at least 48 hours.

Harmful if swallowed or if inhaled.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

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Suspected of damaging the unborn child.

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Shortness of breath.

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

Continue to monitor for pneumonia and pulmonary oedema. Symptoms of poisoning may not occur for many hours, therefore keep under medical supervision for at least 48 hours.

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

In the event of fire the following can be released: carbon monoxide and carbon dioxide, toxic gases/vapours.

Heating will cause pressure rise with risk of bursting.

5.3. Advice for firefighters

Use breathing apparatus with independent air supply.

Additional information

In case of fire and/or explosion do not breathe fumes. Apply cooling water to the side of containers that are exposed to flames. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove persons to safety. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes and clothing. High risk of slipping due to leakage/spillage of product.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/ground water. Inform competent authority about release into the sewage, ground or into waters.

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). Dispose of contaminated material as waste according to section 13. Use chemical neutralizers. Ensure adequate ventilation.

6.4. Reference to other sections

Information for personal protective equipment look up section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Unauthorized persons are prohibited to enter. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes and clothing. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. When using do not eat, drink or smoke. Information on label instructions.

Further information on handling

Take the usual precautions when handling with chemicals. Wash hands before breaks and at the end of workday. Keep away from food, drink and animal feeding stuffs. Remove contaminated soaked clothing immediately, don't leave to dry.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.

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Use only in well-ventilated areas.

Hints on joint storage

Do not store together with oxidizing agents. Do not store with acids or alkalies.

Further information on storage conditions

Protect from heat and direct solar radiation. Store in a dry place.

Recommended storage temperature: 4 - 40°C.

7.3. Specific end use(s)

Hardener component for 2K coating system

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
100-51-6	benzyl alcohol			
Worker DNEL, long-term		inhalation	systemic	22 mg/m ³
Worker DNEL, acute		inhalation	systemic	110 mg/m ³
Worker DNEL, long-term		dermal	systemic	8 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	40 mg/kg bw/day

PNEC values

CAS No	Substance	Value
100-51-6	benzyl alcohol	
Freshwater		1 mg/l
Marine water		0,1 mg/l
Freshwater sediment		5,27 mg/kg
Marine sediment		0,527 mg/kg
Soil		0,456 mg/kg

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls



Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Protective and hygiene measures

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.

Eye/face protection

Eye wash bottle with pure water (EN 15154).

Tightly fitting goggles (EN 166).

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Hand protection

Protective gloves (EN 374)

Suitable materials also for extended, direct contact (recommended: protection index 6, corresponding to a permeation rate > 480 minutes according to EN 374): Polychloropren - CR (0,5 mm), Nitrile rubber/nitrile latex - NBR (0,35 mm), Butyl rubber - Butyl (0,5 mm), Fluoro-rubber - FKM (0.4 mm).

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

Long sleeved clothing (DIN EN ISO 6530)

Respiratory protection

Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation or long-term effect wear suitable respiratory equipment. Filter type A-P2

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	according to product specification
Odour:	Characteristic
pH-Value:	Not applicable

Changes in the physical state

Melting point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	101 °C
Sustaining combustion:	No data available

Explosive properties

The product is not explosive.

Lower explosion limits:	Not determined
Upper explosion limits:	Not determined
Ignition temperature:	335 °C
Decomposition temperature:	Not determined

Oxidizing properties

Not fire-promoting.

Vapour pressure: (at 20 °C)	Not determined
Density (at 20 °C):	Not determined
Water solubility:	insoluble

Solubility in other solvents

Not determined

Partition coefficient:	Not determined
Viscosity / dynamic: (at 20 °C)	Not determined
Viscosity / kinematic:	Not determined
Solvent content:	15 %

9.2. Other information

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The delivery specifications are contained in the corresponding product sheet.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity with the intended use is not associated with any hazards.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

Protect from heat and direct solar radiation.

Protect from moisture.

10.5. Incompatible materials

Alcohols, amines, Bases, Acids, Water.

10.6. Hazardous decomposition products

No decomposition if used as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Harmful if swallowed.

Harmful if inhaled.

ATEmix calculated

ATE (oral) 1627,5 mg/kg; ATE (inhalation aerosol) 3,896 mg/l

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
112-24-3	3,6-diazaoctanethylenediamin; triethylenetetramine				
	oral	LD50 2500 mg/kg	Rat		
	dermal	LD50 805 mg/kg	Rabbit		
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine				
	oral	LD50 1030 mg/kg	Rat		
	dermal	LD50 1840 mg/kg	Rabbit		
1477-55-0	M-phenylenebis(methylamine)				
	oral	LD50 930 mg/kg	Rat		
	dermal	LD50 ~ 2000 mg/kg	Rabbit		
	inhalation (4 h) vapour	LC50 2,4 mg/l	Rat		
	inhalation aerosol	ATE 1,5 mg/l			
100-51-6	benzyl alcohol				
	oral	LD50 1230 mg/kg	Rat		
	inhalation vapour	ATE 11 mg/l			
	inhalation aerosol	ATE 1,5 mg/l			
69-72-7	salicylic acid				
	oral	LD50 891 mg/kg	Rat		OECD 401
	dermal	LD50 > 2000 mg/kg	Rat		OECD 402

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

Sensitising effects

May cause an allergic skin reaction. (3,6-diazaoctanethylenediamin; triethylenetetramine; 3-aminomethyl-3,5,5-trimethylcyclohexylamine; M-phenylenebis(methylamine))

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging the unborn child. (salicylic acid)

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

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.

Further information

If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.

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SECTION 12: Ecological information

12.1. Toxicity

The product: No data available

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
112-24-3	3,6-diazaoctanethylenediamin; triethylenetetramine					
	Acute algae toxicity	ErC50 > 100 mg/l	72 h	Algae		
	Acute crustacea toxicity	EC50 92 mg/l	48 h	Daphnia magna		
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine					
	Acute fish toxicity	LC50 110 mg/l	96 h	Brachidanio rerio		
	Acute algae toxicity	ErC50 37 mg/l	72 h	Scenedesmus subspicatus		
	Acute crustacea toxicity	EC50 23 mg/l	48 h	Daphnia magna		
1477-55-0	M-phenylenebis(methylamine)					
	Acute fish toxicity	LC50 > 100 mg/l	96 h	Oncorhynchus mykiss		
	Acute crustacea toxicity	EC50 16 mg/l	48 h	Daphnia magna		

12.2. Persistence and degradability

The product: No data available

12.3. Bioaccumulative potential

The product: No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
112-24-3	3,6-diazaoctanethylenediamin; triethylenetetramine	-1,66
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	1,9
100-51-6	benzyl alcohol	1,05

12.4. Mobility in soil

The product: No data available

12.5. Results of PBT and vPvB assessment

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

12.6. Other adverse effects

The product: No data available

Further information

Do not release undiluted or in higher quantities into the groundwater, sewerage or waters.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to local regulations. Should not be disposed of with household waste.

List of Wastes Code - residues/unused products

160508 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded organic chemicals consisting of or containing hazardous substances; hazardous waste

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List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Waste disposal according to local regulations. 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. (3,6-diazaoctanethylenediamin; triethylenetetramine; 3-aminomethyl-3,5,5-trimethylcyclohexylamine; M-phenylenebis(methylamine))

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

Tunnel restriction code:

E

Inland waterways transport (ADN)

14.1. UN number:

UN 2735

14.2. UN proper shipping name:

AMINES, LIQUID, CORROSIVE, N.O.S. (3,6-diazaoctanethylenediamin; triethylenetetramine; 3-aminomethyl-3,5,5-trimethylcyclohexylamine; M-phenylenebis(methylamine))

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

Marine transport (IMDG)

14.1. UN number:

UN 2735

14.2. UN proper shipping name:

AMINES, LIQUID, CORROSIVE, N.O.S. (3,6-diazaoctanethylenediamin; triethylenetetramine; 3-aminoethyl-3,5,5-trimethylcyclohexylamine; M-phenylenebis(methylamine))

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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:

AMINES, LIQUID, CORROSIVE, N.O.S. (3,6-diazaoctanethylenediamin; triethylenetetramine; 3-aminoethyl-3,5,5-trimethylcyclohexylamine; M-phenylenebis(methylamine))

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: no

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

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

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3: 3,6-diazaoctanethylenediamin; triethylenetetramine

2004/42/EC (VOC):

15,0%

Information according to 2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Water hazard class (D):

2 - obviously hazardous to water

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15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes

Changes in chapter: 2, 3, 4, 9, 10

Abbreviations and acronyms

ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route
(Agreement concerning the international carriage of Dangerous goods by Road)

IMDG-Code: International Maritime Code for Dangerous Goods

ICAO: International Civil Aviation Organisation (IATA: The International Air Transport Association)

GHS: Globally Harmonized System of Classification, Labelling and Packaging of Chemicals

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

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
Repr. 2; H361d	Calculation method
Aquatic Chronic 3; H412	Calculation method

Relevant H and EUH statements (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.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361d	Suspected of damaging the unborn child.
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.)