



## Safety Data Sheet according to Regulation (EC) 'No. 2015/830

### SECTION 1: Identification of the Substance/Mixture and the Company/Undertaking

<b>1.1 Product Identifier</b>	M BOND/FLOWBOND ESB HARD. B	<b>Revision Date:</b>	14/06/2021
<b>Product Name:</b>	M Bond/Flowbond ESB Hardener B	<b>Supersedes Date:</b>	20/09/2018
<b>UFI Code:</b>	R832-K0WQ-Q00S-JG3H		
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against</b>	Coatings and paints, thinners, paint removers. Manual activities involving hand contact. Widespread use leading to inclusion into/onto article (indoor). For use by appropriately trained applicators. Roller application or brushing. Low energy spreading of coatings. Advised against: Home DIY applications, because of the health hazards and training required.		
<b>1.3 Details of the supplier of the safety data sheet</b>	<p><b>Manufacturer:</b> Flowcrete Polska Sp. z o. o. Ul. Marywilska 34 03-228 Warszawa Polska</p> <p>Tel: +48 22 879 8907 Fax: +48 22 879 8918 ehs.uk@flowcrete.com www.flowcrete.com.pl/</p> <p><b>Datasheet Produced by:</b> ehs.uk@flowcrete.com</p>		
<b>1.4 Emergency telephone number:</b>	CHEMTREC +1 703 5273887 (Outside US)		
	Giftinformasjonen: +47 22 59 13 00		

## SECTION 2: Hazard Identification

### 2.1 Classification of the substance or mixture

Classification according to Classification, Labeling & Packaging Regulation (EC) 1272/2008

#### HAZARD STATEMENTS

Acute Toxicity, Oral, category 4	H302
Skin Corrosion, category 1B	H314-1B
Skin Sensitizer, category 1	H317
Acute Toxicity, Inhalation, category 4	H332
STOT, repeated exposure, category 2	H373
Hazardous to the aquatic environment, Acute, category 1	H400
Hazardous to the aquatic environment, Chronic, category 2	H411

### 2.2 Label elements

#### Symbol(s) of Product



#### Signal Word

Danger

#### Named Chemicals on Label

2,4,6-Tris(dimethylaminomethyl)phenol, Benzyl alcohol, Tetraethylenepentamine, Fatty acids, tall-oil, reaction products with tetraethylenepentamine, Formaldehyde, polymer with benzenamine, hydrogenated

#### HAZARD STATEMENTS

Acute Toxicity, Oral, category 4	H302	Harmful if swallowed.
Skin Corrosion, category 1B	H314-1B	Causes severe skin burns and eye damage.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment, Acute, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, Chronic, category 2	H411	Toxic to aquatic life with long lasting effects.

#### PRECAUTION PHRASES

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+330+331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.

**2.3 Other hazards**

No Information

**Results of PBT and vPvB assessment:**

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

**SECTION 3: Composition/Information On Ingredients****3.2 Mixtures****Hazardous ingredients**

<u>Name According to EEC</u>	<u>EINEC No.</u>	<u>CAS-No.</u>	<u>%</u>	<u>Classifications</u>	
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	273-201-6	68953-36-6	25 - <50	H314-317-400-411	Aquatic Acute 1, Aquatic Chronic 2, Skin Corr. 1C, Skin Sens. 1
Formaldehyde, polymer with benzenamine, hydrogenated	603-894-6	135108-88-2	25 - <50	H302-314-317-373-412	Acute Tox. 4 Oral, Aquatic Chronic 3, Skin Corr. 1C, Skin Sens. 1, STOT RE 2
Benzyl alcohol	202-859-9	100-51-6	10 - <25	H302-332	Acute Tox. 4 Inhalation, Acute Tox. 4 Oral
Tetraethylenepentamine	203-986-2	112-57-2	2.5 - <10	H302-312-314-317-411	Acute Tox. 4 Dermal, Acute Tox. 4 Oral, Aquatic Chronic 2, Skin Corr. 1B, Skin Sens. 1
2,4,6-Tris (dimethylaminomethyl) phenol	202-013-9	90-72-2	2.5 - <10	H315-319	Eye Irrit. 2, Skin Irrit. 2

<u>CAS-No.</u>	<u>M-Factors</u>	<u>REACH Reg No.</u>
68953-36-6		01-2119487006-38
135108-88-2		01-2119983522-33
100-51-6		01-2119492630-38
112-57-2		01-2119487290-37
90-72-2		01-2119560597-27

**Additional Information:** The text for CLP Hazard Statements shown above (if any) is given in Section 16.

## SECTION 4: First-aid Measures

### 4.1 Description of First Aid Measures

**GENERAL NOTES:** When symptoms persist or in all cases of doubt seek medical advice. Show this safety data sheet to the doctor in attendance. Risk of product entering the lungs on vomiting after ingestion. Remove contaminated clothing and shoes.

**AFTER INHALATION:** Keep respiratory tract clear. Remove person to fresh air. If signs/symptoms continue, get medical attention.

**AFTER SKIN CONTACT:** Use a mild soap if available. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

**AFTER EYE CONTACT:** Keep eye wide open while rinsing. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. If eye irritation persists, consult a specialist.

**AFTER INGESTION:** Gently wipe or rinse the inside of the mouth with water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If swallowed, seek medical advice immediately and show this container or label.

#### Self protection of the first aider:

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

No Information

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

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

## SECTION 5: Fire-fighting Measures

### 5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam

**FOR SAFETY REASONS NOT TO BE USED:** Alcohol, Alcohol based solutions, any other media not listed above.

### 5.2 Special hazards arising from the substance or mixture

No Information

### 5.3 Advice for firefighters

Keep containers and surroundings cool with water spray. Fire will produce dense black smoke containing hazardous combustion products (see section 10). In the event of fire, wear self-contained breathing apparatus. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

## SECTION 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains. May cause long-term adverse effects in the aquatic environment.

### 6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Refer to protective measures listed in sections 7 and 8.

## 6.4 Reference to other sections

**FURTHER INSTRUCTIONS:** Please refer to EU disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

## SECTION 7: Handling and Storage

### 7.1 Precautions for safe handling

Wear personal protective equipment. Use only in well-ventilated areas. Do not breathe vapours or spray mist. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately. Keep away from food, drink and animal feedingstuffs. When using, do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

**CONDITIONS TO AVOID:** Avoid temperatures above 40 °C, direct sunlight and contact with sources of heat. Do not freeze. **STORAGE CONDITIONS:** Do not freeze. Store at room temperature in the original container. Keep locked up or in an area accessible only to qualified or authorised persons. Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

### 7.3 Specific end use(s)

Hardener B - Peran SL, Flowshield SL, Flowcoat TL, Flowcoat SF41 + Flowshield Quartz. Component of a resin flooring product. The mixing and application to be in accordance with the technical data sheets.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

#### Ingredients with Occupational Exposure Limits (UK WELS)

<u>Name</u>	<u>CAS-No.</u>	<u>LTEL ppm</u>	<u>STEL ppm</u>	<u>STEL mg/m3</u>	<u>LTEL mg/m3</u>
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	68953-36-6				
Formaldehyde, polymer with benzenamine, hydrogenated	135108-88-2				
Benzyl alcohol	100-51-6				
Tetraethylenepentamine	112-57-2				
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2				

<u>Name</u>	<u>CAS-No.</u>	<u>OEL Note</u>
Fatty acids, tall-oil, reaction products with tetraethylenepentamine	68953-36-6	
Formaldehyde, polymer with benzenamine, hydrogenated	135108-88-2	
Benzyl alcohol	100-51-6	
Tetraethylenepentamine	112-57-2	
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	

**FURTHER ADVICE:** Refer to the regulatory exposure limits for the workforce enforced in each country. Some components may not have been classified under the EU CLP Regulation.

### 8.2 Exposure controls

#### Personal Protection

**RESPIRATORY PROTECTION:** In case of insufficient ventilation wear suitable respiratory equipment. Respirator with filter for organic vapor.

**EYE PROTECTION:** Eye wash bottle with pure water. Tightly fitting safety goggles.

**HAND PROTECTION:** Impervious gloves. Long sleeved clothing. Remove and wash contaminated clothing before re-use.

**OTHER PROTECTIVE EQUIPMENT:** No Information

**ENGINEERING CONTROLS:** As a rule, at least 5 air changes per hour are recommended at the workplace. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

#### Chemical Name:

Benzyl alcohol

#### EC No.:

202-859-9

#### CAS-No.:

100-51-6

#### DNELs - Derived no effect level

Route of Exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required					20 mg/kg bw/d		4 mg/kg bw/d
Inhalation	-	110 mg/m <sup>3</sup>	-	22 mg/m <sup>3</sup>	-	27 mg/m <sup>3</sup>	-	5.4 mg/m <sup>3</sup>
Dermal	-	40 mg/kg bw/d	-	8 mg/kg bw/d	-	20 mg/kg bw/d	-	4 mg/kg bw/d

#### PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	1 mg/l
Fresh water sediments	5.27 mg/kg
Marine water	0.1 mg/l
Marine sediments	0.527 mg/kg
Food chain	
Microorganisms in sewage treatment	39 mg/l
soil (agricultural)	0.456 mg/kg
Air	

#### Chemical Name:

2,4,6-Tris(dimethylaminomethyl)phenol

#### EC No.:

202-013-9

#### CAS-No.:

90-72-2

#### DNELs - Derived no effect level

Route of Exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required							
Inhalation				0.31 mg/m <sup>3</sup>				
Dermal								

#### PNEC's - Predicted no effect concentration

Environmental protection target	PNEC
Fresh water	0.084 mg/l
Fresh water sediments	
Marine water	0.0084 mg/l
Marine sediments	
Food chain	
Microorganisms in sewage treatment	0.2 mg/l
soil (agricultural)	
Air	

## SECTION 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance:

Amber

<b>Physical State</b>	Liquid
<b>Odor</b>	Amine like
<b>Odor threshold</b>	Not determined
<b>pH</b>	Alkaline
<b>Melting point / freezing point (°C)</b>	Not determined
<b>Boiling point/range (°C)</b>	205 - N.D.
<b>Flash Point, (°C)</b>	>120
<b>Evaporation rate</b>	Not determined
<b>Flammability (solid, gas)</b>	Not determined
<b>Upper/lower flammability or explosive limits</b>	999 - 999
<b>Vapour Pressure</b>	Not determined
<b>Vapour density</b>	Not determined
<b>Relative density</b>	ca. 0.95
<b>Solubility in / Miscibility with water</b>	Slight
<b>Partition coefficient: n-octanol/water</b>	Not determined
<b>Auto-ignition temperature (°C)</b>	Not determined
<b>Decomposition temperature (°C)</b>	Not determined
<b>Viscosity</b>	Not determined
<b>Explosive properties</b>	Not determined
<b>Oxidising properties</b>	Not determined

## 9.2 Other information

<b>VOC Content g/l:</b>	<80
<b>Specific Gravity (g/cm<sup>3</sup>)</b>	0.120

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

### 10.2 Chemical stability

No decomposition if stored and applied as directed. Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

### 10.4 Conditions to avoid

Avoid temperatures above 40 °C, direct sunlight and contact with sources of heat. Do not freeze.

### 10.5 Incompatible materials

Acids. Strong oxidizing agents.

### 10.6 Hazardous decomposition products

In case of fire **hazardous decomposition products** may be produced such as: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## SECTION 11: Toxicological Information

**11.1 Information on toxicological effects****Acute Toxicity:**

**Oral LD50:** No Information  
**Inhalation LC50:** No Information

**Irritation:** Irritating to eyes and skin. Vapour/spray mist may irritate respiratory system and lungs.

**Corrosivity:** No information available.

**Sensitization:** Prolonged or repeated skin contact may result in allergic eczema.

**Repeated dose toxicity:** No information available.

**Carcinogenicity:** No information available.

**Mutagenicity:** No information available.

**Toxicity for reproduction:** No information available.

**STOT-single exposure:** No information available.

**STOT-repeated exposure:** No information available.

**Aspiration hazard:** No information available.

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

<u>CAS-No.</u>	<u>Name According to EEC</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Vapor LC50</u>	<u>Gas LC50</u>	<u>Dust/Mist LC50</u>
68953-36-6	Fatty acids, tall-oil, reaction products with tetraethylenepentamine	4750 mg/kg oral, rat			0.000	0.000
135108-88-2	Formaldehyde, polymer with benzenamine, hydrogenated	367 mg/kg, oral, rat	>2000			
100-51-6	Benzyl alcohol	1620 mg/kg (rat)	2001 mg/kg (rabbit)	>20 (N/A)	>20000 (N/A)	>4 mg/l (4 h, rat)
90-72-2	2,4,6-Tris (dimethylaminomethyl)phenol	2169 mg/kg (rat)				

**Additional Information:**

In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. Corrosive - causes irreversible eye damage.

**SECTION 12: Ecological Information****12.1 Toxicity:**

**EC50 48hr (Daphnia):** No information  
**IC50 72hr (Algae):** No information  
**LC50 96hr (fish):** No information

**12.2 Persistence and degradability:** No information



- 12.3 Bioaccumulative potential:** No information
- 12.4 Mobility in soil:** No information
- 12.5 Results of PBT and vPvB assessment:** The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.
- 12.6 Other adverse effects:** No information

<u>CAS-No.</u>	<u>Name According to EEC</u>	<u>EC50 48hr</u>	<u>IC50 72hr</u>	<u>LC50 96hr</u>
68953-36-6	Fatty acids, tall-oil, reaction products with tetraethylenepentamine	No information	No information	
135108-88-2	Formaldehyde, polymer with benzenamine, hydrogenated	No information	No information	
100-51-6	Benzyl alcohol	230 mg/l	770 mg/l (Pseudokirchneriella)	460 mg/l (Pimephales promelas)
112-57-2	Tetraethylenepentamine	No information	No information	
90-72-2	2,4,6-Tris(dimethylaminomethyl)phenol	No information	No information	

### SECTION 13: Disposal Considerations

- 13.1 WASTE TREATMENT METHODS:** Dispose of as hazardous waste in compliance with local and national regulations. Container hazardous when empty. Empty containers should be taken to an approved waste handling site for recycling or disposal. The product should not be allowed to enter drains, water courses or the soil.

**European Waste Code:** 08 01 11\*  
**Packaging Waste Code:** 150110

### SECTION 14: Transport Information

- 14.1 UN number** UN2735
- 14.2 UN proper shipping name** Amines, liquid, corrosive, N.O.S.  
**Technical name** (Cycloaliphatic amine, Tetraethylenepentamine)
- 14.3 Transport hazard class(es)** 8  
**Subsidiary shipping hazard** Not applicable
- 14.4 Packing group** III
- 14.5 Environmental hazards** Marine Pollutant
- 14.6 Special precautions for user** Not applicable  
**EmS-No.:** Not applicable
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code** Not applicable

### SECTION 15: Regulatory Information

- 15.1 Safety, health and environmental regulations/legislation for the substance or mixture:**

**National Regulations:**

**Denmark Product Registration Number:** Not available

**Danish MAL Code:** 00-5 (1993)

**Danish MAL Code - Mixture:** Not available

<b>Sweden Product Registration Number:</b>	Not available
<b>Norway Product Registration Number:</b>	100799
<b>Germany WGK Class:</b>	2
<b>Directive 2004/42/CE :</b>	<80
<b>Covered by Directive 2012/18/EC (Seveso III):</b>	Not applicable
<b>Restrictions to product or to substances according to Annex XVII, Regulation (CE) 1907/2006:</b>	Not applicable

**Annex XIV - Authorisation List:**

<u>CAS-No.</u>	<u>Name According to EEC</u>
----------------	------------------------------

Not Applicable

**SVHC - Substances of very high concern (Candidate List):**

<u>CAS-No.</u>	<u>Name According to EEC</u>
----------------	------------------------------

Not Applicable

**15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**SECTION 16: Other Information****Text for CLP Hazard Statements shown in Section 3 describing each ingredient:**

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

**Reasons for revision**

Composition Information Changed

Substance and/or Product Properties Changed in Section(s):

01 - Identification

02 - Hazard Identification

08 - Exposure Controls/Personal Protection

15 - Regulatory Information

Substance Hazard Threshold % Changed

Substance Regulatory CAS Number Changed

Revision Statement(s) Changed

This Safety Data Sheet (SDS) has been revised to meet the new EU CLP requirements. There have been both formatting and content changes based on the CLP classification (if applicable), please

review each section of the SDS for specific changes.

List of References:

This Safety Data Sheet was compiled with data and information from the following sources:

The Ariel Regulatory Database provided by the 3E Corporation in Copenhagen, Denmark;  
European Union Commission Regulation No. 1907/2006 on REACH as amended within Commission Regulation (EU) 2015/830;  
European Union (EC) Regulation No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) and subsequent technical progress adaptations (ATP);  
EU Council Decision 2000/532/EC and its Annex entitled "List of Wastes".

Acronym & Abbreviation Key:

CLP	Classification, Labeling & Packaging Regulation
EC	European Commission
EU	European Union
US	United States
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Chemical Substances
REACH	Registration, Evaluation, Authorization of Chemicals Regulation
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
LTEL	Long term exposure limit
STEL	Short term exposure limit
OEL	Occupational exposure limit
ppm	Parts per million
mg/m <sup>3</sup>	Milligrams per cubic meter
TLV	Threshold Limit Value
ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety & Health Administration
PEL	Permissible Exposure Limits
VOC	Volatile organic compounds
g/l	Grams per liter
mg/kg	Milligrams per kilogram
N/A	Not applicable
LD50	Lethal dose at 50%
LC50	Lethal concentration at 50%
EC50	Half maximal effective concentration
IC50	Half maximal inhibitory concentration
PBT	Persistent bioaccumulative toxic chemical
vPvB	Very persistent and very bioaccumulative
EEC	European Economic Community
ADR	International Transport of Dangerous Goods by Road
RID	International Transport of Dangerous Goods by Rail
UN	United Nations
IMDG	International Maritime Dangerous Goods Code
IATA	International Air Transport Association
MARPOL	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978
IBC	International Bulk Container
RTI	Respiratory Tract Irritation
NE	Narcotic Effects

For further information, please contact: Technical Services Department

The information on this sheet corresponds to our present knowledge. It is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of

the product. It is not applicable to unusual or non-standard uses of the product or where instructions and recommendations are not followed.