

## 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>	FLOWBOND ESB NATURAL BASE A	<b>Revision Date:</b>	02/09/2021
<b>Product Name:</b>	Flowbond ESB Natural Base A	<b>Supersedes Date:</b>	20/09/2018
<b>UFI Code:</b>	EX52-90A1-7004-225H		
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against</b>	Component of multicomponent coatings - Professional use only. Coatings and paints, thinners, paint removers. Manual activities involving hand contact. Widespread use leading to inclusion into/onto article (indoor). Widespread use leading to inclusion into/onto article (outdoor). For use by appropriately trained applicators. Roller application or brushing. Advised against: Home DIY applications. Advised against: Spray application, because of the additional hazards.		
<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)		
	Giftinformatjonen: +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**

Other EU extensions	EUH205
Skin Irritation, category 2	H315
Skin Sensitizer, category 1	H317
Eye Irritation, category 2	H319
Hazardous to the aquatic environment, Chronic, category 2	H411

**2.2 Label elements****Symbol(s) of Product****Signal Word**

Warning

**Named Chemicals on Label**

Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol, Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq 700$ ), Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

**HAZARD STATEMENTS**

Other EU extensions	EUH205	Contains epoxy constituents. May produce an allergic reaction.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Hazardous to the aquatic environment, Chronic, category 2	H411	Toxic to aquatic life with long lasting effects.

**PRECAUTION PHRASES**

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
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.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

**2.3 Other hazards**

Ingestion may cause irritation to mucous membranes.

**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>	
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq 700$ )	500-033-5	25068-38-6	50 - <75	H315-317-319-411	Aquatic Chronic 2, Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	271-846-8	68609-97-2	2.5 - <10	H315-317	Skin Irrit. 2, Skin Sens. 1
Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol	500-006-8	9003-36-5	2.5 - <10	H315-317-411	Aquatic Chronic 2, Skin Irrit. 2, Skin Sens. 1
p-Menth-1-en-8-ol		98-55-5	0.1 - <1.0	H315-319	Eye Irrit. 2, Skin Irrit. 2
2,6,6-trimethylbicyclo[3.1.1]hept-2-ene		80-56-8	<0.1	H226-304-315-317-319-400-410	Aquatic Acute 1, Aquatic Chronic 1, Asp. Tox. 1, Eye Irrit. 2, Flam. Liq. 3, Skin Irrit. 2, Skin Sens. 1
2,2-dimethyl-3-methylenebicyclo[2.2.1]heptane		79-92-5	<0.1	H319-410	Aquatic Chronic 1, Eye Irrit. 2

<u>CAS-No.</u>	<u>M-Factors</u>	<u>REACH Reg No.</u>
25068-38-6		01-2119456619-26
68609-97-2		01-2119485289-22
9003-36-5		01-2119454392-40
98-55-5		
80-56-8		01-2119519223-49
79-92-5		01-2119446293-40

**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.

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

**AFTER SKIN CONTACT:** Use a mild soap if available. Do not use solvent or thinners to clean skin. 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:** 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:** Consult a physician. Gently wipe or rinse the inside of the mouth with water. Give small amounts of water to drink. Never give anything by mouth to an unconscious person. If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.

#### 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

May cause sensitization by skin contact. Irritating to eyes and skin.

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

Treat symptomatically. 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, Water Fog

**FOR SAFETY REASONS NOT TO BE USED:** Do not use a solid water stream as it may scatter and spread fire. Alcohol, Alcohol based solutions, any other media not listed above.

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

In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

#### 5.3 Advice for firefighters

Keep containers and surroundings cool with water spray. In the event of fire, wear self-contained breathing apparatus. Do not use a solid water stream as it may scatter and spread fire. Hazardous decomposition products formed under fire conditions. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### SECTION 6: Accidental Release Measures

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

Avoid contact with skin, eyes and clothing. For personal protection see section 8.2. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

#### 6.2 Environmental precautions

Discharge into the environment must be avoided. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. 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).

#### 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. Refer to protective measures listed in sections 7 and 8.

### SECTION 7: Handling and Storage

#### 7.1 Precautions for safe handling

People handling epoxy products must have received special training according to guidelines from the National Occupational Health and Safety Board. Wear personal protective equipment. Avoid contact with skin and eyes. Apply technical measures to comply with the occupational exposure limits (see section 8).

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. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

#### 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:** Keep out of the reach of children. Keep at temperatures between 10 and 25 °C. Store in original container. Keep container tightly closed in a dry and well-ventilated place. Keep away from food, drink and animal feeding stuffs.

#### 7.3 Specific end use(s)

Component of multicomponent coatings. 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>
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	25068-38-6				
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	68609-97-2				
Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol	9003-36-5				
p-Menth-1-en-8-ol	98-55-5				
2,6,6-trimethylbicyclo[3.1.1]hept-2-ene	80-56-8				
2,2-dimethyl-3-methylenebicyclo[2.2.1]heptane	79-92-5				

<u>Name</u>	<u>CAS-No.</u>	<u>OEL Note</u>
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	25068-38-6	
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	68609-97-2	
Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	
p-Menth-1-en-8-ol	98-55-5	
2,6,6-trimethylbicyclo[3.1.1]hept-2-ene	80-56-8	
2,2-dimethyl-3-methylenebicyclo[2.2.1]heptane	79-92-5	

**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:** No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment, filter A.

**EYE PROTECTION:** Eye wash bottle with pure water. Safety glasses with side-shields conforming to EN 166.

**HAND PROTECTION:** Protective gloves complying with EN 374: Nitrile rubber. Butyl rubber. PVA. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature). Long sleeved clothing. Remove and wash contaminated clothing before re-use.

**OTHER PROTECTIVE EQUIPMENT:** Ensure that eyewash stations and safety showers are close to the workstation location.

**ENGINEERING CONTROLS:** Ensure adequate ventilation, especially in confined areas.

**Chemical Name:**Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700)**EC No.:**

500-033-5

**CAS-No.:**

25068-38-6

**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					0.75 mg/kg		0.75 mg/kg
Inhalation		12.25 mg/m <sup>3</sup>		12.25 mg/m <sup>3</sup>				
Dermal		8.33 mg/kg		8.33 mg/kg		3.571 mg/kg		3.571 mg/kg

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

Environmental protection target	PNEC
Fresh water	0.006 mg/l
Fresh water sediments	0.996 mg/kg
Marine water	0.0006 mg/l
Marine sediments	0.0996 mg/kg
Food chain	
Microorganisms in sewage treatment soil (agricultural)	10 mg/l
Air	0.196 mg/kg

**Chemical Name:**

Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.

**EC No.:**

271-846-8

**CAS-No.:**

68609-97-2

**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					1219 mg/kg bw/d		1 mg/kg bw/d
Inhalation	9.8 mg/m <sup>3</sup>	29 mg/m <sup>3</sup>	0.98 mg/m <sup>3</sup>	13.8 mg/m <sup>3</sup>	2.9 mg/m <sup>3</sup>	7.6 mg/m <sup>3</sup>	1.46 mg/m <sup>3</sup>	4.1 mg/m <sup>3</sup>
Dermal	68 mg/cm <sup>2</sup>	17 mg/kg bw/d	1.7 mg/cm <sup>2</sup>	3.9 mg/kg bw/d	40 mg/cm <sup>2</sup>	10 mg/kg bw/d	1 mg/cm <sup>2</sup>	2.35 mg/kg bw/d

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

Environmental protection target	PNEC
Fresh water	0.0072 mg/l
Fresh water sediments	66.77 mg/kg
Marine water	0.00072 mg/l
Marine sediments	6.677 mg/kg
Food chain	
Microorganisms in sewage treatment soil (agricultural)	10 mg/l
Air	80.12 mg/kg

**Chemical Name:**

Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol

**EC No.:**

500-006-8

**CAS-No.:**

9003-36-5

**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							6.25 mg/kg bw/d
Inhalation				29.39 mg/m <sup>3</sup>				8.7 mg/m <sup>3</sup>
Dermal				104.15 mg/kg bw/d				62.5 mg/kg bw/d

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

Environmental protection target	PNEC
Fresh water	0.003 mg/l
Fresh water sediments	0.294 mg/kg
Marine water	0.0003 mg/l
Marine sediments	0.0294 mg/kg
Food chain	
Microorganisms in sewage treatment soil (agricultural)	10 mg/l
Air	0.237 mg/kg

**SECTION 9: Physical and Chemical Properties****9.1 Information on basic physical and chemical properties**

<b>Appearance:</b>	White
<b>Physical State</b>	Liquid
<b>Odor</b>	Slight
<b>Odor threshold</b>	Not determined
<b>pH</b>	Not determined
<b>Melting point / freezing point (°C)</b>	Not determined
<b>Boiling point/range (°C)</b>	136 - N.D.
<b>Flash Point, (°C)</b>	>100
<b>Evaporation rate</b>	Not determined
<b>Flammability (solid, gas)</b>	Not determined
<b>Upper/lower flammability or explosive limits</b>	0.7 - 10.8
<b>Vapour Pressure</b>	Not determined
<b>Vapour density</b>	Not determined
<b>Relative density</b>	ca. 1.4 g/cm <sup>3</sup> .
<b>Solubility in / Miscibility with water</b>	080111
<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 Explosive
<b>Oxidising properties</b>	Not determined

**9.2 Other information**

VOC Content g/l: &lt;100

Specific Gravity (g/cm3) 0.120

**SECTION 10: Stability and Reactivity****10.1 Reactivity**

No reactivity hazards known under recommended storage and use conditions.

**10.2 Chemical stability**

No decomposition if stored and applied as directed.

**10.3 Possibility of hazardous reactions**

Amines cause exothermic reactions.

**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**

Oxidizing agents. Acids and bases.

**10.6 Hazardous decomposition products**In case of fire **hazardous decomposition products** may be produced such as: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). No decomposition if stored and applied as directed.**SECTION 11: Toxicological Information****11.1 Information on toxicological effects****Acute Toxicity:**

Oral LD50: No Information

Inhalation LC50: No Information

**Irritation:** No information available.**Corrosivity:** No information available.**Sensitization:** No information available.**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>
25068-38-6	Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	>5000 mg/kg (rat)	2001 mg/kg (rat) OECD 402	>20 mg/l	0.000	>5 mg/l



68609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	26800 mg/kg (rat)	0.000	0.000
9003-36-5	Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol	>5000 mg/kg (rat) OECD 401	>2000 mg/kg (rat) OECD 402	0.000

**Additional Information:**

In the case of sensitisation to any of the ingredients, it is inadvisable to work with the product. Ingestion may cause irritation to mucous membranes. Irritating to eyes and skin. May cause allergic skin reaction.

## SECTION 12: Ecological Information

**12.1 Toxicity:**

<b>EC50 48hr (Daphnia):</b>	No information
<b>IC50 72hr (Algae):</b>	No information
<b>LC50 96hr (fish):</b>	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>
25068-38-6	Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	1.7 mg/l OECD 202	13.81 mg/l (Pseudokirchneriella subcapitata) OECD 201	1.5 mg/l (Oncorhynchus mykiss) OECD 203
68609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	7.2 mg/l OECD 202	843.75 mg/l (Pseudokirchnerella subcapitata) OECD 201	>5000 mg/l (Oncorhynchus mykiss) OECD 203
9003-36-5	Formaldehyde, oligomeric reaction product with 1-chloro-2,3-epoxypropane and phenol	1.6 mg/l	1.8 mg/l (Pseudokirchnerella subcapitata) OECD 201	0.55 mg/l
98-55-5	p-Menth-1-en-8-ol	No information	No information	No information
80-56-8	2,6,6-trimethylbicyclo[3.1.1]hept-2-ene	No information	No information	No information
79-92-5	2,2-dimethyl-3-methylenebicyclo[2.2.1]heptane	No information	No information	No information

## SECTION 13: Disposal Considerations

**13.1 WASTE TREATMENT METHODS:** Dispose of waste material at an approved hazardous waste treatment/disposal facility in accordance with applicable local state, and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems. Contaminated packaging to be disposed of as product. Fully drained containers which are drop- and scrape-free can be treated as industrial waste, and can possibly be recycled. 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:** No Information  
**Packaging Waste Code:** 150110

**SECTION 14: Transport Information**

14.1	UN number	UN3082
14.2	UN proper shipping name	Environmentally hazardous substance, liquid, N.O.S.
	Technical name	(Epoxy Resin MW<700)
14.3	Transport hazard class(es)	9
	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
Sweden Product Registration Number:	Not available
Norway Product Registration Number:	314418
Germany WGK Class:	Not available
Directive 2004/42/CE :	<100
Covered by Directive 2012/18/EC (Seveso III):	Not applicable
Restrictions to product or to substances according to Annex XVII, Regulation (CE) 1907/2006:	Not applicable

**Annex XIV - Authorisation List:**

<u>CAS-No.</u>	<u>Name According to EEC</u>
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Not Applicable

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

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

H226	Flammable liquid and vapour.
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.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

**Reasons for revision**

Substance Hazard Threshold % Changed  
 Substance and/or Product Properties Changed in Section(s):  
 01 - Identification  
 02 - Hazard Identification  
 03 - Composition/Information On Ingredients  
 08 - Exposure Controls/Personal Protection  
 11 - Toxicological Information  
 12 - Ecological Information  
 15 - Regulatory Information  
 Substance Hazardous Flag Changed  
 Substance CAS Number Changed  
 Revision Statement(s) Changed

**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.