

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

### 1.1. Product identifier

Product name Epoxy Resin ER2188, Part A Unique Formula Identifier UFI: 40X1-404Y-X00T-F701

Pure substance/mixture Mixture

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

Recommended use Resin

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Premier Farnell plc

150 Armley Road

Leeds LS12 2QQ

+44 (0) 870 129 8608

1.4. Emergency telephone number

Emergency telephone +44 (0) 8701 202530

### **SECTION 2: Hazards identification**

### 2.1 Classification of the substance or mixture

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

Skin corrosion/irritation

Serious eye damage/eye irritation

Skin sensitisation

Category 2 - (H315)

Category 2 - (H319)

Category 1 - (H317)

Chronic aquatic toxicity

Category 3 - (H412)

### 2.2 Label elements

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



Signal word Danger

Hazard statements H315 - Causes skin irritation

H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation

H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008) P261 - Avoid breathing vapours/spray.

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 soap and 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. P501 - Dispose of contents/container in accordance with local, regional,

national, and international regulations as applicable.





### 2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**Endocrine Disruptor Information** 

This product does not contain any known or suspected endocrine disruptors.

## **SECTION 3: Composition/information on ingredients**

### 3.1 Substances

Not applicable

#### 3.2 Mixtures

Chemical name	Weight %	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long- term)
Reaction product: bisphenol-A-(epichlo rhydrin) epoxy resin (number average molecular weight ≤ 700) 25068-38-6	10-30	01- 2119456619- 26-0000	500-033-5	Aquatic Chronic 2 (H411) Skin Sens. 1 (H317) Eye Irrit. 2 (H319) Skin Irrit. 2 (H315)	Eye Irrit. 2 :: C>=5% Skin Irrit. 2 :: C>=5%	-	-
Kaolin 1332-58-7	1-5	No data available	310-194-1	-	-	-	-
2,3-epoxypropyl neodecanoate 26761-45-5	1-5	01- 2119431597- 33-0000	247-979-2	Aquatic Chronic 2 (H411) Skin Sens. 1 (H317)	-	-	-
Amorphous Silica 7631-86-9	0.1-1	17- 2119421532- 51-0000	231-545-4	-	-	-	-
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxyp ropane and phenol 9003-36-5	0.1-1	01- 2119454392- 40-0000	500-006-8	Aquatic Chronic 2 (H411) Skin Sens. 1 (H317) Skin Irrit. 2 (H315)	-	-	-
oxirane, mono[(C12-14-alkyl oxy)methyl] derivs. 68609-97-2	0.1-1	01- 2119485289- 22-0000	271-846-8	Skin Sens. 1 (H317) Skin Irrit. 2 (H315)	-	-	-

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

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components





Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Reaction product: bisphenol-A- (epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) 25068-38-6	11400	No data available	No data available	No data available	No data available
Kaolin 1332-58-7	5000	5000	No data available	No data available	No data available
2,3-epoxypropyl neodecanoate 26761-45-5	10000	4000	No data available	No data available	No data available
Amorphous Silica 7631-86-9	7900	5000	58.8	No data available	No data available
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropa ne and phenol 9003-36-5	2000	No data available	No data available	No data available	No data available
oxirane, mono[(C12-14-alkyloxy) methyl] derivs. 68609-97-2	17100	3987	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

### **SECTION 4: First aid measures**

### 4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur. Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least

15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get

medical attention if irritation develops and persists.

Skin contact May cause an allergic skin reaction. In the case of skin irritation or allergic

reactions see a doctor. Wash off immediately with soap and plenty of water

for at least 15 minutes.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Do

NOT induce vomiting. Call a doctor.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing

(see section 8).

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

Symptoms Itching. Rashes. Hives. May cause redness and tearing of the eyes.

Burning sensation.

Effects of Exposure No information available.





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

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

## **SECTION 5: Firefighting measures**

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances

and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.

5.3. Advice for firefighters

Special protective equipment and

precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full fire-

fighting turnout gear. Use personal protection equipment.

### **SECTION 6: Accidental release measures**

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

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use

personal protective equipment as required. Evacuate personnel to safe

areas. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental

regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

## **SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing

and wash it before reuse.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke

when using this product. Avoid contact with skin, eyes or clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Storage class (TRGS 510) LGK 10.





### 7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Safety Data Sheet.

## **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

**Exposure Limits** 

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Aluminium Hydroxide 21645-51-2	-	TWA: 5 mg/m <sup>3</sup> STEL 10 mg/m <sup>3</sup>	-	TWA: 10.0 mg/m <sup>3</sup> TWA: 1.5 mg/m <sup>3</sup>	-
Reaction product: bisphenol-A- (epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) 25068-38-6	-	-	-	TWA: 1.0 mg/m <sup>3</sup>	-
Kaolin 1332-58-7	-	-	TWA: 2 mg/m <sup>3</sup>	TWA: 3.0 mg/m <sup>3</sup> TWA: 6.0 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Amorphous Silica 7631-86-9	TWA: 0.1 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	TWA: 1.0 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	TWA: 1.2 mg/m <sup>3</sup>
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Aluminium Hydroxide 21645-51-2	-	TWA: 10 mg/m <sup>3</sup>	-	-	-
Kaolin 1332-58-7	-	-	TWA: 2 mg/m <sup>3</sup> STEL: 4 mg/m <sup>3</sup>	-	TWA: 2 mg/m <sup>3</sup>
1,2-Benzenedicar- boxylic acid, di-C9- 11-branched alkyl esters, C10-rich 68515-49-1	-	-	TWA: 3 mg/m³ STEL: 6 mg/m³ esters, not specified elsewhere in the list	TWA: 3 mg/m³ STEL: 5 mg/m³	-
Amorphous Silica 7631-86-9	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> TWA: 4.0 mg/m <sup>3</sup>	TWA: 1.5 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> uncalcinated with no content of Quartz	TWA: 2 mg/m³	TWA: 5 mg/m3
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Aluminium Hydroxide 21645-51-2	-	TWA: 1.25 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup> TWA: 1.5 mg/m <sup>3</sup>	-	-
Kaolin 1332-58-7	TWA: 10 mg/m <sup>3</sup>	-	-	-	-
Amorphous Silica 7631-86-9	-	TWA: 4 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> Peak: 0.16 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Aluminium Hydroxide 21645-51-2	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup> STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup>	-	TWA: 1 mg/m³	TWA: 6 mg/m³	TWA: 6 mg/m <sup>3</sup>





Kaolin 1332-58-7	TWA: 2 mg/m <sup>3</sup>	-	TWA: 2 mg/m <sup>3</sup>	-	-
1,2-Benzenedicar- boxylic acid, di-C9-11- branched alkyl esters, C10-rich 68515-49-1	-	-	-	-	STEL: 5 mg/m³ TWA: 3 mg/m³
Amorphous Silica 7631-86-9	TWA: 6 mg/m <sup>3</sup> TWA: 2.4 mg/m <sup>3</sup> STEL: 18 mg/m <sup>3</sup> STEL: 7.2 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	-	TWA: 1 mg/m <sup>3</sup>	-
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Aluminium Hydroxide 21645-51-2	-	-	-	-	TWA: 2.5 mg/m <sup>3</sup> TWA: 1.2 mg/m <sup>3</sup>
Kaolin 1332-58-7					TWA: 10.0 mg/m <sup>3</sup>
Amorphous Silica 7631-86-9	-	-	TWA: 0.075 mg/m <sup>3</sup>	TWA: 1.5 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Aluminium Hydroxide 21645-51-2	TWA: 1 mg/m <sup>3</sup>	-	TWA: 1.5 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	-	TWA: 1 mg/m <sup>3</sup>
Kaolin 1332-58-7	TWA: 2 mg/m <sup>3</sup>	-	TWA: 10 mg/m <sup>3</sup>	-	TWA: 2 mg/m <sup>3</sup>
Amorphous Silica 7631-86-9	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	-	-	TWA: 4 mg/m3	-

Chemical name	Sweden	Switzerland	United Kingdom
Aluminium Hydroxide 21645-51-2	-	TWA: 3 mg/m³ TWA: 10 mg/m³	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup> STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup>
Kaolin 1332-58-7	-	TWA: 3 mg/m³	TWA: 2 mg/m3 STEL: 6 mg/m3
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich 68515-49-1	NGV: 3 mg/m <sup>3</sup>	-	-
Amorphous Silica 7631-86-9	-	TWA: 4 mg/m <sup>3</sup>	TWA: 6 mg/m³ TWA: 2.4 mg/m³ STEL: 18 mg/m³ STEL: 7.2 mg/m³

# Biological occupational exposure limits Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Aluminium Hydroxide 21645-51-2	-	-	10.76 mg/m³ [4] [6] 10.76 mg/m³ [5] [6]





Chemical name	Oral	Dermal	Inhalation
2,3-epoxypropyl neodecanoate 26761-45-5	-	4.2 mg/kg bw/day [4] [6]	5.88 mg/m³ [4] [6] 11.76 mg/m³ [4] [7]
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich 68515-49-1	-	41.67 mg/kg bw/day [4] [6]	5.29 mg/m³ [4] [6]
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	-	1 mg/kg bw/day [4] [6]	3.6 mg/m³ [4] [6]

[4] Systemic health effects.[5] Local health effects.

[6] Long term.[7] Short term.

## Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Aluminium Hydroxide 21645-51-2	4.74 mg/kg bw/day [4] [6]	-	-
2,3-epoxypropyl neodecanoate 26761-45-5	-	-	4 mg/m³ [4] [6]
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich 68515-49-1	0.75 mg/kg bw/day [4] [6]	-	1.3 mg/m³ [4] [6]
oxirane, mono[(C12-14-alkyloxy)methyl] derivs. 68609-97-2	0.5 mg/kg bw/day [4] [6]	-	0.87 mg/m³ [4] [6]

[4] Systemic health effects.

[6] Long term.

## **Predicted No Effect Concentration (PNEC)**

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
2,3-epoxypropyl neodecanoate 26761-45-5	0.0012 mg/L	12 μg/L	0.12 μg/L	-	-
oxirane, mono[(C12-14-alkyloxy)me thyl] derivs. 68609-97-2	0.1058 mg/L	0.072 mg/L	0.01058 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
2,3-epoxypropyl	0.0124 mg/kg	0.0015 mg/kg	50 mg/L	-	-
neodecanoate 26761-45-5	sediment dw	sediment dw	-	-	-





Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
oxirane, mono[(C12-14-alky- loxy)me thyl] derivs. 68609-97-2	307.16 mg/kg sediment dw	30.72 mg/kg sediment dw	10 mg/L	1.234 mg/kg soil dw	-

### 8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If expo-

sure limits are exceeded or irritation is experienced, ventilation and evacua-

tion may be required.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke

when using this product. Avoid contact with skin, eyes or clothing.

Environmental exposure controls No information available.

## **SECTION 9: Physical and chemical properties.**

### 9.1. Information on basic physical and chemical properties

Physical state Liquid
Appearance Liquid
Colour black

Odour No information available.

Odour threshold No information available

Property Property Remarks • Method

Melting point / freezing point No data available None known Initial boiling point and boiling rangeNo No data available None known No data available Flammability None known Flammability Limit in Air None known Upper flammability or explosive limits No data available Lower flammability or explosive limits No data available Flash point No data available None known

Autoignition temperature

No data available

None known

Decomposition temperature None known

No data available None known pH (as aqueous solution) No data available None known

Kinematic viscosity

Dynamic viscosity

No data available

None known

150000 mPa s @ 23°C

None known

Water solubility

No data available

None known

Newark.com/multicomp-pro Farnell.com/multicomp-pro sg.element14.com/b/multicomp-pro

рΗ





Solubility(ies)

No data available

None known

Partition coefficient

No data available

None known

Vapour pressure

No data available

None known

Relative density

No data available

None known

Bulk density 1.83 kg/l

Liquid Density No data available

Relative vapour density No data available None known

Particle characteristics

Particle Size No information available
Particle Size Distribution No information available

9.2. Other information

9.2.1. Information with regards to physical hazard classes

Explosive properties Not considered to be explosive.

Oxidising properties Does not meet the criteria for classification as oxidizing.

9.2.2. Other safety characteristics

No information available

## **SECTION 10: Stability and reactivity**

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products

None known based on information supplied.

## **SECTION 11: Toxicological information**

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

**Product Information** 

Inhalation Specific test data for the substance or mixture is not available. May cause

irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes

serious eye irritation. (based on components). May cause redness, itching,

and pain.





Skin contact May cause sensitisation by skin contact. Specific test data for the sub-

stance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components).

Causes skin irritation.

Ingestion Specific test data for the substance or mixture is not available. Ingestion

may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives. Redness. May cause redness and tearing of the

eyes.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

 ATEmix (oral)
 6,088.80 mg/kg

 ATEmix (dermal)
 5,897.20 mg/kg

 ATEmix (inhalation-gas)
 99,999.00 ppm

 ATEmix (inhalation-vapour)
 99,999.00 mg/l

 ATEmix (inhalation-dust/mist)
 99,999.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	= 11400 mg/kg ( Rat )	-	-
Kaolin	> 5000 mg/kg ( Rat )	> 5000 mg/kg ( Rat )	-
2,3-epoxypropyl neodecanoate	> 10 g/kg ( Rat )	> 4000 mg/kg ( Rat )	> 240 mg/m³ ( Rat ) 4 h
Amorphous Silica	= 7900 mg/kg ( Rat )	> 5000 mg/kg ( Rabbit )	> 58.8 mg/L ( Rat ) 4 h
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	> 2 g/kg ( Rat )	-	-
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	= 17100 mg/kg ( Rat )	> 3987 mg/kg ( Rabbit )	-

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye

irritation.

Respiratory or skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties





Endocrine disrupting properties The substance/mixture does not contain components considered to have

endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation

(EU) 2018/605 at levels of 0.1% or higher.

11.2.2. Other information Other adverse effects

No information available.

## **SECTION 12: Ecological information**

### 12.1. Toxicity

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Chemical name	Chemical name Algae/aquatic plants		Toxicity to microorganisms	Crustacea	
2,3-epoxypropyl neodecanoate	EC50: =3.5mg/L (96h, Pseudokirchneriella subcapitata)	LC50: =5mg/L (96h, Oncorhynchus mykiss)	-	EC50: =4.8mg/L (48h, Daphnia magna)	
Amorphous Silica	EC50: =440mg/L (72h, Pseudokirchneriella subcapitata)	LC50: =5000mg/L (96h, Brachydanio rerio)	-	EC50: =7600mg/L (48h, Ceriodaphnia dubia)	

### 12.2. Persistence and degradability

Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

Bioaccumulation

No information available.

Component Information

Chemical name	Partition coefficient
2,3-epoxypropyl neodecanoate	4.4
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	3.77

### 12.4. Mobility in soil

Mobility in soil No information available.

### 12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment	
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)	The substance is not PBT / vPvB	
2,3-epoxypropyl neodecanoate	The substance is not PBT / vPvB	
Amorphous Silica	The substance is not PBT / vPvB	
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	The substance is not PBT / vPvB	
oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	The substance is not PBT / vPvB	

### 12.6. Endocrine disrupting properties

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.





#### 12.7. Other adverse effects

No information available.

## **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in ac-

cordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID numberNot regulated14.2 UN proper shipping nameNot regulated14.3 Transport hazard class(es)Not regulated14.4 Packing groupNot regulated14.5 Environmental hazardsNot applicable

14.6 Special precautions for user

Special Provisions None

**IMDG** 

14.1 UN number or ID numberNot regulated14.2 UN proper shipping nameNot regulated14.3 Transport hazard class(es)Not regulated14.4 Packing groupNot regulated14.5 Environmental hazardsNot applicable

14.6 Special precautions for user

Special Provisions None

14.7 Maritime transport in bulk according

to IMO instruments No information available

RID

14.1 UN number or ID numberNot regulated14.2 UN proper shipping nameNot regulated14.3 Transport hazard class(es)Not regulated14.4 Packing groupNot regulated14.5 Environmental hazardsNot applicable

14.6 Special precautions for user

Special Provisions None

ADR

14.1 UN number or ID numberNot regulated14.2 UN proper shipping nameNot regulated14.3 Transport hazard class(es)Not regulated14.4 Packing groupNot regulated14.5 Environmental hazardsNot applicable

14.6 Special precautions for user

Special Provisions None

multicomp PRO



## **SECTION 15: Regulatory information**

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

#### France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number		
Amorphous Silica - 7631-86-9	RG 25		

### Germany

Water hazard class (WGK) obviously hazardous to water (WGK 2)

### **European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

### Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV	
Reaction product: bisphenol-A- (epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) - 25068-38-6	Use restricted. See item 75.	-	
oxirane, mono[(C12-14-alkyloxy)me- thyl] derivs 68609-97-2	Use restricted. See item 75.	-	

### **Persistent Organic Pollutants**

Not applicable

### Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

### EU - Plant Protection Products (1107/2009/EC)

Chemical name	EU - Plant Protection Products (1107/2009/EC)			
Amorphous Silica - 7631-86-9	Plant protection agent			
Riocidal Products Population (EU) No 528/2012 (RPP)				

### Biocidal Products Regulation (EU) No 528/2012 (BPR)

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)		
Amorphous Silica - 7631-86-9	Product-type 18: Insecticides, acaricides and products to control other arthropods		

#### International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status





NZIoC

Contact supplier for inventory compliance status

### Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AIIC - Australian Inventory of Industrial Chemicals

NZIoC - New Zealand Inventory of Chemicals

#### 15.2. Chemical safety assessment

Chemical Safety Report

No information available

### **SECTION 16: Other information**

### Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

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

#### Legend

SVHC: Substances of Very High Concern for Authorisation:

### Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method





STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

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

### 1.1. Product identifier

Product name Epoxy Resin ER2188, Part B NEW FORMULATION

Unique Formula Identifier UFI: RNKX-M165-100A-RV16

Pure substance/mixture Mixture

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

Recommended use Hardener

Uses advised against No specific uses advised against are identified.

1.3 Details of the supplier of the safety data sheet

Supplier Premier Farnell plc

150 Armley Road

Leeds LS12 2QQ

+44 (0) 870 129 8608

1.4 Emergency telephone number

Emergency telephone +44 (0) 8701 202530

### **SECTION 2: Hazards identification**

## 2.1 Classification of the substance or mixture

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

Acute toxicity - Oral Category 4 - (H302)

Skin corrosion/irritation Category 1 Sub-category B - (H314)

Serious eye damage/eye irritation Category 1 - (H318)
Skin sensitisation Category 1 - (H317)
Chronic aquatic toxicity Category 2 - (H411)

### 2.2 Label elements

Contains 3-aminomethyl-3,5,5-trimethylcyclohexylamine, benzyl alcohol, Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia, m-phenylenebis(methylamine), Formaldehyde, oligomeric reaction products with phenol, 3-cyclohexylaminopropylamine



**Signal word**Danger





Hazard statements H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe vapours/spray.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing and eye/face protection.

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all con-

taminated clothing. Rinse skin with water [or shower].

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 - Dispose of contents/container in accordance with local, regional,

national, and international regulations as applicable.

#### 2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**Endocrine Disruptor Information** 

This product does not contain any known or suspected endocrine disruptors.

## **SECTION 3: Composition/information on ingredients**

#### 3.1 Substances

Chemical name	Weight %	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long- term)
3-aminomethyl-3,5,5 -trimethylcyclohexyl amine 2855-13-2	30-60	01- 2119514687- 32-0000	220-666-8	Aquatic Chronic 3 (H412) Skin Corr. 1B (H314) Skin Sens. 1A (H317) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Eye Dam. 1 (H318)	Skin Sens. 1A :: C>=0.001%	-	-
benzyl alcohol 100-51-6	10-30	01- 2119492630- 38-0000	202-859-9	Acute Tox. 4 (H332) Acute Tox. 4 (H302)	-	-	-
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia 9046-10-0	5-10	No data available	618-561-0	Aquatic Chronic 3 (H412) Skin Corr. 1B (H314) Eye Dam. 1 (H318)	-	-	-
m-phenylenebis(met hylamine) 1477-55-0	5-10	01- 2119480150- 50-0000	216-032-5	Aquatic Chronic 3 (H412) Skin Corr. 1B (H314) Acute Tox. 4 (H332) Acute Tox. 4 (H302) Skin Sens. 1B (H317) Eye Dam. 1 (H318)	-	-	-





Chemical name	Weight %	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long- term)
Formaldehyde, oligomeric reaction products with phenol and m-phenylenebis(met hylamine) 57214-10-5	5-10	No data available	500-137-0	Aquatic Chronic 1 (H410) Aquatic Acute 1 (H400)	-	-	-
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	5-10	No data available	500-005-2	Skin Sens. 1 (H317) Eye Irrit. 2 (H319) STOT SE 3 (H335)	-	-	-
3-cyclohexylaminopr opylamine 3312-60-5	1-5	01- 2120817177- 54-0000	222-001-7	Aquatic Chronic 3 (H412) Skin Corr. 1B (H314) Acute Tox. 3 (H311) Acute Tox. 3 (H301) Eye Dam. 1 (H318)	-	-	-
xylene 1330-20-7	0.1-1	01- 2119488216- 32-0000	215-535-7	Aquatic Chronic 3	-	-	1
Ethylbenzene 100-41-4	<0.1	01- 2119489370- 35-0000	202-849-4	Asp. Tox. 1 (H304) Acute Tox. 4 (H332) STOT RE 2 (H373) Flam. Liq. 2 (H225)	-	-	-
Toluene 108-88-3	<0.1	01- 2119471310- 51-0000	203-625-9	Asp. Tox. 1 (H304) STOT RE 2 (H373) Repr. 2 (H361d) Skin Irrit. 2 (H315) STOT SE 3 (H336) Flam. Liq. 2 (H225)	-	-	-

Full text of H- and EUH-phrases: see section 16 Acute Toxicity Estimate

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
3-aminomethyl-3,5,5-trim ethylcyclohexylamine 2855-13-2	1030 + 1030	2000			





Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
benzyl alcohol 100-51-6	1230	2000	4.178	No data available	No data available
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia 9046-10-0	242	2980	No data available	No data available	No data available
m-phenylenebis(methyla mine) 1477-55-0	660	2000	1.38 1.16	No data available	No data available
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	5000	2000	No data available	No data available	No data available
3-cyclohexylaminopropyl amine 3312-60-5	No data available	632	No data available	No data available	No data available
xylene 1330-20-7	3500	4350	No data available	No data available	No data available
Ethylbenzene 100-41-4	3500	15400	17.4	No data available	No data available
Toluene 108-88-3	2600	12000	12.5	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

### SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get

medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical

attention.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least

15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get im-

mediate medical attention.

Skin contact Wash off immediately with soap and plenty of water while removing all con-

taminated clothes and shoes. Get immediate medical attention. May cause

an allergic skin reaction.





Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an

unconscious person. Get immediate medical attention.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take

precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapours or mists. Use personal protective equipment as required. See section 8 for

more information.

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

Symptoms Burning sensation. Itching. Rashes. Hives. Coughing and/ or wheezing. Dif-

ficulty in breathing.

Effects of Exposure No information available.

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

Note to doctors Product is a corrosive material. Use of gastric lavage or emesis is con-

tra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitisation in suscep-

tible persons. Treat symptomatically.

**SECTION 5: Firefighting measures** 

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances

and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient
Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical The product causes burns of eyes, skin and mucous membranes. Thermal

decomposition can lead to release of irritating gases and vapours. Product

is or contains a sensitiser. May cause sensitisation by skin contact.

5.3. Advice for firefighters

Special protective equipment and

precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full fire-

fighting turnout gear. Use personal protection equipment.

**SECTION 6: Accidental release measures** 

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. En-

sure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of

spill/leak. Avoid breathing vapours or mists.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released

into the environment. Do not allow to enter into soil/subsoil. Prevent product

from entering drains.





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

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental

regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

### **SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

Avoid breathing vapours or mists.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face

protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the work-place. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the

product.

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

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep

out of the reach of children. Protect from moisture. Store locked up. Store

away from other materials.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Safety Data Sheet.

### **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

Exposure Limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory

bodies.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
benzyl alcohol 100-51-6	-	-	-	TWA: 5.0 mg/m <sup>3</sup>	-
m-phenylenebis (methylamine) 1477-55-0	-	TWA: 0.1 mg/m <sup>3</sup> STEL 0.1 mg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup>	STEL: 0.1 mg/m³ D*	-	-
xylene 1330-20-7	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³	TWA: 50 ppm TWA: 221 mg/m <sup>3</sup> STEL 100 ppm STEL 442 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ D*	STEL: 100 ppm STEL: 442 mg/m³ TWA: 50 ppm TWA: 221 mg/m³ K*	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ *







Ethylbenzene 100-41-4	TWA: 100 ppm TWA: 442 mg/m <sup>3</sup> STEL: 200 ppm STEL: 884 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 440 mg/m³ STEL 200 ppm STEL 880 mg/m³ H*	TWA: 20 ppm TWA: 87 mg/m <sup>3</sup> STEL: 125 ppm STEL: 551 mg/m <sup>3</sup> D*	STEL: 545 mg/m <sup>3</sup> TWA: 435 mg/m <sup>3</sup> K*	TWA: 100 ppm TWA: 442 mg/m <sup>3</sup> STEL: 200 ppm STEL: 884 mg/m <sup>3</sup>
Toluene 108-88-3	TWA: 50 ppm TWA: 192 mg/m <sup>3</sup> *	TWA: 50 ppm TWA: 190 mg/m <sup>3</sup> STEL 100 ppm STEL 380 mg/m <sup>3</sup> H*	TWA: 20 ppm TWA: 77 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ D*	STEL: 100 ppm STEL: 384 mg/m³ TWA: 50 ppm TWA: 192 mg/m³ K*	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ *
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
benzyl alcohol 100-51-6	-	TWA: 40 mg/m <sup>3</sup> Ceiling: 80 mg/m <sup>3</sup>	-	-	TWA: 10 ppm TWA: 45 mg/m <sup>3</sup>
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	-	TWA: 5.0 mg/m <sup>3</sup>	-	-	-
m-phenylenebis (methylaine) 1477-55-0	-	-	Ceiling: 0.02 ppm Ceiling: 0.1 mg/m <sup>3</sup> H*	-	Ceiling: 0.1 mg/m³ iho*
xylene 1330-20-7	* STEL: 100 ppm STEL: 442 mg/m³ TWA: 50 ppm TWA: 221 mg/m³	TWA: 200 mg/m³ Ceiling: 400mg/m³ D*	TWA: 25 ppm TWA: 109 mg/m³ H* STEL: 442 mg/m³ STEL: 100 ppm	TWA: 50 ppm TWA: 200 mg/m³ STEL: 100 ppm STEL: 450 mg/m³ A*	TWA: 50 ppm TWA: 220 mg/m³ STEL: 100 ppm STEL: 440 mg/m³ iho*
Ethylbenzene 100-41-4	* STEL: 200 ppm STEL: 884 mg/m <sup>3</sup> TWA: 100 ppm TWA: 442 mg/m <sup>3</sup>	TWA: 200 mg/m³ Ceiling: 500mg/m³ D*	TWA: 50 ppm TWA: 217 mg/m³ H* STEL: 434 mg/m³ STEL: 100 ppm	S+ TWA: 100 ppm TWA: 442 mg/m³ STEL: 200 ppm STEL: 884 mg/m³ A*	TWA: 50 ppm TWA: 220 mg/m³ STEL: 200 ppm STEL: 880 mg/m³ iho*
Toluene 108-88-3	* STEL: 100 ppm STEL: 384 mg/m³ TWA: 50 ppm TWA: 192 mg/m³	TWA: 200 mg/m <sup>3</sup> Ceiling: 500mg/m <sup>3</sup> D*	TWA: 25 ppm TWA: 94 mg/m³ H* STEL: 384 mg/m³ STEL: 100 ppm	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ A*	TWA: 25 ppm TWA: 81 mg/m³ STEL: 100 ppm STEL: 380 mg/m³ iho*
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
3-aminomethyl- 3,5,5-trim ethylcyclohexy- lamine 2855-13-2	-	-	skin sensitizer	-	-
benzyl alcohol 100-51-6	-	TWA: 5 ppm TWA: 22 mg/m <sup>3</sup> H*	TWA: 22 mg/m <sup>3</sup> TWA: 5 ppm Peak: 44 mg/m <sup>3</sup> Peak: 10 ppm *	-	-





Formaldehyde,					
oligomeric reaction products with phenol 9003-35-4	-	TWA: 1.25 mg/m³ TWA: 10 mg/m³ Skin sensitizer	skin sensitizer	-	-
m-phenylenebis (methylamine) 1477-55-0	STEL: 0.1 mg/m3	-	skin sensitizer	-	-
xylene 1330-20-7	TWA: 50 ppm TWA: 221 mg/m <sup>3</sup> STEL: 100 ppm STEL: 442 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 220 mg/m <sup>3</sup> H*	TWA: 50 ppm TWA: 220 mg/m³ Peak: 100 ppm Peak: 440 mg/m³	TWA: 100 ppm TWA: 435 mg/m³ STEL: 150 ppm STEL: 650 mg/m³	TWA: 221 mg/m <sup>3</sup> TWA: 50 ppm STEL: 442 mg/m <sup>3</sup> STEL: 100 ppm b*
Ethylbenzene 100-41-4	TWA: 20 ppm TWA: 88.4 mg/m <sup>3</sup> STEL: 100 ppm STEL: 442 mg/m <sup>3</sup>	TWA: 20 ppm TWA: 88 mg/m <sup>3</sup> H*	TWA: 20 ppm TWA: 88 mg/m³ Peak: 40 ppm Peak: 176 mg/m³	TWA: 100 ppm TWA: 435 mg/m³ STEL: 125 ppm STEL: 545 mg/m³	TWA: 100 ppm TWA: 442 mg/m³ STEL: 200 ppm STEL: 884 mg/m³ b*
Toluene 108-88-3	TWA: 20 ppm TWA: 76.8 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ *	TWA: 50 ppm TWA: 190 mg/m <sup>3</sup> H*	TWA: 50 ppm TWA: 190 mg/m³ Peak: 100 ppm Peak: 380 mg/m³	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ *	TWA: 190 mg/m³ TWA: 50 ppm STEL: 384 mg/m³ STEL: 100 ppm b*
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
J. J	li Gialiu	I Italy Wibel 0	Italy Albii	Latvia	Littidailia
benzyl alcohol 100-51-6	-	-	-	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>
benzyl alcohol	-	- -	-		TWA: 5 mg/m <sup>3</sup>
benzyl alcohol 100-51-6 Formaldehyde, oligomeric reaction products with phenol	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup>	- -	- cute* Ceiling: 0.018 ppm		TWA: 5 mg/m <sup>3</sup> O*
benzyl alcohol 100-51-6 Formaldehyde, oligomeric reaction products with phenol 9003-35-4 m-phenylenebis (methylamine)	- TWA: 0.1 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ cute*	- cute*		TWA: 5 mg/m <sup>3</sup> O*
benzyl alcohol 100-51-6 Formaldehyde, oligomeric reaction products with phenol 9003-35-4 m-phenylenebis (methylamine) 1477-55-0	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³	cute* Ceiling: 0.018 ppm TWA: 100 ppm TWA: 434 mg/m³ STEL: 150 ppm	TWA: 5 mg/m <sup>3</sup> -  TWA: 50 ppm TWA: 221 mg/m <sup>3</sup> STEL: 100 ppm STEL: 442 mg/m <sup>3</sup>	TWA: 5 mg/m³ O*  TWA: 3 mg/m³  -  STEL: 442 mg/m³ STEL: 100 ppm TWA: 221 mg/m³ TWA: 50 ppm





Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
benzyl alcohol 100-51-6	-	-	-	-	TWA: 240 mg/m <sup>3</sup>
m-phenylenebis (methylamine) 1477-55-0	-	-	-	Ceiling: 0.1 mg/m <sup>3</sup>	-
xylene 1330-20-7	STEL: 100 ppm STEL: 442 mg/m³ TWA: 50 ppm TWA: 221 mg/m³ Peau*	STEL: 100 ppm STEL: 442 mg/m³ skin* TWA: 50 ppm TWA: 221 mg/m³	TWA: 47.5 ppm TWA: 210 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ H*	TWA: 25 ppm TWA: 108 mg/m³ STEL: 37.5 ppm STEL: 135 mg/m³ H*	STEL: 200 mg/m³ TWA: 100 mg/m³ skóra*
Ethylbenzene 100-41-4	STEL: 200 ppm STEL: 884 mg/m³ TWA: 100 ppm TWA: 442 mg/m³ Peau*	STEL: 200 ppm STEL: 884 mg/m³ skin* TWA: 100 ppm TWA: 442 mg/m³	TWA: 48.6 ppm TWA: 215 mg/m³ STEL: 97.3 ppm STEL: 430 mg/m³ H*	TWA: 5 ppm TWA: 20 mg/m³ STEL: 10 ppm STEL: 30 mg/m³ H*	STEL: 400 mg/m³ TWA: 200 mg/m³ skóra*
Toluene 108-88-3	STEL: 100 ppm STEL: 384 mg/m³ TWA: 50 ppm TWA: 192 mg/m³ Peau*	STEL: 100 ppm STEL: 384 mg/m <sup>3</sup> skin* TWA: 50 ppm TWA: 192 mg/m <sup>3</sup>	TWA: 39 ppm TWA: 150 mg/m³ STEL: 100 ppm STEL: 384 mg/m³	TWA: 25 ppm TWA: 94 mg/m³ STEL: 37.5 ppm STEL: 141 mg/m³ H*	STEL: 200 mg/m³ TWA: 100 mg/m³ skóra*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
benzyl alcohol 100-51-6	-	-	-	TWA: 22 mg/m <sup>-</sup> TWA: 5 ppm STEL: 10 ppm STEL: 44 mg/m <sup>3</sup> K*	-
m-phenylenebis (methylamine) 1477-55-0	Ceiling: 0.1 mg/m³ Cutânea*	-	-	-	-
xylene 1330-20-7	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ Cutânea*	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ P*	TWA: 50 ppm TWA: 221 mg/m³ K* Ceiling: 442mg/m³	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ K*	TWA: 50 ppm TWA: 221 mg/m³ STEL: 100 ppm STEL: 442 mg/m³ vía dérmica*
Ethylbenzene 100-41-4	TWA: 100 ppm TWA: 442 mg/m³ STEL: 200 ppm STEL: 884 mg/m³ Cutânea*	TWA: 100 ppm TWA: 442 mg/m <sup>3</sup> STEL: 200 ppm STEL: 884 mg/m <sup>3</sup> P*	TWA: 100 ppm TWA: 442 mg/m³ K* Ceiling: 884mg/m3	TWA: 100 ppm TWA: 442 mg/m³ STEL: 200 ppm STEL: 884 mg/m³ K*	TWA: 100 ppm TWA: 441 mg/m³ STEL: 200 ppm STEL: 884 mg/m³ vía dérmica*
Dimethyl Siloxane 63148-62-9	-	TWA: 200 mg/m <sup>3</sup> STEL: 300 mg/m <sup>3</sup> P*	-	-	-
Toluene 108-88-3	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ Cutânea*	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ P*	TWA: 50 ppm TWA: 192 mg/m³ K* Ceiling: 384mg/m³	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ K*	TWA: 50 ppm TWA: 192 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ vía dérmica*





Chemical name	Sweden	Switzerland	United Kingdom
benzyl alcohol 100-51-6	-	TWA: 5 ppm TWA: 22 mg/m³ H*	-
m-phenylenebis (methylamine) 1477-55-0	-	S+ TWA: 0.1 mg/m³ H*	-
xylene 1330-20-7	Bindande KGV: 100 ppm Bindande KGV: 442 mg/m³ NGV: 50 ppm NGV: 221 mg/m³ H*	TWA: 50 ppm TWA: 220 mg/m³ STEL: 100 ppm STEL: 440 mg/m³ H*	TWA: 50 ppm TWA: 220 mg/m³ STEL: 100 ppm STEL: 441 mg/m³ Sk*
Ethylbenzene 100-41-4	Bindande KGV: 200 ppm Bindande KGV: 884 mg/m³ NGV: 50 ppm NGV: 220 mg/m³ H*	TWA: 50 ppm TWA: 220 mg/m³ STEL: 50 ppm STEL: 220 mg/m³ H*	TWA: 100 ppm TWA: 441 mg/m³ STEL: 125 ppm STEL: 552 mg/m³ Sk*
Toluene 108-88-3	Bindande KGV: 100 ppm Bindande KGV: 384 mg/m³ NGV: 50 ppm NGV: 192 mg/m³ H*	TWA: 50 ppm TWA: 190 mg/m³ STEL: 200 ppm STEL: 760 mg/m³ H*	TWA: 50 ppm TWA: 191 mg/m³ STEL: 100 ppm STEL: 384 mg/m³ Sk*

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
xylene 1330-20-7	-	1.5 g/L (urine Methylhippuric acid after end of work day, at the end of a work week/end of the shift)	-	1.50 mg/L - blood (Xylene) - at the end of the work shift 1.50 g/g Creatinine - urine (Methylhippuric acid) - at the end of the work shift	820 µmol/mmol Creatinine (urine - Methylhippuric acid end of shift) 1400 mg/g Creatinine (urine - Methylhippuric acid end of shift)
Ethylbenzene 100-41-4	-	-	2000 mg/g Creatinine - urine Mandelic acid and Phenylglyoxylic acid total) - at the end of exposure or end of work shift	1.50 mg/L - blood (Ethylbenzene) - during exposure 1.50 g/g Creati- nine urine (Man- delic acid) - at the end of the work shift and at the end of the working week	1100 µmol/mmol Creatinine (urine - Mandelic acid end of shift) 1500 mg/g Creatinine (urine - Mandelic acid end of shift)





Toluene 108-88-3	Ponmorth	10 g/dL Hemoglobin (blood - by the first screening and once yearly) 12 g/dL Hemoglobin (blood - by the first screening and once yearly) 3.2 million/µL Erythrocytes (blood - by the first screening and once yearly) 3.8 million/µL Erythrocytes (blood - by the first screening and once yearly) 4000 Leukocytes/µL (blood - by the first screening and once yearly) 13000 Leukocytes/µL (blood - by the first screening and once yearly) 130000 Thrombocytes/µL (blood - by the first screening and once yearly) 130000 Thrombocytes/µL (blood - by the first screening and once yearly) 150000 Thrombocytes/µL (blood - by the first screening and once yearly) 0.8 mg/L (urine - o-Cresol after end of work day, at the end of a work week/end of the shift)	1.6 mmol/mmol Creatinine - urine (Hippuric acid) - at the end of expo- sure or end of work shift	1.0 mg/L - blood (Toluene) - at the end of the work shift 20 ppm - final exhaled air (Toluene) - during exposure 2.50 g/g Creatinine urine (Hippuric acid) - at the end of the work shift 1.0 mg/g Creatinine urine (o-Cresol) - at the end of the work shift	1.6 µmol/mmol Creatinine (urine - Cresol end of shift) 1000 µmol/ mmol Creatinine (urine - Hippuric acid end of shift) 1.5 mg/g Cre- atinine urine - o-Cresol end of shift) 1600 mg/g Creatinine (urine - Hippuric acid end of shift)
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
xylene 1330-20-7	-	5.0 mmol/L (urine Methylhippuric acid after the shift)	1500 mg/g creatinine - urine (Methylhippuric acid) - end of shift	2000 mg/L (urine - Methylhippuric (tolur) acid (all isomers) end of shift) 2000 mg/L - BAT (end of exposure or end of shift) urine	2000 mg/L (urine - Methylhippuric (tolur) acid (all isomers) end of shift)





Ethylbenzene 100-41-4	-	5.2 mmol/L (urine - Mandelic acid after the shift after a working week or exposure period)	1500 mg/g creatinine - urine (Mandelic acid) - end of shift at end of workweek		250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of shift)
Toluene 108-88-3	-	500 nmol/L (blood- Toluene in the morning after a working day)	1 mg/L - venous blood (Toluene) - end of shift 2500 mg/g creatinine - urine (Hippuric acid) - end of shift	250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of shift) 250 mg/g Creatinine - BAT (end of exposure or end of shift) urine 130 mg/g Creatinine - (end of exposure or end of shift) - urine 250 mg/g Creatinine - (end of exposure or end of shift) - urine 330 mg/g Creatinine - (end of exposure or end of shift) - urine 670 mg/g Creatinine - (end of exposure or end of shift) - urine 1300 mg/g Creatinine - (end of exposure or end of shift) - urine 1300 mg/g Creatinine - (end of exposure or end of shift) - urine 1300 mg/g Creatinine - (end of exposure or end of shift) - urine	250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of shift)



Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII
xylene 1330-20-7	1500 mg/g Creatinine (urine - Methyl hippuric acid end of shift) 860 µmol/mmol Creati- nine (urine - Methyl hippuric acid end of shift)	1.5 g/g Creatinine (urine - Methylhippuric acids end of shift)	-	1.5 g/g Creatinine - urine (Methylhippuric acid) end of shift







Ethylbenzene 100-41-4	1500 mg/g Creatinine urine - Mandelic acid at end of workweek, end of shift) 1110 µmol/mmol Creatinine (urine - Mandelic acid at end of workweek, end of shift)	0.7 g/g Creatinine (urine sum of Mandelic acid and Phenylglyox- ylic acid end of shift at end of workweek) 0.7 g (end-exhaled air - not critical)	-	0.15 g/g Creatinine - urine (Sum of Man- delic acid and Phenyl- glyoxylic acid) - end of shift at end of workweek
Toluene 108-88-3	1 mg/g Creatinine (urine - o-Cresol end of shift) 1 µmol/mmol Creatinine (urine - o- Cresol end of shift)	0.02 mg/L (blood - Toluene prior to last shift of workweek) 0.03 mg/L (urine - Toluene end of shift) 0.3 mg/g Creatinine (urine - o-Cresol end of shift)	-	0.3 mg/g Creatinine - urine (o-Cresol (with hydrolysis)) - end of shift 0.03 mg/L - urine (Toluene) - end of shift 0.02 mg/L - blood (Toluene) - prior to last shift of workweek
Chemical name	Latvia	Luxembourg	Romania	Slovakia
xylene 1330-20-7	-	-	3 g/L - urine Methylhippuric acid) - end of shift	1.5 mg/L (blood - Xy- lene end of exposure or work shift) 2000 mg/L (urine - Methylhippuric acid end of exposure or work shift)
Ethylbenzene 100-41-4	-	-	1.5 g/g Creatinine - urine (Mandelic acid) - end of work week	12 mg/L (urine - 2 and 4-Ethylphenol end of exposure or work shift) 1600 mg/L (urine - Mandelic acid and Phenylglycolic acid end of exposure or work shift)
Toluene 108-88-3	1.6 g/g Creatinine - urine (Hippuric acid) - end of shift 0.05 mg/L - blood (Toluene) - end of shift	-	2 g/L - urine (Hippuric acid) - end of shift mg/L - urine (o-Cresol) end of shift	600 µg/L (blood - Toluene end of exposure or work shift) 1.5 mg/L (urine - o-Cresol after all work shifts) 1.5 mg/L (urine - o-Cresol end of exposure or work shift) 1600 mg/g creatinine (- Hippuric acid end of exposure or work shift)
Chemical name	Slovenia	Spain	Switzerland	United Kingdom
xylene 1330-20-7	2 g/L - urine Methylhipuric acid (all isomers)) - at the end of the work shift	1 g/g Creatinine (urine - Methylhippuric acids end of shift)	2 g/L (urine - Methylhippuric acid end of shift)	650 mmol/mol creati- nine urine (Methyl hippuric acid) - post shift





Ethylbenzene 100-41-4	250 mg/g Creatinine - urine (Mandelic acid and Phenylglyoxylic acid) - at the end of the work shift	700 mg/g Creatinine urine - Mandelic acid plus Phenylglyoxylic acid end of workweek)	600 mg/g creatinine (urine - Mandelic acid and Phenylglyoxylacid end of shift)	-
Toluene 108-88-3	600 μg/L - blood Toluene) - immediately after exposure 1.5 mg/L - urine (o- Cresol (after hydroly- sis)) - at the end of the work shift; for long- term exposure: at the end of the work shift after several consecu- tive workdays 75 μg/L - urine (Toluene) at the end of the work shift	0.6 mg/L (urine - o- Cresol end of shift) 0.05 mg/L (blood - Toluene start of last shift of workweek) 0.08 mg/L (urine - Toluene end of shift)	600 μg/L (whole blood - Toluene end of shift) 6.48 μmol/L (whole blood - Toluene end of shift) 2 g/g creatinine (urine - Hippuric acid end of shift, and after several shifts (for long- term exposures)) 1.26 mmol/mmol creatinine (urine - Hip- puric acid end of shift, and after several shifts (for long-term expo- sures)) 0.5 mg/L (urine - o-Cresol end of shift, and after several shifts (for long-term expo- sures)) 4.62 μmol/L (urine - o-Cresol end of shift, and after several shifts (for long- term exposures)) 75 μg/L (urine - Toluol end of shift)	-

## Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
3-aminomethyl-3,5,5-tri- methylcyclohex ylamine 2855-13-2	-	-	0.073 mg/m³ [5] [6] 0.073 mg/m³ [5] [7]
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	-	28 mg/kg bw/day [4] [6]	98.7 mg/m³ [4] [6]
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with am- monia 9046-10-0	-	2.5 mg/kg bw/day [4] [6]	1.36 mg/m³ [4] [6]
m-phenylenebis (methylamine) 1477-55-0	-	0.33 mg/kg bw/day [4] [6]	1.2 mg/m³ [4] [6] 0.2 mg/m³ [5] [6]
xylene 1330-20-7	-	212 mg/kg bw/day [4] [6]	221 mg/m³ [4] [6] 442 mg/m³ [4] [7] 221 mg/m³ [5] [6] 442 mg/m³ [5] [7]





Chemical name	Oral	Dermal	Inhalation
Ethylbenzene 100-41-4	-	180 mg/kg bw/day [4] [6]	77 mg/m³ [4] [6] 293 mg/m³ [5] [7]
Toluene 108-88-3	-	384 mg/kg bw/day [4] [6]	192 mg/m³ [4] [6] 384 mg/m³ [4] [7] 192 mg/m³ [5] [6] 384 mg/m³ [5] [7]

## Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
3-aminomethyl-3,5,5-tri- methylcyclohex ylamine 2855-13-2	0.526 mg/kg bw/day [4] [6]	-	-
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	10 mg/kg bw/day [4] [6]	-	14.8 mg/m³ [4] [6]
xylene 1330-20-7	12.5 mg/kg bw/day [4] [6]	-	65.3 mg/m³ [4] [6] 260 mg/m³ [4] [7] 65.3 mg/m³ [5] [6] 260 mg/m³ [5] [7]
Ethylbenzene 100-41-4	1.6 mg/kg bw/day [4] [6]	-	15 mg/m³ [4] [6]
Toluene 108-88-3	8.13 mg/kg bw/day [4] [6]	-	56.5 mg/m³ [4] [6] 226 mg/m³[4] [7] 56.5 mg/m³ [5] [6] 226 mg/m³ [5] [7]

## **Predicted No Effect Concentration (PNEC)**

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
3-aminomethyl-3,5,5-trimet hylcyclohexylamine 2855-13-2	0.06 mg/L	0.23 mg/L	0.006 mg/L	-	-
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	0.172 mg/L	1.72 mg/L	17.2 μg/L	0.172 mg/L	-
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with am- monia 9046-10-0	0.015 mg/L	0.15 mg/L	0.0142 mg/L	-	-
m-phenylenebis (methylami ne) 1477-55-0	0.094 mg/L	0.152 mg/L	0.0094 mg/L	-	-





Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
xylene 1330-20-7	0.327 mg/L	0.327 mg/L	0.327 mg/L	-	-
Toluene 108-88-3	0.68 mg/L	0.68 mg/L	0.68 mg/L	-	-
Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
3-aminomethyl-3,5,5-trimet hylcyclohexylamine 2855-13-2	5.784 mg/kg sediment dw	0.578 mg/kg sediment dw	3.18 mg/L	1.121 mg/kg soil dw	-
Formaldehyde, oligomeric reaction products with phenol 9003-35-4	0.647 mg/kg sediment dw	64.7 μg/kg sediment dw	-	28.4 µg/kg soil dw	-
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia 9046-10-0	0.132 mg/kg sediment dw	0.125 mg/kg sediment dw	7.5 mg/L	0.0176 mg/kg soil dw	6.93 mg/kg food
m-phenylenebis(methylami ne) 1477-55-0	12.4 mg/kg sediment dw	1.24 mg/kg sediment dw	10 mg/L	2.44 mg/kg soil dw	-
xylene 1330-20-7	12.46 mg/kg sediment dw	12.46 mg/kg sediment dw	6.58 mg/L	2.31 mg/kg soil dw	-
Toluene 108-88-3	16.39 mg/kg sediment dw	16.39 mg/kg sediment dw	13.61 mg/L	2.89 mg/kg soil dw	-

## 8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant

apron.

Respiratory protection No protective equipment is needed under normal use conditions. If

exposure limits are exceeded or irritation is experienced, ventilation and

evacuation may be required.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face

protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.

Wash hands before breaks and immediately after handling the product.

Newark.com/multicomp-pro Farnell.com/multicomp-pro sg.element14.com/b/multicomp-pro



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## **SECTION 9: Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

Physical state Liquid
Appearance Liquid
Colour Light amber

Odour No information available.
Odour threshold No information available

Property Values Remarks • Method

Melting point / freezing point

No data available

None known

Flammability Limit in Air

None known

Upper flammability or explosive limits No data available Lower flammability or explosive limits No data available

Flash point No data available None known
Autoignition temperature No data available None known
Decomposition temperature None known

No data available None known pH (as aqueous solution) No data available None known Kinematic viscosity No data available None known Dynamic viscosity 200 mPa s @ 23°C None known Water solubility No data available None known Solubility(ies) No data available None known No data available None known Partition coefficient No data available Vapour pressure None known

Bulk density 0.92 kg/l

Liquid Density No data available

Relative vapour density

No data available

None known

No data available

Particle characteristics

Relative density

Particle Size No information available
Particle Size Distribution No information available

### 9.2. Other information

9.2.1. Information with regards to physical hazard classes

Explosive properties Not considered to be explosive.

Oxidising properties Does not meet the criteria for classification as oxidizing.

9.2.2. Other safety characteristics

No information available

multicomp PRO

None known



## **SECTION 10: Stability and reactivity**

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

10.5. Incompatible materials

Incompatible materials Acids. Bases. Oxidising agent.

10.6. Hazardous decomposition products

Hazardous decomposition products

None known based on information supplied.

## **SECTION 11: Toxicological information**

## 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

### Information on likely routes of exposure

**Product Information** 

Inhalation Specific test data for the substance or mixture is not available. Corrosive

by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the

lungs. Pulmonary edema can be fatal. Harmful by inhalation.

Eye contact Specific test data for the substance or mixture is not available. Causes seri-

ous eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage

to eyes

Skin contact Specific test data for the substance or mixture is not available. Corrosive.

(based on components). Causes burns. May cause sensitisation by skin contact. Repeated or prolonged skin contact may cause allergic reactions

with susceptible persons.

Ingestion Specific test data for the substance or mixture is not available. Causes

burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itch-

ing. Rashes. Hives.





### **Acute toxicity**

Numerical measures of toxicity No information available

### The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 731.50 mg/kg
ATEmix (dermal) 2,130.50 mg/kg
ATEmix (inhalation-gas) 4,623.10 ppm
ATEmix (inhalation-vapour) 11.30 mg/l
ATEmix (inhalation-dust/mist) 2.80 mg/l

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
3-aminomethyl-3,5,5-tri- methylcy clohexylamine	= 1030 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	> 5.01 mg/L ( Rat ) 4 h 1.07 - 5.01 mg/L ( Rat ) 4 h
benzyl alcohol	= 1230 mg/kg ( Rat )	= 2 g/kg ( Rabbit )	> 4178 mg/m³ ( Rat ) 4 h
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with am- monia	= 242 mg/kg ( Rat )	= 2980 mg/kg ( Rabbit )	> 0.74 mg/L ( Rat ) 8 h
m-phenylenebis (methylamine)	= 660 mg/kg ( Rat )	= 2 g/kg ( Rabbit )	= 1.38 mg/L ( Rat ) 4 h = 1.16 mg/L ( Rat ) 4 h
Formaldehyde, oligomeric reaction products with phenol	> 5 g/kg ( Rat )	> 2000 mg/kg ( Rat )	-
3-cyclohexylaminopro- pylamine	-	632 - 2000 mg/kg ( Rabbit )	> 7.5 mg/L ( Rat ) 1 h
xylene	= 3500 mg/kg ( Rat )	> 4350 mg/kg ( Rabbit )	= 29.08 mg/L ( Rat ) 4 h
Ethylbenzene	= 3500 mg/kg ( Rat )	= 15400 mg/kg ( Rabbit )	= 17.4 mg/L ( Rat ) 4 h
Toluene	= 2600 mg/kg ( Rat )	= 12000 mg/kg ( Rabbit )	= 12.5 mg/L ( Rat ) 4 h

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes severe skin

burns and eye damage.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye

damage. Causes burns.

Respiratory or skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Chemical name	European Union
Toluene	Repr. 2

STOT - single exposure

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or





Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

11.2.2. Other information Other adverse effects

No information available.

## **SECTION 12: Ecological information**

### 12.1. Toxicity

**Ecotoxicity** 

Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
3-aminomethyl- 3,5,5-trim ethylcyclohexylamine	EC50: =37mg/L (72h, Desmodesmus subspicatus)	-	-	EC50: 14.6 - 21.5mg/L (48h, Daphnia magna)
benzyl alcohol	-	LC50: =460mg/L (96h, Pimephales promelas) LC50: =10mg/L (96h, Lepomis macrochirus)	-	EC50: =23mg/L (48h, water flea)
m-phenylenebis (methylamine)	-	LC50: =87.6mg/L (96h, Oryzias latipes)	-	-
Formaldehyde, oligomeric reaction products with phenol and m-phe- nylenebis (methylamine)	-	LC50: =25.9mg/L (96h, Oncorhynchus mykiss)	-	-
xylene	EC50: =11mg/L (72h, Pseudokirchneriella subcapitata)	LC50: =13.4mg/L (96h, Pimephales promelas) LC50: 2.661 - 4.093mg/L (96h, Oncorhynchus mykiss) LC50: 13.5 - 17.3mg/L (96h, Oncorhynchus mykiss) LC50: 13.1 - 16.5mg/L (96h, Lepomis macrochirus) LC50: =19mg/L (96h, Lepomis macrochirus) LC50: 7.711 - 9.591mg/L (96h, Lepomis macrochirus) LC50: 23.53 - 29.97mg/L (96h, Pimephales promelas) LC50: =780mg/L (96h, Cyprinus carpio) LC50: >780mg/L (96h, Cyprinus carpio) LC50: 30.26 - 40.75mg/L (96h, Poecilia reticulata)	-	EC50: =3.82mg/L (48h, water flea) LC50: =0.6mg/L (48h, Gammarus lacustris)





Ethylbenzene	EC50: =4.6mg/L (72h, Pseudokirchneriella subcapitata) EC50: >438mg/L (96h, Pseudokirchneriella subcapitata) EC50: 2.6 - 11.3mg/L 72h, Pseudokirchneriella subcapitata) EC50: 1.7 - 7.6mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 11.0 - 18.0mg/L (96h, Oncorhynchus mykiss) LC50: =4.2mg/L (96h, Oncorhynchus mykiss) LC50: 7.55 - 11mg/L (96h, Pimephales promelas) LC50: =32mg/L (96h, Lepomis macrochirus) LC50: 9.1 - 15.6mg/L (96h, Pimephales promelas) LC50: =9.6mg/L (96h, Poecilia reticulata)	-	EC50: 1.8 - 2.4mg/L (48h, Daphnia magna)
Toluene	EC50: >433mg/L (96h, Pseudokirchneriella subcapitata) EC50: =12.5mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 15.22 - 19.05mg/L (96h, Pimephales promelas) LC50: =12.6mg/L (96h, Pimephales promelas) LC50: 5.89 - 7.81mg/L (96h, Oncorhynchus mykiss) LC50: 14.1 - 17.16mg/L (96h, Oncorhynchus mykiss) LC50: =5.8mg/L (96h, Oncorhynchus mykiss) LC50: 11.0 - 15.0mg/L (96h, Lepomis macrochirus) LC50: =54mg/L (96h, Oryzias latipes) LC50: =28.2mg/L (96h, Poecilia reticulata) LC50: 50.87 - 70.34mg/L (96h, Poecilia reticulata)	-	EC50: 5.46 - 9.83mg/L (48h, Daphnia magna) EC50: =11.5mg/L (48h, Daphnia magna)

## 12.2. Persistence and degradability

Persistence and degradability No information available.

### 12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
3-aminomethyl-3,5,5-trimethylcyclohexylamine	0.99
benzyl alcohol	1.05
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	1.34
m-phenylenebis(methylamine)	0.18
Formaldehyde, oligomeric reaction products with phenol 3.564	
3-cyclohexylaminopropylamine	0.73





Chemical name	Partition coefficient
xylene	3.15
Ethylbenzene	3.6
Toluene	2.73

#### 12.4. Mobility in soil

Mobility in soil No information available.

### 12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
3-aminomethyl-3,5,5-trimethylcyclohexylamine	The substance is not PBT / vPvB
benzyl alcohol	The substance is not PBT / vPvB
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia	The substance is not PBT / vPvB
m-phenylenebis(methylamine)	The substance is not PBT / vPvB
Formaldehyde, oligomeric reaction products with phenol	The substance is not PBT / vPvB
xylene	The substance is not PBT / vPvB
Ethylbenzene	The substance is not PBT / vPvB
Toluene	The substance is not PBT / vPvB

### 12.6. Endocrine disrupting properties

Endocrine disrupting properties

The substance/mixture does not contain components considered to have

endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation

(EU) 2018/605 at levels of 0.1% or higher.

### 12.7. Other adverse effects

No information available.

## **SECTION 13: Disposal considerations**

### 13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in

accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

## **SECTION 14: Transport information**

#### ΙΔΤΔ

14.1 UN number or ID number UN1760

**14.2 UN proper shipping name** Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexylamine)

14.3 Transport hazard class(es)
14.4 Packing group

Description UN1760, Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexy-

lamine), 8, II

14.5 Environmental hazards Yes





14.6 Special precautions for user

Special Provisions A3, A803 ERG Code 8L

**IMDG** 

14.1 UN number or ID number UN1760

**14.2 UN proper shipping name** Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexylamine)

14.3 Transport hazard class(es) 8
14.4 Packing group

Description UN1760, Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexy-

lamine), 8, II, Marine pollutant

14.5 Environmental hazards Yes

14.6 Special precautions for user

Special Provisions 274
EmS-No F-A, S-B

14.7 Maritime transport in bulk according to IMO instruments

No information available

RID

14.1 UN number or ID number UN1760

**14.2 UN proper shipping name** Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexylamine)

14.3 Transport hazard class(es) 8
14.4 Packing group

Description UN1760, Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexy-

lamine), 8, II, Environmentally Hazardous

14.5 Environmental hazards Yes

14.6 Special precautions for user

Special Provisions 274
Classification code C9

ADR

14.1 UN number or ID number UN1760

**14.2 UN proper shipping name** Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexylamine)

**14.3 Transport hazard class(es)** 8 **14.4 Packing group** II

Description UN1760, Corrosive liquid, n.o.s. (3-aminomethyl-3,5,5-trimethylcyclohexy-

lamine), 8, II, (E), Environmentally Hazardous

14.5 Environmental hazards

14.6 Special precautions for user

Special Provisions 274
Classification code C9
Tunnel restriction code (E)

### **SECTION 15: Regulatory information**

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

Yes

Chemical name	French RG number
3-aminomethyl-3,5,5-trimethylcyclohexylamine - 2855-13-2	RG 49,RG 49bis,RG 66
benzyl alcohol - 100-51-6	RG 84
Formaldehyde, oligomeric reaction products with phenol - 9003-35-4	RG 43





Chemical name	French RG number
xylene - 1330-20-7	RG 4bis,RG 84
Ethylbenzene - 100-41-4	RG 84
Toluene - 108-88-3	RG 4bis,RG 84

Water hazard class (WGK)

obviously hazardous to water (WGK 2)

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
xylene	-	-	Development Category 2
Toluene	-	-	Development Category 2

#### **European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

#### Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
3-aminomethyl-3,5,5-trimethylcyclohex- ylamine - 2855-13-2	Use restricted. See item 75.	-
xylene - 1330-20-7	Use restricted. See item 75.	-
Toluene - 108-88-3	Use restricted. See item 48. Use restricted. See item 75.	-

### **Persistent Organic Pollutants**

Not applicable

### Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

### **International Inventories**

**TSCA** Contact supplier for inventory compliance status DSL/NDSL Contact supplier for inventory compliance status **EINECS/ELINCS** Contact supplier for inventory compliance status **ENCS** Contact supplier for inventory compliance status **IECSC** Contact supplier for inventory compliance status **KECL** Contact supplier for inventory compliance status **PICCS** Contact supplier for inventory compliance status AIIC Contact supplier for inventory compliance status **NZIoC** Contact supplier for inventory compliance status

### Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances





PICCS - Philippines Inventory of Chemicals and Chemical Substances

AIIC - Australian Inventory of Industrial Chemicals

NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

## **SECTION 16: Other information**

### Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H225 - Highly flammable liquid and vapour

H226 - Flammable liquid and vapour

H301 - Toxic if swallowed

H302 - Harmful if swallowed

H304 - May be fatal if swallowed and enters airways

H311 - Toxic in contact with skin

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

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H361d - Suspected of damaging the unborn child

H373 - May cause damage to organs through prolonged or repeated exposure

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H412 - Harmful to aquatic life with long lasting effects

#### Legend

SVHC: Substances of Very High Concern for Authorisation:

### Legend Section 8: Exposure controls/personal protection

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value \* Skin designation

+ Sensitisers

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method





Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Part Number MC002566

MC002567 MC002568

MC002569

MC002571

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