

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### ARC CS2(E) Part B

Revision date: 19.10.2022

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

##### 1.1. Product identifier

ARC CS2(E) Part B

UFI: UG6D-XJTP-KHC2-RD1U

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

###### Use of the substance/mixture

For use as a coating on properly prepared surfaces where mild chemical and abrasion exposures are anticipated.

###### Uses advised against

No information available.

##### 1.3. Details of the supplier of the safety data sheet

Company name:	Chesterton International GmbH	
Street:	Am Lenzenfleck 23	
Place:	D-85737 Ismaning GERMANY	
Telephone:	+49 89 99 65 46 - 0	Telefax: +49 89 99 65 46 - 50
e-mail:	eu-sds@chesterton.com	
e-mail (Contact person):	eu-sds@chesterton.com	
Internet:	www.chesterton.com	
Responsible Department:	eu-sds@chesterton.com	

##### 1.4. Emergency telephone

+49(0) 551 - 1 92 40 (GIZ-Nord, 24h)

##### number:

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Regulation (EC) No 1272/2008

Acute Tox. 4; H302  
Acute Tox. 4; H332  
Skin Corr. 1; H314  
Eye Dam. 1; H318  
Skin Sens. 1; H317  
STOT RE 2; H373  
Aquatic Acute 1; H400  
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

###### Regulation (EC) No 1272/2008

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#### Hazard components for labelling

Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine  
m-phenylenebis(methylamine)  
Copolymer of benzenamine and formaldehyde, hydrogenated  
3,6,9-triazaundecamethylenediamine; tetraethylenepentamine  
N-(3-(trimethoxysilyl)propyl)ethylenediamine

**Signal word:** Danger

#### Pictograms:



#### Hazard statements

H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

#### Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated 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.
P310	Immediately call a POISON CENTER/doctor.
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

#### 2.3. Other hazards

The safety and health hazards are detailed separately for Part A and Part B. The final cured material is considered nonhazardous. Upon machining, refer to the precautions in the safety data sheets for Part A and Part B.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

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#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine			20 - < 25 %
	629-725-6		01-2119487006-38	
	Skin Corr. 1C, Eye Dam. 1, Skin Sens. 1A, Aquatic Acute 1, Aquatic Chronic 1; H314 H318 H317 H400 H410			
1477-55-0	m-phenylenebis(methylamine)			20 - < 25 %
	216-032-5		01-2119480150-50	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 3; H332 H302 H314 H318 H317 H412 EUH071			
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated			20 - < 25 %
	603-894-6		01-2119983522-33	
	Acute Tox. 4, Skin Corr. 1, Skin Sens. 1, STOT RE 2, Aquatic Chronic 3; H302 H314 H317 H373 H412			
100-51-6	benzyl alcohol			15 - < 20 %
	202-859-9	603-057-00-5	01-2119492630-38	
	Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H332 H302 H319			
90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction			5 - < 10 %
	292-587-7		01-2119487290-37	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 2; H312 H302 H314 H318 H317 H411			
1760-24-3	N-(3-(trimethoxysilyl)propyl)ethylenediamine			< 1 %
	217-164-6		01-2119970215-39	
	Eye Dam. 1, Skin Sens. 1, STOT SE 3, STOT RE 2; H318 H317 H335 H373			

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

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#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
1226892-45-0	629-725-6	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine	20 - < 25 %
		oral: LD50 = > 2000 mg/kg Aquatic Acute 1; H400: M=10 Aquatic Chronic 1; H410: M=1	
1477-55-0	216-032-5	m-phenylenebis(methylamine)	20 - < 25 %
		inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = 1,34 mg/l (dusts or mists); dermal: LD50 = > 3100 mg/kg; oral: LD50 = 930 mg/kg	
135108-88-2	603-894-6	Copolymer of benzenamine and formaldehyde, hydrogenated	20 - < 25 %
		dermal: LD50 = > 1000 mg/kg; oral: LD50 = > 50 - < 300 mg/kg	
100-51-6	202-859-9	benzyl alcohol	15 - < 20 %
		inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = >4,178 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 1580 mg/kg	
90640-66-7	292-587-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction	5 - < 10 %
		dermal: LD50 = 2800 mg/kg; oral: ATE = 500 mg/kg	
1760-24-3	217-164-6	N-(3-(trimethoxysilyl)propyl)ethylenediamine	< 1 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = 2295 mg/kg	

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

###### General information

First aider: Pay attention to self-protection!

Take off immediately all contaminated clothing and wash it before reuse.

IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

###### After inhalation

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a doctor.

###### After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Seek medical advice immediately.

Do not wash with: Solvents/Thinner

###### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

###### After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

Do NOT induce vomiting.

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

Causes severe skin burns and eye damage.

Harmful if swallowed.

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Skin sensitisation

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

First Aid, decontamination, treatment of symptoms.

### SECTION 5: Firefighting measures

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

- alcohol resistant foam
- Water spray jet
- Carbon dioxide (CO<sub>2</sub>)
- Dry extinguishing powder

##### **Unsuitable extinguishing media**

Full water jet

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

In case of fire may be liberated:

- Carbon monoxide
- Carbon dioxide
- Nitrogen oxides (NO<sub>x</sub>)
- Ammonia (NH<sub>3</sub>)

#### **5.3. Advice for firefighters**

Co-ordinate fire-fighting measures to the fire surroundings.

In case of fire: Wear self-contained breathing apparatus.

Special protective equipment for firefighters: Protective clothing.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### **General advice**

- Provide adequate ventilation.
- Remove persons to safety.
- Safe handling: see section 7
- Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Cover drains. Adverse environmental effects

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

##### **For containment**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

#### **6.4. Reference to other sections**

Safe handling: see section 7

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Personal protection equipment: see section 8

Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Personal protection equipment: see section 8

Do not breathe aerosol.

Avoid contact with skin, eyes and clothes.

Take off contaminated clothing and wash it before reuse.

Contaminated work clothing should not be allowed out of the workplace.

When using do not eat, drink or smoke.

Never use pressure to empty container. Keep/Store only in original container.

Do not allow to enter into surface water or drains.

#### Advice on protection against fire and explosion

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### Advice on general occupational hygiene

Work in well-ventilated zones or use proper respiratory protection. Only wear fitting, comfortable and clean protective clothing. Avoid contact with skin, eyes and clothes. Wash hands and face before breaks and after work and take a shower if necessary.

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

#### Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container.

#### Hints on joint storage

Keep away from food, drink and animal feedingstuffs.

#### Further information on storage conditions

Keep away from:

- Frost

- Heat

- Humidity

### 7.3. Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
1477-55-0	m-Xylene alpha, alpha'-diamine (m-phenylenebis(methylamine))	-	0.1		TWA (8 h)	

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#### DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine			
Worker DNEL, long-term		inhalation	systemic	9,87 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	1,4 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	1,74 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	0,5 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,5 mg/kg bw/day
1477-55-0	m-phenylenebis(methylamine)			
Worker DNEL, long-term		dermal	systemic	0,33 mg/kg bw/day
Worker DNEL, long-term		inhalation	local	0,2 mg/m <sup>3</sup>
Worker DNEL, long-term		inhalation	systemic	1,2 mg/m <sup>3</sup>
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated			
Worker DNEL, long-term		inhalation	systemic	0,2 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	systemic	2 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	2 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	6 mg/kg bw/day
100-51-6	benzyl alcohol			
Worker DNEL, long-term		inhalation	systemic	22 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	systemic	110 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	8 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	40 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	5,4 mg/m <sup>3</sup>
Consumer DNEL, acute		inhalation	systemic	27 mg/m <sup>3</sup>
Consumer DNEL, long-term		dermal	systemic	4 mg/kg bw/day
Consumer DNEL, acute		dermal	systemic	20 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	4 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	20 mg/kg bw/day
90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction			
Worker DNEL, long-term		inhalation	systemic	0,82 mg/m <sup>3</sup>
Worker DNEL, acute		inhalation	systemic	6940 mg/m <sup>3</sup>

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Worker DNEL, long-term	dermal	systemic	0,74 mg/kg bw/day
Worker DNEL, long-term	dermal	local	0,25 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	0,14 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	systemic	2071 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	0,32 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	10 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	0,56 mg/cm <sup>2</sup>
Consumer DNEL, acute	dermal	local	1,29 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	0,21 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	26 mg/kg bw/day
1760-24-3	N-(3-(trimethoxysilyl)propyl)ethylenediamine		
Worker DNEL, long-term	inhalation	local	0,6 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	local	5,36 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local	0,1 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	local	4 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	systemic	130 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	systemic	260 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	5 mg/kg bw/day
Worker DNEL, acute	dermal	systemic	5 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	26 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	systemic	26400 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	2,5 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	17 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	4 mg/kg bw/day



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#### PNEC values

CAS No	Substance	
Environmental compartment		Value
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine	
Freshwater		0,0307 mg/l
Freshwater (intermittent releases)		0,00612 mg/l
Marine water		0,00307 mg/l
Freshwater sediment		119,8 mg/kg
Marine sediment		11,98 mg/kg
Secondary poisoning		20 mg/kg
Micro-organisms in sewage treatment plants (STP)		2,3 mg/l
Soil		9,44 mg/kg
1477-55-0	m-phenylenebis(methylamine)	
Freshwater		0,094 mg/l
Freshwater (intermittent releases)		0,152 mg/l
Marine water		0,009 mg/l
Freshwater sediment		12,4 mg/kg
Marine sediment		1,24 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		2,44 mg/kg
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated	
Freshwater		0,015 mg/l
Freshwater (intermittent releases)		0,15 mg/l
Marine water		0,002 mg/l
Freshwater sediment		15 mg/kg
Marine sediment		1,5 mg/kg
Micro-organisms in sewage treatment plants (STP)		1,9 mg/l
Soil		1,8 mg/kg
100-51-6	benzyl alcohol	
Freshwater		1 mg/l
Freshwater (intermittent releases)		2,3 mg/l
Marine water		0,1 mg/l
Freshwater sediment		5,27 mg/kg
Marine sediment		0,527 mg/kg
Micro-organisms in sewage treatment plants (STP)		39 mg/l
Soil		0,456 mg/kg

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90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction	
Freshwater		0,01 mg/l
Freshwater (intermittent releases)		0,068 mg/l
Marine water		0,001 mg/l
Freshwater sediment		3,198 mg/kg
Marine sediment		0,32 mg/kg
Secondary poisoning		0,23 mg/kg
Micro-organisms in sewage treatment plants (STP)		4,6 mg/l
Soil		2,5 mg/kg
1760-24-3	N-(3-(trimethoxysilyl)propyl)ethylenediamine	
Freshwater		0,05 mg/l
Freshwater (intermittent releases)		0,072 mg/l
Marine water		0,005 mg/l
Freshwater sediment		0,181 mg/kg
Marine sediment		0,018 mg/kg
Micro-organisms in sewage treatment plants (STP)		20 mg/l
Soil		0,007 mg/kg

### 8.2. Exposure controls

#### Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations.

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection:

- Eye glasses with side protection
- goggles

##### Hand protection

Tested protective gloves must be worn: EN ISO 374

NBR (Nitrile rubber),

Wearing time with permanent contact: Thickness of the glove material:  $\geq 0,4$  mm, Breakthrough time:  $>480$  min

Wearing time with occasional contact (splashes): Thickness of the glove material:  $\geq 0,1$  mm, Breakthrough time:  $> 30$  min

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Breakthrough times and swelling properties of the material must be taken into consideration.

##### Skin protection

Wear suitable protective clothing.

##### Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be

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worn.

Combination filtering device A-P3

#### Thermal hazards

No data available

#### Environmental exposure controls

Do not allow to enter into surface water or drains.

### SECTION 9: Physical and chemical properties

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

Physical state:	Paste
Colour:	beige
Odour:	like: Amines

#### Test method

Melting point/freezing point:	No data available
Flammability	
Solid/liquid:	No data available
Gas:	No data available
Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Flash point:	> 65 °C
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH-Value:	No data available
Water solubility:	Immiscible
Solubility in other solvents	
No information available.	
Partition coefficient n-octanol/water:	No data available
Vapour pressure:	No data available
Density:	1,03 g/cm <sup>3</sup>
Relative vapour density:	>1 (Air=1)

#### 9.2. Other information

##### Information with regard to physical hazard classes

Explosive properties  
No information available.

Oxidizing properties  
No information available.

##### Other safety characteristics

Evaporation rate: < 1 (Ether=1)

Viscosity / dynamic:  
(at 23 °C) ~ 900 mPa·s

##### Further Information

No information available.

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#### SECTION 10: Stability and reactivity

##### **10.1. Reactivity**

The product is stable under storage at normal ambient temperatures.

##### **10.2. Chemical stability**

Does not decompose when used for intended uses. No known hazardous decomposition products.

##### **10.3. Possibility of hazardous reactions**

No hazardous reaction when handled and stored according to provisions.

##### **10.4. Conditions to avoid**

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

##### **10.5. Incompatible materials**

Strong alkali , Oxidising agent

##### **10.6. Hazardous decomposition products**

Does not decompose when used for intended uses.

#### SECTION 11: Toxicological information

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

###### **Acute toxicity**

Harmful if swallowed.

Harmful if inhaled.

###### **ATEmix calculated**

ATE (oral) 1140,7 mg/kg; ATE (dermal) 18351,7 mg/kg; ATE (inhalation vapour) 28,74 mg/l; ATE (inhalation dust/mist) 3,657 mg/l

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine				
	oral	LD50 > 2000 mg/kg	Rat	Study report (2009)	OECD Guideline 423
1477-55-0	m-phenylenebis(methylamine)				
	oral	LD50 930 mg/kg	Rat	Study report (1973)	OECD Guideline 401
	dermal	LD50 > 3100 mg/kg	Rat	Study report (1975)	TK 11813 was applied to a shaved area of
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) dust/mist	LC50 1,34 mg/l	Rat		
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated				
	oral	LD50 > 50 - < 300 mg/kg	Rat	Study report (2005)	OECD Guideline 423
	dermal	LD50 > 1000 mg/kg	Rabbit	Study report (1988)	other: 40CFR Part 158 Series 81-2, EPA P
100-51-6	benzyl alcohol				
	oral	LD50 1580 mg/kg	Mouse	Cosmet. Toxicol. 11, 1011-1013 (1973) (1)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rabbit	Raw Material Data Handbook, Vol.1:( Orga	EPA OTS 798.1100
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) dust/mist	LC50 >4,178 mg/l	Rat	ECHA	OECD 403
90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction				
	oral	ATE 500 mg/kg			
	dermal	LD50 2800 mg/kg	Rat	Study report (1979)	Saturated vapour was generated at 22°C b
1760-24-3	N-(3-(trimethoxysilyl)propyl)ethylenediamine				
	oral	LD50 2295 mg/kg	Rat	Study report (2001)	EPA OPPTS 870.1100
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (2000)	EPA OPPTS 870.1200

#### Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

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#### **Sensitising effects**

May cause an allergic skin reaction. (Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine; m-phenylenebis(methylamine); Copolymer of benzenamine and formaldehyde, hydrogenated; Amines, polyethylenepoly-, tetraethylenepentamine fraction; N-(3-(trimethoxysilyl)propyl)ethylenediamine)

#### **Carcinogenic/mutagenic/toxic effects for reproduction**

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

#### **STOT-single exposure**

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

#### **STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure. (Copolymer of benzenamine and formaldehyde, hydrogenated)

#### **Aspiration hazard**

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

### **11.2. Information on other hazards**

#### **Endocrine disrupting properties**

No data available

## **SECTION 12: Ecological information**

### **12.1. Toxicity**

Very toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine					
	Acute fish toxicity	LC50 mg/l	7,53	96 h	Oncorhynchus mykiss	Study report (1984) OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	1,43	72 h	Raphidocelis subcapitata	REACH Registration Dossier OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	1,48	48 h	Daphnia magna	Study report (1984) OECD Guideline 202
	Crustacea toxicity	NOEC mg/l	0,32	21 d	Daphnia magna	REACH Registration Dossier OECD Guideline 211
	Acute bacteria toxicity	(EC50 mg/l)	114	3 h	activated sludge of a predominantly domestic sewage	Study report (2010) OECD Guideline 209
1477-55-0	m-phenylenebis(methylamine)					
	Acute fish toxicity	LC50 mg/l	> 100	96 h	Oncorhynchus mykiss	REACH Registration Dossier OECD Guideline 203
	Acute algae toxicity	ErC50	12 mg/l	72 h	Desmodesmus subspicatus	REACH Registration Dossier OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	15,2	48 h	Daphnia magna (Big water flea)	
	Algae toxicity	NOEC mg/l	10,5	3 d	Selenastrum capricornutum	
	Crustacea toxicity	NOEC	4,7 mg/l	21 d	Daphnia magna	REACH Registration Dossier OECD Guideline 211
	Acute bacteria toxicity	(EC50 mg/l)	> 1000	0,5 h	Activated sludge from laboratory wastewater plant	Study report (2004) OECD Guideline 209
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated					
	Acute fish toxicity	LC50	63 mg/l	96 h	Poecilia reticulata	REACH Registration Dossier OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	43,94	72 h	Desmodesmus subspicatus	Study report (2012) EU Method C.3
100-51-6	benzyl alcohol					
	Acute fish toxicity	LC50 mg/l	> 100	96 h	Oryzias latipes	Review article or handbook (2009) OECD Guideline 203
	Acute algae toxicity	ErC50	770 mg/l	72 h	Raphidocelis subcapitata	Review article or handbook (2009) OECD Guideline 201

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	Acute crustacea toxicity	EC50	230 mg/l	48 h	Daphnia magna	Review article or handbook (2009)	OECD Guideline 202
	Fish toxicity	NOEC mg/l	48,897	30 d	Fish species	<a href="http://epa.gov/oppt/exposure/pubs/episu">http://epa.gov/oppt/exposure/pubs/episu</a>	other: QSAR
	Algae toxicity	NOEC	51 mg/l	3 d			
	Crustacea toxicity	NOEC	51 mg/l	21 d	Daphnia magna	Review article or handbook (2009)	OECD Guideline 211
	Acute bacteria toxicity	(EC50 mg/l)	1385	3 h	activated sludge, domestic	Study report (1989)	OECD Guideline 209
90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction						
	Acute fish toxicity	LC50	420 mg/l	96 h	Poecilia reticulata	REACH Registration Dossier	EU Method C.1
	Acute algae toxicity	ErC50	6,8 mg/l	72 h	Raphidocelis subcapitata	REACH Registration Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	24,1	48 h	Daphnia magna	REACH Registration Dossier	EU Method C.2
	Acute bacteria toxicity	(EC50 mg/l)	97,3	0,5 h	activated sludge, domestic	REACH Registration Dossier	other: EEC L133 1988 p 118-122
1760-24-3	N-(3-(trimethoxysilyl)propyl)ethylenediamine						
	Acute fish toxicity	LC50	597 mg/l	96 h	Danio rerio	REACH Registration Dossier	EU Method C.1
	Acute algae toxicity	ErC50	8,8 mg/l	72 h	Raphidocelis subcapitata	REACH Registration Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50	81 mg/l	48 h	Daphnia magna	REACH Registration Dossier	EU Method C.2

### 12.2. Persistence and degradability



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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine			
	OECD 303A	89%	48	
	OECD 301D	50	28	
	Not readily biodegradable (according to OECD criteria)			
1477-55-0	m-phenylenebis(methylamine)			
	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	49 %	28	
	Not readily biodegradable (according to OECD criteria)			
100-51-6	benzyl alcohol			
	OECD 301A/ ISO 7827/ EEC 92/69/V, C.4-A	95 - 97%	21	
	Readily biodegradable (according to OECD criteria).			

### 12.3. Bioaccumulative potential

#### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine	2,2
1477-55-0	m-phenylenebis(methylamine)	ca. 0,18
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated	2,68
100-51-6	benzyl alcohol	1
90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction	-3,42
1760-24-3	N-(3-(trimethoxysilyl)propyl)ethylenediamine	-0,3

#### BCF

CAS No	Chemical name	BCF	Species	Source
1226892-45-0	Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine	17,4		
1477-55-0	m-phenylenebis(methylamine)	3,16	no data	Validated suite of c
135108-88-2	Copolymer of benzenamine and formaldehyde, hydrogenated	> 18 - < 22	Cyprinus carpio	Study report (1997)
100-51-6	benzyl alcohol	1,371	QSAR model	<a href="http://epa.gov/oppt/">http://epa.gov/oppt/</a>

### 12.4. Mobility in soil

No information available.

### 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

## SECTION 13: Disposal considerations

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#### **13.1. Waste treatment methods**

##### **Disposal recommendations**

Dispose of waste according to applicable legislation.

##### **Contaminated packaging**

Non-contaminated packages may be recycled. Packing which cannot be properly cleaned must be disposed of.  
Dispose of waste according to applicable legislation.

### SECTION 14: Transport information

#### **Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 2735
<b>14.2. UN proper shipping name:</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (Copolymer of benzenamine and formaldehyde, hydrogenated)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	III
Hazard label:	8
Classification code:	C7
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E

#### **Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 2735
<b>14.2. UN proper shipping name:</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (Copolymer of benzenamine and formaldehyde, hydrogenated)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	III
Hazard label:	8
Classification code:	C7
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1

#### **Marine transport (IMDG)**

<b>14.1. UN number or ID number:</b>	UN 2735
<b>14.2. UN proper shipping name:</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (Copolymer of benzenamine and formaldehyde, hydrogenated)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	III
Hazard label:	8
Special Provisions:	223, 274
Limited quantity:	5 L
Excepted quantity:	E1

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EmS:	F-A, S-B
Segregation group:	18 - alkalis
<b>Air transport (ICAO-TI/IATA-DGR)</b>	
<b>14.1. UN number or ID number:</b>	UN 2735
<b>14.2. UN proper shipping name:</b>	AMINES, LIQUID, CORROSIVE, N.O.S. (Copolymer of benzenamine and formaldehyde, hydrogenated)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	III
Hazard label:	8
Special Provisions:	A3 A803
Limited quantity Passenger:	1 L
Passenger LQ:	Y841
Excepted quantity:	E1
IATA-packing instructions - Passenger:	852
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	856
IATA-max. quantity - Cargo:	60 L
<b>14.5. Environmental hazards</b>	
ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	Fatty acids, tall-oil, reaction products with tetraethylenepentamine
<b>14.6. Special precautions for user</b>	
No information available.	
<b>14.7. Maritime transport in bulk according to IMO instruments</b>	
No information available.	

### SECTION 15: Regulatory information

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

##### **EU regulatory information**

Information according to 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

##### **National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

Water hazard class (D): 2 - obviously hazardous to water

#### **15.2. Chemical safety assessment**

For the following substances of this mixture a chemical safety assessment has been carried out:  
 Reaction products of C18 (unsaturated) fatty acids with tetraethylenepentamine  
 m-phenylenebis(methylamine)  
 Copolymer of benzenamine and formaldehyde, hydrogenated

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benzyl alcohol  
N-(3-(trimethoxysilyl)propyl)ethylenediamine

### SECTION 16: Other information

#### Changes

This data sheet contains changes from the previous version in section(s): 2,4,5,6,7,8,9,11,12,13,14,15.

#### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer  
(Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
CLP: Regulation on Classification, Labelling and Packaging of Substances and Mixtures,  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
EC50: Effectice concentration, 50 percent  
DNEL: Derived No Effect Level  
PNEC: Predicted No Effect Concentration  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative

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

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Corr. 1; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
STOT RE 2; H373	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 2; H411	Calculation method

#### Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.

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H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
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.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

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