

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 1 of 20

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

1.1. Product identifier

ARC BX1(E) Part B, ARC I BX1(E) Part B

UFI: 8NT6-N5GE-EXC5-PK61

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

Use of the substance/mixture

ARC Polymer Composite. Repair damage caused by impact, abrasion, erosion or corrosion; rebuild worn areas; fill holes and cracks; provide abrasion resistant surfaces.

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 number:

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Harmful if inhaled.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

Harmful to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 2 of 20

Hazard components for labelling

4,4'-methylenebis(cyclohexylamine)
Diethylenetriamine (2,2'-iminodi(ethylamine))
Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-
[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane
3-aminopropylidimethylamine; N,N-dimethyl-1,3-diaminopropane

Signal word: Danger

Pictograms:



Hazard statements

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H412 Harmful 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.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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.

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 3 of 20

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
100-51-6	benzyl alcohol			5 - < 10 %
	202-859-9	603-057-00-5	01-2119492630-38	
	Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2; H332 H302 H319			
68411-71-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxyaminaddukt)			5 - < 10 %
	270-141-2			
	Acute Tox. 4; H302			
1761-71-3	4,4'-methylenebis(cyclohexylamine)			1 - < 5 %
	217-168-8		01-2119541673-38	
	Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1, STOT RE 2; H302 H314 H318 H317 H373			
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))			1 - < 5 %
	203-865-4	612-058-00-X	01-2119473793-27	
	Acute Tox. 2, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, STOT SE 3; H330 H312 H302 H314 H317 H335			
38294-67-6	Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane			1 - < 5 %
	500-103-5		01-2120769907-34	
	Acute Tox. 4, Skin Corr. 1C, Eye Dam. 1, Skin Sens. 1A, Aquatic Acute 1, Aquatic Chronic 1; H302 H314 H318 H317 H400 H410			
109-55-7	3-aminopropylidimethylamine; N,N-dimethyl-1,3-diaminopropane			< 1 %
	203-680-9	612-061-00-6	01-2119486842-27	
	Flam. Liq. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1, STOT SE 3; H226 H312 H302 H314 H318 H317 H335			

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 4 of 20

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
100-51-6	202-859-9	benzyl alcohol	5 - < 10 %
		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	
68411-71-2	270-141-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxyaminaddukt)	5 - < 10 %
		oral: ATE = 500 mg/kg	
1761-71-3	217-168-8	4,4'-methylenebis(cyclohexylamine)	1 - < 5 %
		dermal: LD50 = 2110 mg/kg; oral: LD50 = 480 mg/kg	
111-40-0	203-865-4	Diethylenetriamine (2,2'-iminodi(ethylamine))	1 - < 5 %
		inhalation: LC50 = >0,89 mg/l (vapours); inhalation: LC50 = 0.07 mg/l (dusts or mists); dermal: LD50 = 1090 mg/kg; oral: LD50 = ca. 1140 mg/kg	
38294-67-6	500-103-5	Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	1 - < 5 %
		oral: LD50 = > 500 - < 2000 mg/kg	
109-55-7	203-680-9	3-aminopropyltrimethylamine; N,N-dimethyl-1,3-diaminopropane	< 1 %
		inhalation: LC50 = > 4,31 mg/l (vapours); dermal: LD50 = > 400 - < 2000 mg/kg; oral: LD50 = 377,1 mg/kg	

Further Information

Diethylenetriamine (2,2'-iminodi(ethylamine)): This component is toxic by inhalation if sprayed or if aerosol/mist is created. The mixture is neither present in aerosol form nor may aerosols occur.

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. Remove contaminated, saturated clothing immediately. In case of skin irritation, consult a physician.

After contact with eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Get immediate medical advice/attention.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Let water be drunk in little sips (dilution effect). Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 5 of 20

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

Causes severe skin burns and eye damage. Irritation to respiratory tract May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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 (CO₂)
- 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_x)

5.3. Advice for firefighters

Special protective equipment for firefighters Protective clothing. In case of fire: Wear self-contained breathing apparatus.

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

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 measures

- Provide adequate ventilation.
- 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.

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
- Personal protection equipment: see section 8
- Disposal: see section 13

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 6 of 20

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

- Wear personal protection equipment (refer to section 8).
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- 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.

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

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
111-40-0	2,2'-Iminodi(ethylamine)	1	4.3		TWA (8 h)	WEL
1344-28-1	Aluminium oxides, inhalable dust	-	10		TWA (8 h)	WEL
409-21-2	Silicon carbide (not whiskers), total inhalable	-	10		TWA (8 h)	WEL
13463-67-7	Titanium dioxide, total inhalable	-	10		TWA (8 h)	WEL

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 7 of 20

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
1344-28-1	Aluminium oxide			
Worker DNEL, long-term		inhalation	systemic	3 mg/m ³
Worker DNEL, long-term		inhalation	local	3 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,84 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,75 mg/m ³
Consumer DNEL, long-term		inhalation	local	0,75 mg/m ³
Consumer DNEL, long-term		dermal	systemic	0,3 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	1,32 mg/kg bw/day
409-21-2	Silicon carbide			
Worker DNEL, acute		inhalation	systemic	94 mg/m ³
Consumer DNEL, acute		inhalation	systemic	23 mg/m ³
Consumer DNEL, acute		dermal	systemic	200 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	13 mg/kg bw/day
100-51-6	benzyl alcohol			
Worker DNEL, long-term		inhalation	systemic	22 mg/m ³
Worker DNEL, acute		inhalation	systemic	110 mg/m ³
Worker DNEL, long-term		dermal	systemic	8 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	40 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	5,4 mg/m ³
Consumer DNEL, acute		inhalation	systemic	27 mg/m ³
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
1761-71-3	4,4'-methylenebis(cyclohexylamine)			
Worker DNEL, long-term		inhalation	systemic	1 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,1 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,21 mg/m ³
Consumer DNEL, long-term		dermal	systemic	0,06 mg/kg bw/day

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 8 of 20

Consumer DNEL, long-term	oral	systemic	0,06 mg/kg bw/day
111-40-0 Diethylenetriamine (2,2'-iminodi(ethylamine))			
Worker DNEL, long-term	inhalation	systemic	15,4 mg/m ³
Worker DNEL, acute	inhalation	systemic	92,1 mg/m ³
Worker DNEL, long-term	inhalation	local	0,87 mg/m ³
Worker DNEL, acute	inhalation	local	2,6 mg/m ³
Worker DNEL, long-term	dermal	systemic	11,4 mg/kg bw/day
Worker DNEL, long-term	dermal	local	1,1 mg/cm ²
Consumer DNEL, long-term	inhalation	systemic	4,6 mg/m ³
Consumer DNEL, acute	inhalation	systemic	27,5 mg/m ³
Consumer DNEL, long-term	dermal	systemic	4,88 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	4,88 mg/kg bw/day
38294-67-6 Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane			
Worker DNEL, long-term	inhalation	systemic	0,58 mg/m ³
Worker DNEL, acute	inhalation	systemic	1,74 mg/m ³
13463-67-7 Titanium dioxide			
Worker DNEL, long-term	inhalation	local	10 mg/m ³
Consumer DNEL, long-term	oral	systemic	700 mg/kg bw/day
109-55-7 3-aminopropyldimethylamine; N,N-dimethyl-1,3-diaminopropane			
Worker DNEL, long-term	inhalation	local	1,2 mg/m ³
Worker DNEL, long-term	inhalation	systemic	1,2 mg/m ³
Worker DNEL, acute	inhalation	systemic	9,8 mg/m ³

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 9 of 20

PNEC values

CAS No	Substance	Value
Environmental compartment		Value
1344-28-1	Aluminium oxide	
Micro-organisms in sewage treatment plants (STP)		20 mg/l
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
1761-71-3	4,4'-methylenebis(cyclohexylamine)	
Freshwater		0,08 mg/l
Freshwater (intermittent releases)		0,08 mg/l
Marine water		0,008 mg/l
Freshwater sediment		137 mg/kg
Marine sediment		13,7 mg/kg
Secondary poisoning		0,556 mg/kg
Micro-organisms in sewage treatment plants (STP)		3,2 mg/l
Soil		27,2 mg/kg
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))	
Freshwater		0,56 mg/l
Freshwater (intermittent releases)		0,32 mg/l
Marine water		0,056 mg/l
Freshwater sediment		1072 mg/kg
Marine sediment		107,2 mg/kg
Micro-organisms in sewage treatment plants (STP)		6 mg/l
Soil		7,97 mg/kg
38294-67-6	Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	
Freshwater		0,00046 mg/l
Freshwater (intermittent releases)		0,0046 mg/l
Marine water		0,000046 mg/l
Freshwater sediment		159 mg/kg
Micro-organisms in sewage treatment plants (STP)		14,9 mg/l
13463-67-7	Titanium dioxide	

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 10 of 20

Freshwater	0,184 mg/l
Freshwater (intermittent releases)	0,193 mg/l
Marine water	0,018 mg/l
Freshwater sediment	1000 mg/kg
Marine sediment	100 mg/kg
Micro-organisms in sewage treatment plants (STP)	100 mg/l
Soil	100 mg/kg
109-55-7	3-aminopropyldimethylamine; N,N-dimethyl-1,3-diaminopropane
Freshwater	0,073 mg/l
Freshwater (intermittent releases)	0,34 mg/l
Marine water	0,007 mg/l
Freshwater sediment	0,735 mg/kg
Marine sediment	0,073 mg/kg
Micro-organisms in sewage treatment plants (STP)	10 mg/l
Soil	0,104 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Protective and hygiene measures

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.

Use protective skin cream before handling the product.

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), Butyl caoutchouc (butyl 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

For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 11 of 20

Respiratory protection

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

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:	light grey
Odour:	characteristic

Test method

pH-Value:	No data available
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Changes in the physical state

Melting point:	No data available
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Boiling point or initial boiling point and boiling range:	No data available
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Flash point:	> 100 °C
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Flammability

Solid/liquid:	No data available
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Gas:	No data available
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Explosive properties

No information available.

Lower explosion limits:	not applicable
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Upper explosion limits:	not applicable
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Auto-ignition temperature:	No data available
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Self-ignition temperature

Solid:	No data available
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Gas:	No data available
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Decomposition temperature:	No data available
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Oxidizing properties

No information available.

Vapour pressure:	No data available
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Density:	2,12 g/cm ³
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Water solubility:	Immiscible
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Solubility in other solvents

No information available.

Partition coefficient n-octanol/water:	No data available
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Viscosity / dynamic:	1.000.000 - 2.000.000 mPa·s
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Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 12 of 20

Relative vapour density: > 1 (air = 1)
Evaporation rate: < 1 (Ether = 1)

9.2. Other information

No information available.

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

Exothermic reaction with: Acid, Oxidising agent

10.4. Conditions to avoid

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

10.5. Incompatible materials

Acid, 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 inhaled.

ATEmix calculated

ATE (inhalation vapour) 18,56 mg/l; ATE (inhalation aerosol) 2,590 mg/l

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 13 of 20

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
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) aerosol	LC50 >4,178 mg/l	Rat	ECHA	OECD 403
68411-71-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxyaminaddukt)				
	oral	ATE 500 mg/kg			
1761-71-3	4,4'-methylenebis(cyclohexylamine)				
	oral	LD50 480 mg/kg	Rat	Study report (1987)	EPA OPP 81-1
	dermal	LD50 2110 mg/kg	Rabbit	Study report (1986)	EPA OPP 81-2
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))				
	oral	LD50 ca. 1140 mg/kg	Rat	Study report (1957)	Conducted prior to guidelines
	dermal	LD50 1090 mg/kg	Rabbit		
	inhalation (4 h) vapour	LC50 >0,89 mg/l	Ratte	Manufacturer	
	inhalation (4 h) aerosol	LC50 0.07 mg/l	Ratte	Manufacturer	
38294-67-6	Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane				
	oral	LD50 > 500 - < 2000 mg/kg	Rat	Study report (2000)	OECD Guideline 423
109-55-7	3-aminopropylidimethylamine; N,N-dimethyl-1,3-diaminopropane				
	oral	LD50 377,1 mg/kg	Rat	Study report (1993)	OECD Guideline 401
	dermal	LD50 > 400 - < 2000 mg/kg	Rat	Study report (1993)	OECD Guideline 402
	inhalation (4 h) vapour	LC50 > 4,31 mg/l	Rat	Study report (1991)	OECD Guideline 403

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

Sensitising effects

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 14 of 20

May cause an allergic skin reaction. (4,4'-methylenebis(cyclohexylamine); Diethylenetriamine (2,2'-iminodi(ethylamine)); Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane; 3-aminopropyldimethylamine; N,N-dimethyl-1,3-diaminopropane)

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

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

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 15 of 20

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
100-51-6	benzyl alcohol					
	Acute fish toxicity	LC50 > 100 mg/l	96 h	Oryzias latipes	Review article or handbook (2009)	OECD Guideline 203
	Acute algae toxicity	ErC50 770 mg/l	72 h	Pseudokirchneriella subcapitata	Review article or handbook (2009)	OECD Guideline 201
	Acute crustacea toxicity	EC50 230 mg/l	48 h	Daphnia magna	Review article or handbook (2009)	OECD Guideline 202
	Fish toxicity	NOEC 48,897 mg/l	30 d	Fish species	http://epa.gov/oppt/exposure/pubs/episui	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	(1385 mg/l)	3 h	activated sludge, domestic	Study report (1989)	OECD Guideline 209
1761-71-3	4,4'-methylenebis(cyclohexylamine)					
	Acute fish toxicity	LC50 > 100 mg/l	96 h	Leuciscus idus	Study report (1988)	other: German industrial standard test g
	Acute algae toxicity	ErC50 140 - 200 mg/l	72 h		Study report (1990)	other: German Industrial Standard DIN 38
	Acute crustacea toxicity	EC50 7,07 mg/l	48 h	Daphnia magna	Study report (2002)	OECD Guideline 202
	Fish toxicity	NOEC > 1 mg/l	14 d	freshwater fish	Technical report no. 91, Brussels, Novem	Estimation of a chronic NOEC according t
	Crustacea toxicity	NOEC 4 mg/l	21 d	Daphnia magna	Publication (2002)	OECD Guideline 211
	Acute bacteria toxicity	(ca. 100 mg/l)	0,5 h	activated sludge, industrial	Study report (1986)	OECD Guideline 209
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))					
	Acute fish toxicity	LC50 430 mg/l	96 h	Poecilia reticulata	Study report (1989)	EU Method C.1
	Acute algae toxicity	ErC50 1164 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (1990)	OECD Guideline 201
	Acute crustacea toxicity	EC50 64,6 mg/l	48 h	Daphnia magna	Study report (1989)	EU Method C.2
	Fish toxicity	NOEC > 10 mg/l	28 d	Gasterosteus aculeatus	Study report (1992)	OECD Guideline 210
	Crustacea toxicity	NOEC 5,6 mg/l	21 d	Daphnia magna	Study report (1992)	EU Method C.20

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 16 of 20

	Acute bacteria toxicity	(32,7 mg/l)	3 h	nitrifying bacteria	Study report (1989)	other: Blok, 1974; Respirometric measure
38294-67-6	Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane					
	Acute fish toxicity	LC50 24 mg/l	96 h	Oncorhynchus mykiss	REACH Registration Dossier	OECD Guideline 203
	Acute algae toxicity	ErC50 4,4 mg/l	72 h	Pseudokirchneriella subcapitata	REACH Registration Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l > 0,1	48 h	Daphnia magna	REACH Registration Dossier	OECD Guideline 202
109-55-7	3-aminopropyl dimethylamine; N,N-dimethyl-1,3-diaminopropane					
	Acute fish toxicity	LC50 122 mg/l	96 h	Leuciscus idus melanotus	Study report (1980)	OECD Guideline 203
	Acute algae toxicity	ErC50 34 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2000)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l 59,46	48 h	Daphnia magna	Study report (1988)	EU Method C.2
	Crustacea toxicity	NOEC mg/l 3,64	22 d	Daphnia magna	Study report (2017)	OECD Guideline 211
	Acute bacteria toxicity	(> 1000 mg/l)	0,5 h	activated sludge, domestic	Study report (2005)	OECD Guideline 209

12.2. Persistence and degradability

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
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).			
1761-71-3	4,4'-methylenebis(cyclohexylamine)			
	OECD 302B/ ISO 9888/ EEC 92/69/V, C.9	<10%	28	

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
100-51-6	benzyl alcohol	1
1761-71-3	4,4'-methylenebis(cyclohexylamine)	2,03
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))	-1,58
38294-67-6	Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-[[1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane	> 7,2
109-55-7	3-aminopropyl dimethylamine; N,N-dimethyl-1,3-diaminopropane	-0,352

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 17 of 20

BCF

CAS No	Chemical name	BCF	Species	Source
100-51-6	benzyl alcohol	1,371	QSAR model	http://epa.gov/oppt/
1761-71-3	4,4'-methylenebis(cyclohexylamine)	10,15	Cyprinus carpio	Other company data (
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))	> 2,8	Cyprinus carpio	Publication (1992)
109-55-7	3-aminopropylidimethylamine; N,N-dimethyl-1,3-diaminopropane	3,162	fish	United States Enviro

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

No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Dispose of waste according to applicable legislation.

Contaminated packaging

Non-contaminated packages may be recycled. Dispose of waste according to applicable legislation.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 3259
14.2. UN proper shipping name:	AMINES, SOLID, CORROSIVE, N.O.S. (CYCLOALIPHATIC AMINE / DIETHYLENETRIAMINE)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8
Classification code:	C8
Special Provisions:	274
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number:	UN 3259
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Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 18 of 20

14.2. UN proper shipping name: AMINES, SOLID, CORROSIVE, N.O.S. (CYCLOALIPHATIC AMINE / DIETHYLENETRIAMINE)

14.3. Transport hazard class(es): 8

14.4. Packing group: III

Hazard label: 8

Classification code: C8

Special Provisions: 274

Limited quantity: 5 kg

Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number: UN 3259

14.2. UN proper shipping name: AMINES, SOLID, CORROSIVE, N.O.S. (CYCLOALIPHATIC AMINE / DIETHYLENETRIAMINE)

14.3. Transport hazard class(es): 8

14.4. Packing group: III

Hazard label: 8

Special Provisions: 223, 274

Limited quantity: 5 kg

Excepted quantity: E1

EmS: F-A, S-B

Segregation group: 18 - alkalis

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 3259

14.2. UN proper shipping name: AMINES, SOLID, CORROSIVE, N.O.S. (CYCLOALIPHATIC AMINE / DIETHYLENETRIAMINE)

14.3. Transport hazard class(es): 8

14.4. Packing group: III

Hazard label: 8

Special Provisions: A3 A803

Limited quantity Passenger: 5 kg

Passenger LQ: Y845

Excepted quantity: E1

IATA-packing instructions - Passenger: 860

IATA-max. quantity - Passenger: 25 kg

IATA-packing instructions - Cargo: 864

IATA-max. quantity - Cargo: 100 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No information available.

14.7. Maritime transport in bulk according to IMO instruments

No information available.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 19 of 20

SECTION 15: Regulatory information

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

National regulatory information

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:

benzyl alcohol

4,4'-methylenebis(cyclohexylamine)

Diethylenetriamine (2,2'-iminodi(ethylamine))

Reaction products of 4,4'-methylenebis(cyclohexylamine) and 2,2'-

[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

3-aminopropylidimethylamine; N,N-dimethyl-1,3-diaminopropane

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,7,8.

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC BX1(E) Part B, ARC I BX1(E) Part B

Revision date: 02.03.2021

Page 20 of 20

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

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

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
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.
H412	Harmful to aquatic life with long lasting effects.

Further Information

This information is based solely on data provided by suppliers of the materials used, not on the mixture itself.
No warranty is expressed or implied regarding the suitability of the product for the user's particular purpose.
The user must make their own determination as to suitability.

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