

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC 858(E) Part B

Revision date: 17.09.2018

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

1.1. Product identifier

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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 or erosion and chemical attack.

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:	DE-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

Hazard Statements:

Harmful if swallowed.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxyaminaddukt)

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

Signal word: Danger

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Pictograms:



Hazard statements

- | | |
|------|--|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |

Precautionary statements

- | | |
|----------------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P270 | Do not eat, drink or smoke when using this product. |
| P280 | Wear protective gloves/protective clothing/eye protection/face 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. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P363 | Wash contaminated clothing before reuse. |
| P405 | Store locked up. |
| 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 according to Regulation (EC) No. 1272/2008 [CLP]			
68411-71-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxyaminaddukt)			30 - < 35 %
	270-141-2			
	Acute Tox. 4; H302			
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))			10 - < 15 %
	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			

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

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. Seek medical advice immediately.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

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

No information available.

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

First Aid, decontamination, treatment of symptoms.

After contact with skin, wash immediately with plenty of Lutrol.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Dry extinguishing powder. Carbon dioxide (CO₂). alcohol resistant foam. Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Carbon monoxide Carbon dioxide (CO₂). 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

See protective measures under point 7 and 8.

Provide adequate ventilation.

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

Absorb with liquid-binding material (e.g. 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

See protective measures under point 7 and 8. Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

See section 8.

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.

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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.

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
		-	-		STEL (15 min)	WEL
409-21-2	Silicon carbide (not whiskers), total inhalable	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

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DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
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
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

PNEC values

CAS No	Substance	Value
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

8.2. Exposure controls

Appropriate engineering controls

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

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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.

Eye/face protection

Suitable eye protection:
Eye glasses with side protection
goggles

Hand protection

Tested protective gloves must be worn: DIN EN 374
NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber)
Thickness of the glove material $\geq 0,4$ mm
Breakthrough times and swelling properties of the material must be taken into consideration.
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.
Observe the wear time limits as specified by the manufacturer.

Skin protection

Protective clothing

Respiratory protection

Usually no personal respirative protection necessary.
If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.
Combination filtering device (EN 14387) A-P3
Self-contained respirator (breathing apparatus) (DIN EN 133)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Paste
Colour:	black
Odour:	characteristic

pH-Value:	not determined	Test method
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Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	not determined
Flash point:	>209 °C

Flammability

Solid:	not determined
Gas:	not determined

Explosive properties

No information available.

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Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	not determined
Auto-ignition temperature	
Solid:	not determined
Gas:	not determined
Decomposition temperature:	not determined
Oxidizing properties	
No information available.	
Vapour pressure:	not determined
Density:	1,6 g/cm ³
Water solubility:	Immiscible
Solubility in other solvents	
No information available.	
Partition coefficient:	not determined
Viscosity / dynamic:	100.000 - 180.000 mPa·s
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 toxicological effects

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Acute toxicity

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

ATEmix calculated

ATE (oral) 1279,3 mg/kg; ATE (inhalation vapour) 3,55 mg/l; ATE (inhalation aerosol) 0,496 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
68411-71-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxyaminaddukt)				
	oral	ATE 500 mg/kg			
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	

Irritation and corrosivity

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

Sensitising effects

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

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.

SECTION 12: Ecological information

12.1. Toxicity

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
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
	Acute bacteria toxicity	(32,7 mg/l)	3 h	nitrifying bacteria	Study report (1989)	other: Blok, 1974; Respirometric measure

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))	-1,58

BCF

CAS No	Chemical name	BCF	Species	Source
111-40-0	Diethylenetriamine (2,2'-iminodi(ethylamine))	> 2,8	Cyprinus carpio	Publication (1992)

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. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Contaminated packaging

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

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SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENETRIAMINE)
14.3. Transport hazard class(es):	8
14.4. Packing group:	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)

14.1. UN number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENETRIAMINE)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8
Classification code:	C7
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENETRIAMINE)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8
Special Provisions:	223, 274
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-B
Segregation group:	alkalis

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (DIETHYLENETRIAMINE)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III

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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

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No information available.

SECTION 15: Regulatory information

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

National regulatory information

Water contaminating class (D): 2 - clearly water contaminating

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

Silicon carbide

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

SECTION 16: Other information

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

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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
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method

Relevant H and EUH statements (number and full text)

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.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.

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.)