Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC 858(E) Part B

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

1.1. Product identifier

UFI: UHFF-PRWW-51DK-E9TX

ARC 858(E) Part B

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:	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

Acute Tox. 4; H302
Skin Corr. 1B; H314
Eye Dam. 1; H318
Skin Sens. 1; H317

Full text of hazard statements: see SECTION 16.

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

Signal word: Danger

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 gas.
P270	Do not eat, drink or smoke when using this product.
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.
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

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
68411-71-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxypolyaminaddukt)			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.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
68411-71-2	270-141-2	1,2-Ethanediamine, N-(2-aminoethyl)-, reaction products with bisphenol A diglycidyl ether homopolymer (Epoxypolyaminaddukt)	30 - < 35 %
	oral: ATE = 500 mg/kg		
111-40-0	203-865-4	Diethylenetriamine (2,2'-iminodi(ethylamine))	10 - < 15 %
	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		

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

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.
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

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.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Let 1 glass of water be drunken in little sips (dilution effect).

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.

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 (NOx)

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.
Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

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

For containment

Take up mechanically, placing in appropriate containers for disposal. Take up dust-free and set down dust-free.

6.4. Reference to other sections

Safe handling: see section 7
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
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.

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/m³	fib/cm³	Category	Origin
111-40-0	Diethylene triamine	1	4		TWA (8 h)	
409-21-2	Silicon carbide, respirable dust	-	3		TWA (8 h)	

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
409-21-2	Silicon carbide		
Worker DNEL, acute	inhalation	systemic	94 mg/m³
Consumer DNEL, acute	inhalation	systemic	23 mg/m³
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/m³
Worker DNEL, acute	inhalation	systemic	92,1 mg/m³
Worker DNEL, long-term	inhalation	local	0,87 mg/m³
Worker DNEL, acute	inhalation	local	2,6 mg/m³
Worker DNEL, long-term	dermal	systemic	11,4 mg/kg bw/day
Worker DNEL, long-term	dermal	local	1,1 mg/cm²
Consumer DNEL, long-term	inhalation	systemic	4,6 mg/m³
Consumer DNEL, acute	inhalation	systemic	27,5 mg/m³
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	
Environmental compartment		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 exhaustion at critical locations.
Provide adequate ventilation. If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

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: >= 0,4 mm, Breakthrough time: >480 min
Wearing time with occasional contact (splashes): Thickness of the glove material: >= 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

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 A-P3
Self-contained respirator (breathing apparatus)

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:	black
Odour:	characteristic

		Test method
Melting point/freezing point:	No data available	
Boiling point or initial boiling point and boiling range:	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:	>209 °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:	1,6 g/cm³	
Relative vapour density:	>1	(air = 1)

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

No information available.

Self-ignition temperature

Solid:	No data available
Gas:	No data available

Oxidizing properties

No information available.

Other safety characteristics

Evaporation rate:	<1	(Ether = 1)

Viscosity / dynamic:	100.000 - 180.000 mPa·s

Further 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

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

ATEmix calculated

ATE (oral) 1279,3 mg/kg; ATE (dermal) 7730,5 mg/kg; ATE (inhalation vapour) 3,55 mg/l; ATE (inhalation dust/mist) 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 (Epoxypolyaminaddukt)				
	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) dust/mist	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.

11.2. Information on other hazards

Endocrine disrupting properties

No data available

SECTION 12: Ecological information

12.1. Toxicity

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 mg/l	1164	72 h	Raphidocelis subcapitata	Study report (1990)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	64,6	48 h	Daphnia magna	Study report (1989)	EU Method C.2
	Fish toxicity	NOEC mg/l	> 10	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	(EC50 mg/l)	32,7	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. 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.

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 or ID 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 or ID 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 or ID 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:	18 - alkalis

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID 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:	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. Maritime transport in bulk according to IMO instruments

No information available.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

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

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,4,5,6,7,8,9,11,12,14,15.

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 conernat 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 Refulations 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
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.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.

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