

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 1 of 14

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

1.1. Product identifier

ARC S2(E) Part A

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:	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:

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory or skin sensitisation: Skin Sens. 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 2 of 14

Signal word: Warning

Pictograms:



Hazard statements

- H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P501 Dispose of waste according to applicable legislation.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol	35-40 %
	500-033-5	603-074-00-8
	01-2119456619-26	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H319 H317 H411	
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	15-20 %
	500-006-8	01-2119454392-40
	Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H315 H317 H411	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Change contaminated, saturated clothing. In case of accident or unwellness, seek medical advice immediately

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 3 of 14

(show directions for use or safety data sheet if possible).

After inhalation

In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still.

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

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

Immediate medical treatment required because corrosive injuries that are not treated are hard to cure. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

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

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

Unsuitable extinguishing media

High power 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
Remove persons to safety.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 4 of 14

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

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). Keep container tightly closed.

Advice on protection against fire and explosion

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

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a cool dry place. Keep container tightly closed.
Keep/Store only in original container.
Protect against direct sunlight.
Protect against: Frost

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
409-21-2	Silicon carbide (not whiskers), total inhalable	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
13463-67-7	Titanium dioxide, total inhalable	-	10		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 5 of 14

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol			
Worker DNEL, long-term		inhalation	systemic	12,25 mg/m ³
Worker DNEL, acute		inhalation	systemic	12,25 mg/m ³
Worker DNEL, long-term		dermal	systemic	8,33 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	8,33 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	3,571 mg/kg bw/day
Consumer DNEL, acute		dermal	systemic	3,571 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,75 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	0,75 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
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol			
Worker DNEL, long-term		inhalation	systemic	29,39 mg/m ³
Worker DNEL, long-term		dermal	systemic	104,15 mg/kg bw/day
Worker DNEL, acute		dermal	local	0,0083 mg/cm ²
Consumer DNEL, long-term		inhalation	systemic	8,7 mg/m ³
Consumer DNEL, long-term		dermal	systemic	62,5 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	6,25 mg/kg bw/day
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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 6 of 14

PNEC values

CAS No	Substance	Value
Environmental compartment		
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol	
Freshwater		0,006 mg/l
Marine water		0,001 mg/l
Freshwater sediment		0,996 mg/kg
Marine sediment		0,1 mg/kg
Secondary poisoning		11 mg/kg
Soil		0,196 mg/kg
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	
Freshwater		0,003 mg/l
Freshwater sediment		0,294 mg/kg
Marine sediment		0,029 mg/kg
Soil		0,237 mg/kg
13463-67-7	Titanium dioxide	
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

8.2. Exposure controls

Appropriate engineering controls

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

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)

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 7 of 14

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.
 Wearing time with occasional contact (splashes): max. 480 min. (NBR (Nitrile rubber))
 Wearing time with permanent contact 240 - 480 min (NBR (Nitrile rubber))
 Observe the wear time limits as specified by the manufacturer.

Skin protection

Protective clothing

Respiratory protection

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:	blue	
Odour:	sweet odour	
pH-Value:		not applicable

Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	>200 °C
Flash point:	> 93 °C

Flammability

Solid:	not determined
Gas:	not determined

Explosive properties

not explosive according to EU A.14

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
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Oxidizing properties

Not oxidising.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 8 of 14

Vapour pressure: >1 (air=1) hPa
Density: 1,6 g/cm³
Water solubility: The study does not need to be conducted because the substance is known to be insoluble in water

Solubility in other solvents

No information available.

Partition coefficient: not determined
Viscosity / dynamic: 74k mPa·s
(at 25 °C)
Vapour density: not determined
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

The substance is chemically stable under recommended conditions of storage, use and temperature.

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

Acute toxicity

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 9 of 14

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol				
	oral	LD50 > 2000 mg/kg	Rat	Study report (2007)	OECD Guideline 420
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2007)	OECD Guideline 402
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol				
	oral	LD50 > 5000 mg/kg	Rat	Study report (1988)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1988)	OECD Guideline 402

Irritation and corrosivity

Causes skin irritation.
Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol; Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol)

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 10 of 14

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol					
	Acute fish toxicity	LC50 3,6 mg/l	96 h	Oncorhynchus mykiss	Study report (1982)	OECD Guideline 203
	Acute algae toxicity	ErC50 > 100 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2007)	OECD Guideline 201
	Acute crustacea toxicity	EC50 1,7 mg/l	48 h	Daphnia magna	Study report (1984)	OECD Guideline 202
	Crustacea toxicity	NOEC 0,3 mg/l	21 d	Daphnia magna	Study report (1984)	OECD Guideline 211
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol					
	Acute fish toxicity	LC50 > 1000 mg/l	96 h	Oncorhynchus mykiss	Study report (1998)	OECD Guideline 203
	Acute algae toxicity	ErC50 > 1,8 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (1993)	OECD Guideline 201
	Acute crustacea toxicity	EC50 > 1000 mg/l	48 h	Daphnia magna	Study report (1998)	OECD Guideline 202
	Crustacea toxicity	NOEC 0,3 mg/l	21 d	Daphnia magna	Study report (1984)	OECD Guideline 211

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol	>= 2,64
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	2,7

BCF

CAS No	Chemical name	BCF	Species	Source
25068-38-6	2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol	31		Study report (2010)
9003-36-5	Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	150		Other company data (

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 11 of 14

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.

SECTION 14: Transport information

Land transport (ADR/RID)

<u>14.1. UN number:</u>	UN 3082
<u>14.2. UN proper shipping name:</u>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin)
<u>14.3. Transport hazard class(es):</u>	9
<u>14.4. Packing group:</u>	III
Hazard label:	9
Classification code:	M6
Special Provisions:	274 335 375 601
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	90
Tunnel restriction code:	E

Inland waterways transport (ADN)

<u>14.1. UN number:</u>	UN 3082
<u>14.2. UN proper shipping name:</u>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin)
<u>14.3. Transport hazard class(es):</u>	9
<u>14.4. Packing group:</u>	III
Hazard label:	9
Classification code:	M6
Special Provisions:	274 335 375 601
Limited quantity:	5 L
Excepted quantity:	E1

Marine transport (IMDG)

<u>14.1. UN number:</u>	UN 3082
<u>14.2. UN proper shipping name:</u>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin)
<u>14.3. Transport hazard class(es):</u>	9
<u>14.4. Packing group:</u>	III

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 12 of 14

Hazard label:	9
Marine pollutant:	P
Special Provisions:	274, 335, 969
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-F

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 3082
14.2. UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxy resin)
14.3. Transport hazard class(es):	9
14.4. Packing group:	III
Hazard label:	9
Special Provisions:	A97 A158 A197
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y964
Excepted quantity:	E1
IATA-packing instructions - Passenger:	964
IATA-max. quantity - Passenger:	450 L
IATA-packing instructions - Cargo:	964
IATA-max. quantity - Cargo:	450 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	yes
Danger releasing substance:	epoxy resin

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

Employment restrictions:	Observe restrictions to employment for juvenils 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 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:

Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 13 of 14

2-(chloromethyl)oxirane;4-[2-(4-hydroxyphenyl)propan-2-yl]phenol
Silicon carbide
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol
Titanium dioxide

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: Effect 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
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Chronic 2; H411	Calculation method

Relevant H and EUH statements (number and full text)

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

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.



Safety Data Sheet

according to Regulation (EC) No 1907/2006

ARC S2(E) Part A

Revision date: 12.01.2018

Page 14 of 14

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