



## SAFETY DATA SHEET

### ARBOKOL 682 POURING GRADE CURING AGENT

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

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

##### 1.1. Product identifier

**Product name** ARBOKOL 682 POURING GRADE CURING AGENT

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

**Identified uses** [PC1] Curing agent component of: Two-component, epoxy-based adhesive.

**Uses advised against** Restricted to professional users. This product is not intended to be used by the general public.

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

**Supplier** Adshead Ratcliffe & Co. Ltd.  
Derby Road, Belper  
Derbyshire.  
DE56 1WJ  
T: (+44) 01773 826661  
F: (+44) 01773 821215  
E: sds.carlisle@ccm-europe.com

##### 1.4. Emergency telephone number

**Emergency telephone** NPIS (National Poisons Information Service): 0344 892 0111 (for medical professionals only). For medical advice, members of the public should contact NHS 111 in England: 111; NHS 24 in Scotland: 111; NHS Direct in Wales: 111 or 0845 4647. In Northern Ireland: contact your local GP or pharmacist.

#### SECTION 2: Hazards identification

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

###### Classification (EC 1272/2008)

**Physical hazards** Not Classified

**Health hazards** Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317

**Environmental hazards** Aquatic Chronic 2 - H411

**Human health** The product is irritating to eyes and skin. May cause skin sensitisation or allergic reactions in sensitive individuals.

**Environmental** The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

##### 2.2. Label elements

###### Hazard pictograms



**Signal word** Warning

## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Hazard statements</b>	H315 Causes skin irritation. H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>	P261 Avoid breathing vapours. P264 Wash contaminated skin thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention.
<b>Supplemental label information</b>	EUH212 Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.
<b>Contains</b>	2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane, Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

### 2.3. Other hazards

Curing process may release a small amount of methanol which is irritating to mucous membranes and has skin drying and narcotic effects. This product does not contain any substances classified as PBT or vPvB.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane</b>	<b>25 - &lt; 50%</b>
CAS number: 1675-54-3	EC number: 216-823-5
REACH registration number: 01-2119456619-26-XXXX	
<b>Classification</b> Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	
<b>Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane</b>	<b>10 - 30%</b>
CAS number: 9003-36-5	EC number: 701-263-0
REACH registration number: 01-2119454392-40-XXXX	
<b>Classification</b> Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	

## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Hexan-6-olide</b>		<b>&lt; 5%</b>
CAS number: 502-44-3	EC number: 207-938-1	REACH registration number: 01-2119485521-38-XXXX
<b>Classification</b>		
Eye Irrit. 2 - H319		
<b>Titanium dioxide</b>		<b>&lt; 5%</b>
CAS number: 13463-67-7	EC number: 236-675-5	REACH registration number: 01-2119489379-17-XXXX
<b>Classification</b>		
Carc. 2 - H351		
<b>[3-(2,3-epoxypropoxy)propyl]trimethoxysilane</b>		<b>&lt; 3%</b>
CAS number: 2530-83-8	EC number: 219-784-2	REACH registration number: 01-2119513212-58-XXXX
<b>Classification</b>		
Eye Dam. 1 - H318 Aquatic Chronic 3 - H412		
<b>Methanol</b>		<b>&lt; 0.1%</b>
CAS number: 67-56-1	EC number: 200-659-6	REACH registration number: 01-2119433307-44-XXXX
<b>Classification</b>		
Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370		

The full text for all hazard statements is displayed in Section 16.

**Composition comments**      This product contains > 1% of titanium dioxide but less than 1% of all particles have a diameter ≤ 10 µm therefore the classification Carc. 2; H351 does not apply.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>General information</b>	In all cases of doubt, or if symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
<b>Inhalation</b>	Move affected person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Give plenty of water to drink. Give milk instead of water if readily available. Get medical attention if any discomfort continues.
<b>Skin contact</b>	Wipe off excess material with cloth or paper. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.

## ARBOKOL 682 POURING GRADE CURING AGENT

**Eye contact** Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

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

**Inhalation** No specific symptoms known.

**Ingestion** May cause discomfort if swallowed. May cause irritation to mouth, throat and stomach.

**Skin contact** Skin irritation. Allergic rash.

**Eye contact** Irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain.

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

**Notes for the doctor** Treat symptomatically.

**Specific treatments** Antidote for methanol poisoning is ethanol.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media** Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

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

**Specific hazards** No unusual fire or explosion hazards noted.

**Hazardous combustion products** Toxic gases or vapours. Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses.

**Special protective equipment for firefighters** Wear self contained breathing apparatus.

## SECTION 6: Accidental release measures

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

**Personal precautions** Avoid inhalation of vapours. Provide adequate ventilation. After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Wash contaminated clothing before reuse. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet.

### 6.2. Environmental precautions

**Environmental precautions** Avoid discharge into drains or watercourses or onto the ground.

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

**Methods for cleaning up** When handling waste, the safety precautions applying to handling of the product should be considered. Wear necessary protective equipment. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses.

### 6.4. Reference to other sections

## ARBOOK 682 POURING GRADE CURING AGENT

**Reference to other sections** For personal protection, see Section 8. See Section 11 for additional information on health hazards. The product contains a substance which is hazardous to aquatic organisms and which may cause long term adverse effects in the aquatic environment. See section 12. For waste disposal, see section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with skin and eyes. Avoid inhalation of vapours. Persons susceptible to allergic reactions should not handle this product. Good personal hygiene procedures should be implemented. Contaminated work clothing should not be allowed out of the workplace.

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

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place.

**Storage class** Corrosive storage.

#### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

**Usage description** Curing agent component of a two part pourable sealant / adhesive.

### SECTION 8: Exposure controls/Personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

##### **Titanium dioxide**

Long-term exposure limit (8-hour TWA): WEL 4 mg/m<sup>3</sup> respirable dust

Long-term exposure limit (8-hour TWA): WEL 10 mg/m<sup>3</sup> inhalable dust

##### **Methanol**

Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m<sup>3</sup>

Sk

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through the skin.

#### 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane (CAS: 1675-54-3)

<b>DNEL</b>	Workers - Inhalation; Long term systemic effects: 4.93 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 0.75 mg/kg/day
<b>PNEC</b>	Fresh water; 0.006 mg/l Fresh water, Intermittent release; 0.018 mg/l marine water; 0.001 mg/l marine water, Intermittent release; 0.002 mg/l STP; 10 mg/l Sediment (Freshwater); 0.341 mg/kg Sediment (Marinewater); 0.034 mg/kg Soil; 0.065 mg/kg Oral (food); 11 mg/kg food

Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-(2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl)oxirane (CAS: 9003-36-5)

## ARBOKOL 682 POURING GRADE CURING AGENT

**DNEL** Workers - Inhalation; Long term systemic effects: 29.39 mg/m<sup>3</sup>  
 Workers - Dermal; Long term systemic effects: 104.15 mg/kg/day  
 Workers - Dermal; Short term local effects: 8.3 µg/cm<sup>2</sup>

**PNEC** Fresh water; 0.003 mg/l  
 Intermittent release; 0.025 mg/l  
 marine water; 0.0003 mg/l  
 STP; 10 mg/l  
 Sediment (Freshwater); 0.294 mg/kg  
 Sediment (Marinewater); 0.029 mg/kg  
 Soil; 0.237 mg/kg

### Hexan-6-olide (CAS: 502-44-3)

**DNEL** - Dermal; Long term systemic effects: 1.02 mg/kg/day  
 - Inhalation; Long term local effects: 7 mg/m<sup>3</sup>  
 - Inhalation; Long term systemic effects: 4.1 mg/m<sup>3</sup>

**PNEC** - Fresh water; 0.204 mg/l  
 - marine water; 0.0204 mg/l  
 - Intermittent release; 2.04 mg/l  
 - STP; 32 mg/l

### [3-(2,3-epoxypropoxy)propyl]trimethoxysilane (CAS: 2530-83-8)

**DNEL** Workers - Inhalation; Long term systemic effects: 70.5 mg/m<sup>3</sup>  
 Workers - Dermal; Long term systemic effects: 10 mg/kg/day

**PNEC** Fresh water; 0.45 mg/l  
 Intermittent release; 0.45 mg/l  
 marine water; 0.045 mg/l  
 STP; 8.2 mg/l  
 Sediment (Freshwater); 1.6 mg/kg  
 Sediment (Marinewater); 0.16 mg/kg  
 Soil; 0.063 mg/kg

### Allyl 2,3-epoxypropyl ether (CAS: 106-92-3)

**DNEL** - Inhalation; Long term systemic effects: 0.954 mg/m<sup>3</sup>  
 - Inhalation; Short term systemic effects: 896 mg/m<sup>3</sup>  
 - Inhalation; Short term local effects: 8.26 mg/m<sup>3</sup>  
 - Dermal; Long term systemic effects: 0.19 mg/kg/day  
 - Dermal; Short term systemic effects: 127.5 mg/kg/day

**PNEC** Fresh water; 0.036 mg/l  
 marine water; 3.6 µg/l  
 STP; 0.15 mg/l  
 Sediment (Freshwater); 0.042 mg/kg  
 Sediment (Marinewater); 0.004 mg/kg  
 Soil; 5 µg/kg

### Methanol (CAS: 67-56-1)

## ARBOOKOL 682 POURING GRADE CURING AGENT

### DNEL

Workers - Inhalation; Long term systemic effects: 130 mg/m<sup>3</sup>  
 Workers - Inhalation; Short term systemic effects: 130 mg/m<sup>3</sup>  
 Workers - Inhalation; Long term local effects: 130 mg/m<sup>3</sup>  
 Workers - Inhalation; Short term local effects: 130 mg/m<sup>3</sup>  
 Workers - Dermal; Long term systemic effects: 20 mg/kg/day  
 Workers - Dermal; Short term systemic effects: 20 mg/kg/day

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation.

#### Eye/face protection

The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

#### Hand protection

To protect hands from chemicals, gloves should comply with European Standard EN374. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

#### Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

#### Hygiene measures

Do not smoke in work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated.

#### Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. EN 136/140/145/143/149

#### Environmental exposure controls

Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

### SECTION 9: Physical and chemical properties

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

Appearance	Paste.
Colour	Off-white.
Odour	Slight.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	Not applicable.
Flash point	Not applicable.
Evaporation rate	No information available.
Evaporation factor	No information available.
Upper/lower flammability or explosive limits	No information available.
Vapour pressure	No information available.

## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Vapour density</b>	No information available.
<b>Relative density</b>	1.30 - 1.35 @ 20°C
<b>Solubility(ies)</b>	Insoluble in water.
<b>Partition coefficient</b>	No information available.
<b>Auto-ignition temperature</b>	No information available.
<b>Decomposition Temperature</b>	No information available.
<b>Viscosity</b>	500 - 900 P @ 20°C
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidising properties</b>	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

### 9.2. Other information

**Other information** None.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** There are no known reactivity hazards associated with this product.

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Not determined. Will not polymerise.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid excessive heat for prolonged periods of time.

### 10.5. Incompatible materials

**Materials to avoid** Strong acids. Strong alkalis. Strong oxidising agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Methanol in case of hydrolysis.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Summary** Based on available data the classification criteria are not met.

#### Acute toxicity - dermal

**Summary** Based on available data the classification criteria are not met.

#### Acute toxicity - inhalation

**Summary** Based on available data the classification criteria are not met.

#### Skin corrosion/irritation

**Skin corrosion/irritation** Skin Irrit. 2 Causes skin irritation.

#### Serious eye damage/irritation



## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Serious eye damage/irritation</b>	Eye Irrit. 2 Causes serious eye irritation.
<u>Skin sensitisation</u>	
<b>Skin sensitisation</b>	Skin Sens. 1 May cause an allergic skin reaction.
<u>Germ cell mutagenicity</u>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<u>Reproductive toxicity</u>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
<b>Aspiration hazard</b>	Not relevant, due to the form of the product.
<b>General information</b>	Curing process releases a small amount of methanol. Methanol irritates mucous membranes, and has skin drying and narcotic effects.
<b>Inhalation</b>	May cause irritation.
<b>Ingestion</b>	May cause discomfort if swallowed.
<b>Skin contact</b>	Irritating to skin. May cause sensitisation by skin contact.
<b>Eye contact</b>	Irritating to eyes.
<b>Acute and chronic health hazards</b>	Mild dermatitis, allergic skin rash. Defatting, drying and cracking of skin.

### Toxicological information on ingredients.

#### 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

##### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 15,000.0

**Species** Rat

**ATE oral (mg/kg)** 15,000.0

##### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 23,000.0

**Species** Rat

**ATE dermal (mg/kg)** 23,000.0

##### Skin corrosion/irritation

**Skin corrosion/irritation** Causes skin irritation.

## ARBOKOL 682 POURING GRADE CURING AGENT

**Animal data** Skin irritant (rabbit, OECD Guideline 404 (Acute Dermal Irritation / Corrosion))

### Serious eye damage/irritation

**Serious eye damage/irritation** Causes serious eye irritation. OECD 405 Acute eye irritation / corrosion: Irritating (rabbit)

### Skin sensitisation

**Skin sensitisation** May cause an allergic skin reaction. Local Lymph Node Assay (LLNA) - Mouse: Sensitising.

### Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

#### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 5,000.0

**Species** Rat

**ATE oral (mg/kg)** 5,000.0

#### Skin corrosion/irritation

**Skin corrosion/irritation** Causes skin irritation.

**Animal data** Skin irritant (rabbit, OECD Guideline 404 (Acute Dermal Irritation / Corrosion))

### Skin sensitisation

**Skin sensitisation** May cause an allergic skin reaction. Local Lymph Node Assay (LLNA) - Mouse: Sensitising.

### Hexan-6-olide

#### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 4,290.0

**Species** Rat

**ATE oral (mg/kg)** 4,290.0

#### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 6,400.0

**Species** Rabbit

**ATE dermal (mg/kg)** 6,400.0

### Serious eye damage/irritation

**Summary** Eye Irrit. 2 Causes serious eye irritation.

**Serious eye damage/irritation** OECD 405 Acute eye irritation / corrosion: Irritating (rabbit)

### Titanium dioxide

#### Acute toxicity - oral

## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Acute toxicity oral (LD<sub>50</sub> mg/kg)</b>	10,000.0
<b>Species</b>	Rat
<b>Notes (oral LD<sub>50</sub>)</b>	LD <sub>50</sub> >10000 mg/kg, Oral, Rat
<b>ATE oral (mg/kg)</b>	10,000.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Acute toxicity dermal (LD<sub>50</sub> mg/kg)</b>	10,000.0
<b>Species</b>	Rabbit
<b>Notes (dermal LD<sub>50</sub>)</b>	LD <sub>50</sub> >10000 mg/kg, Dermal, Rabbit
<b>ATE dermal (mg/kg)</b>	10,000.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)</b>	6.82
<b>Species</b>	Rat
<b>Notes (inhalation LC<sub>50</sub>)</b>	LC <sub>50</sub> >6.82 mg/l, Inhalation, Rat
<b>ATE inhalation (dusts/mists mg/l)</b>	6.82
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	Suspected of causing cancer by inhalation.
<b>Target organ for carcinogenicity</b>	Lungs

### [3-(2,3-epoxypropoxy)propyl]trimethoxysilane

<b><u>Acute toxicity - oral</u></b>	
<b>Acute toxicity oral (LD<sub>50</sub> mg/kg)</b>	8,025.0
<b>Species</b>	Rat
<b>ATE oral (mg/kg)</b>	8,025.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Acute toxicity dermal (LD<sub>50</sub> mg/kg)</b>	4,250.0
<b>Species</b>	Rabbit
<b>ATE dermal (mg/kg)</b>	4,250.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)</b>	5.3
<b>Species</b>	Rat

## ARBOKOL 682 POURING GRADE CURING AGENT

**ATE inhalation** 5.3  
(dusts/mists mg/l)

### Serious eye damage/irritation

**Summary** Causes serious eye damage.

**Serious eye damage/irritation** OECD 405 Acute eye irritation / corrosion: Causes serious eye damage (rabbit).

### Allyl 2,3-epoxypropyl ether

#### Acute toxicity - oral

**Summary** Harmful if swallowed.

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 1,600.0

**Species** Rat

**ATE oral (mg/kg)** 1,600.0

#### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 2,550.0

**Species** Rat

**ATE dermal (mg/kg)** 2,550.0

#### Acute toxicity - inhalation

**Summary** Toxic if inhaled.

**Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)** 2.56

**Species** Rat

**ATE inhalation (vapours mg/l)** 2.56

#### Skin corrosion/irritation

**Skin corrosion/irritation** Causes skin irritation.

**Animal data** Irritating to skin. Rabbit

#### Serious eye damage/irritation

**Serious eye damage/irritation** Causes serious eye damage. Rabbit

#### Skin sensitisation

**Skin sensitisation** May cause an allergic skin reaction.

#### Germ cell mutagenicity

**Summary** Suspected of causing genetic defects.

**Genotoxicity - in vitro** Ames test: Positive. Chromosome aberration: Positive.

**Genotoxicity - in vivo** Mammalian erythrocyte micronucleus test: Positive.

#### Carcinogenicity

## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Carcinogenicity</b>	Suspected of causing cancer. NOAEC 23.3 mg/m <sup>3</sup> , Inhalation, Rat
<b>Target organ for carcinogenicity</b>	Respiratory tract nose
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Suspected of damaging fertility. Screening - LOAEC 140 mg/m <sup>3</sup> , Inhalation, Rat P
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	May cause respiratory irritation.

### Methanol

<b><u>Acute toxicity - oral</u></b>	
<b>Summary</b>	Toxic if swallowed.
<b>ATE oral (mg/kg)</b>	100.0
<b><u>Acute toxicity - dermal</u></b>	
<b>Summary</b>	Toxic in contact with skin.
<b>Notes (dermal LD<sub>50</sub>)</b>	LD <sub>50</sub> 17100 mg/kg/day, Dermal, Rabbit
<b>ATE dermal (mg/kg)</b>	300.0
<b><u>Acute toxicity - inhalation</u></b>	
<b>Summary</b>	Toxic if inhaled.
<b>Notes (inhalation LC<sub>50</sub>)</b>	LC50 6 hour exposure: 87.5 mg/l, Inhalation, Rat
<b><u>Skin sensitisation</u></b>	
<b>Skin sensitisation</b>	Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.
<b><u>Germ cell mutagenicity</u></b>	
<b>Genotoxicity - in vitro</b>	Negative.
<b>Genotoxicity - in vivo</b>	Negative.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Fertility - NOAEL <1000 mg/kg, Oral, Rat P Fertility - NOAEC 2.39 mg/l, Inhalation, Monkey P, F1
<b>Reproductive toxicity - development</b>	Maternal toxicity: - NOAEC: 13.3 mg/l, Inhalation, Rat Maternal toxicity: - LOAEC: 26.6 mg/l, Inhalation, Rat Teratogenicity: - NOAEC: 6.65 mg/l, Inhalation, Rat Teratogenicity: - LOAEC: 13.3 mg/l, Inhalation, Rat
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Causes damage to organs (optic nerve, Central nervous system) through prolonged or repeated exposure.
<b>Target organs</b>	Central nervous system optic nerve
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	LOAEL 2340 mg/kg/day, Oral, Monkey NOAEC 1.06 mg/l, Inhalation, Rat

### SECTION 12: Ecological information

**Ecotoxicity** The product contains a substance which is toxic to aquatic organisms.

## ARBOOK 682 POURING GRADE CURING AGENT

### 12.1. Toxicity

**Toxicity** There are no data for the product.

#### Acute aquatic toxicity

**Summary** Based on available data the classification criteria are not met.

#### Chronic aquatic toxicity

**Summary** Aquatic Chronic 2 Toxic to aquatic life with long lasting effects.

#### Ecological information on ingredients.

##### 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 2.0 mg/l, Oncorhynchus mykiss (Rainbow trout)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 1.8 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** ErC<sub>50</sub>, 72 hours: >11 mg/l, Selenastrum capricornutum

#### Chronic aquatic toxicity

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: 0.3 mg/l, Daphnia magna

##### Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy)methyl}oxirane

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 2.54 mg/l, Fish

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 2.55 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: >1000 mg/l, Algae

##### Hexan-6-olide

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>80</sub>, 96 hours: 280 mg/l, Poecilia reticulata (Guppy)

**Acute toxicity - aquatic invertebrates** EC<sub>80</sub>, 48 hours: 204 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>80</sub>, 72 hours: 1217 mg/l, Desmodosmus subspicatus

**Acute toxicity - microorganisms** EC<sub>80</sub>, 16 hours: 1260 mg/l, Bacteria

##### Titanium dioxide

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: >100 mg/l, Pimephales promelas (Fat-head Minnow)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: >100 mg/l, Daphnia magna

## ARBOKOL 682 POURING GRADE CURING AGENT

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: >10000 mg/l, Diatom

### [3-(2,3-epoxypropoxy)propyl]trimethoxysilane

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 55 mg/l, Cyprinus carpio (Common carp)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 324 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** ErC50, 7 days: 119 mg/l, Anabaena flos-aquae (blue-green algae)

#### Chronic aquatic toxicity

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: >=100 mg/l, Daphnia magna

### Allyl 2,3-epoxypropyl ether

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 36 mg/l, Cyprinus carpio (Common carp)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 50 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** ErC50, 72 hours: 570 mg/l, Pseudokirchneriella subcapitata

### Methanol

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 96 hours: 18260 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 96 hours: 22000 mg/l, Selenastrum capricornutum

**Acute toxicity - microorganisms** IC<sub>50</sub>, 3 hours: >1000 mg/l, Activated sludge

#### Chronic aquatic toxicity

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: Reproduction: 122 mg/l, Daphnia magna  
NOEC, 21 days: Growth: 4380 mg/l, Daphnia magna

### 12.2. Persistence and degradability

**Persistence and degradability** This product is not expected to be readily biodegradable.

### Ecological information on ingredients.

#### 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

**Persistence and degradability** Not readily biodegradable.

## ARBOKOL 682 POURING GRADE CURING AGENT

### Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

**Persistence and degradability** Not readily biodegradable.

**Biodegradation** - Degradation 16: 28 days

#### Hexan-6-olide

**Persistence and degradability** Readily biodegradable

**Biodegradation** - Degradation 76%: 14 days

#### [3-(2,3-epoxypropoxy)propyl]trimethoxysilane

**Persistence and degradability** Not readily biodegradable.

**Stability (hydrolysis)** Hydrolytic decomposition occurs.

**Biodegradation** - Degradation 37%: 28 days

#### Allyl 2,3-epoxypropyl ether

**Persistence and degradability** Hydrolytic decomposition occurs.

#### Methanol

**Biodegradation** Water - Degradation 88%: 10 days  
Water - Degradation 91%: 15 days  
Water - Degradation 95%: 20 days  
The substance is readily biodegradable.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

**Partition coefficient** No information available.

### Ecological information on ingredients.

#### 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

**Bioaccumulative potential** Bioaccumulation is unlikely.

### Reaction mass of 2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and 2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane

**Bioaccumulative potential** BCF: 150 L/kg ww, QSAR

#### Hexan-6-olide

**Partition coefficient** log Pow: 0.32

#### Titanium dioxide



## ARBOOKOL 682 POURING GRADE CURING AGENT

**Bioaccumulative potential** BCF: 9.6, Cyprinus carpio (Common carp) 42 days

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane

**Bioaccumulative potential** No potential for bioaccumulation.

Allyl 2,3-epoxypropyl ether

**Bioaccumulative potential** Bioaccumulation is unlikely.

Methanol

**Bioaccumulative potential** BCF: <10, Leuciscus idus (Golden orfe)

### 12.4. Mobility in soil

**Mobility** The product is insoluble in water.

### Ecological information on ingredients.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

**Adsorption/desorption coefficient** - Koc: 445 @ 20°C

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane

**Adsorption/desorption coefficient** Expected to have a low potential for adsorption.

Methanol

**Henry's law constant** 0.461 Pa m<sup>3</sup>/mol @ 25°C

### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

### 12.6. Other adverse effects

**Other adverse effects** None known.

## **SECTION 13: Disposal considerations**

### 13.1. Waste treatment methods

**General information** Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**Disposal methods** May be mixed with base component to give an inert polymeric material.

**Waste class** HP4 Irritant HP13 Sensitising HP14 Ecotoxic Recommended EWC Code 08 04 09\*

## **SECTION 14: Transport information**

### 14.1. UN number

**UN No. (ADR/RID)** 3077

**UN No. (IMDG)** 3077

**UN No. (ICAO)** 3077

## ARBOKOL 682 POURING GRADE CURING AGENT

UN No. (ADN) 3077

### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)

**Proper shipping name (IMDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)

**Proper shipping name (ICAO)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)

**Proper shipping name (ADN)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)

### 14.3. Transport hazard class(es)

**ADR/RID class** 9

**ADR/RID classification code** M7

**ADR/RID label** 9

**IMDG class** 9

**ICAO class/division** 9

**ADN class** 9

#### Transport labels



### 14.4. Packing group

**ADR/RID packing group** III

**IMDG packing group** III

**ICAO packing group** III

**ADN packing group** III

### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



### 14.6. Special precautions for user

**EmS** F-A, S-F

**ADR transport category** 3

**Emergency Action Code** 2Z

**Hazard Identification Number (ADR/RID)** 90

**Tunnel restriction code** (E)

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

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## ARBOKOL 682 POURING GRADE CURING AGENT

### SECTION 15: Regulatory information

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

<b>National regulations</b>	Control of Substances Hazardous to Health Regulations 2002 (as amended). EH40/2005 Workplace exposure limits. Health and Safety at Work etc. Act 1974 (as amended). The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, UK SI 2019/720. The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2020, UK SI 2020/1567. The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, UK SI 2019/758, UK SI 2019/858 and UK SI 2019/1144. The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, UK SI 2020/1577.
<b>EU legislation</b>	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
<b>Authorisations (Annex XIV Regulation 1907/2006)</b>	None of the substances in the product are listed.
<b>Restrictions (Annex XVII Regulation 1907/2006)</b>	No relevant restrictions.
<b>Seveso Directive - Control of major accident hazards</b>	E2 Lower-tier 200 tonnes Upper-tier 500 tonnes.

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the mixture.

### SECTION 16: Other information

<b>Abbreviations and acronyms used in the safety data sheet</b>	ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE: Acute Toxicity Estimate. DNEL: Derived No Effect Level. EC <sub>50</sub> : 50% of maximal Effective Concentration. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. LC <sub>50</sub> : Lethal Concentration to 50 % of a test population. IMDG: International Maritime Dangerous Goods. LD <sub>50</sub> : Lethal Dose to 50% of a test population (Median Lethal Dose). PBT: Persistent, Bioaccumulative and Toxic substance. PNEC: Predicted No Effect Concentration. vPvB: Very Persistent and Very Bioaccumulative.
---	---

## ARBOKOL 682 POURING GRADE CURING AGENT

<b>Classification abbreviations and acronyms</b>	Acute Tox. = Acute toxicity Aquatic Chronic = Hazardous to the aquatic environment (chronic) Eye Dam. = Serious eye damage Eye Irrit. = Eye irritation Skin Irrit. = Skin irritation Skin Sens. = Skin sensitisation STOT RE = Specific target organ toxicity-repeated exposure
<b>Key literature references and sources for data</b>	SDS from supplier. Source: European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a>
<b>Classification procedures according to Regulation (EC) 1272/2008</b>	Skin Irrit. 2 - H315, Skin Sens. 1 - H317, Eye Irrit. 2 - H319, Aquatic Chronic 2 - H411: Calculation method.
<b>Revision comments</b>	General review
<b>Revision date</b>	14/02/2022
<b>Revision</b>	2
<b>Supersedes date</b>	16/05/2017
<b>SDS number</b>	10319
<b>SDS status</b>	Approved.
<b>Hazard statements in full</b>	H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H301 Toxic if swallowed. H302 Harmful if swallowed. H311 Toxic in contact with skin. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H331 Toxic if inhaled. H335 May cause respiratory irritation. H341 Suspected of causing genetic defects. H351 Suspected of causing cancer. H351 Suspected of causing cancer by inhalation. H361f Suspected of damaging fertility. H370 Causes damage to organs . H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.