



## SAFETY DATA SHEET ARBOKOL AG2 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 AG2 CURING AGENT

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

**Identified uses** Curing agent component of: Arbokol AG2 polysulphide sealant.

**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** Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT RE 2 - H373

**Environmental hazards** Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411

#### 2.2. Label elements

##### Hazard pictograms



Signal word

Warning

## ARBOKOL AG2 CURING AGENT

**Hazard statements**

H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H373 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.  
 H400 Very toxic to aquatic life.  
 H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P260 Do not breathe vapours.  
 P264 Wash contaminated skin thoroughly after handling.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 P312 Call a POISON CENTRE/doctor if you feel unwell.  
 P337+P313 If eye irritation persists: Get medical advice/ attention.

**Supplemental label information**

EUH208 Contains Thiram. May produce an allergic reaction.

**Contains**

Manganese dioxide, 1,3-diphenylguanidine

### 2.3. Other hazards

This product contains alkanes, C14-17, chloro which is considered to be PBT and vPvB.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>Manganese dioxide</b>	<b>25 - &lt; 50%</b>
CAS number: 1313-13-9	EC number: 215-202-6
<b>Classification</b>	
Acute Tox. 4 - H302	
Acute Tox. 4 - H332	
STOT RE 2 - H373	
<b>Calcium carbonate</b>	<b>10 - 30%</b>
CAS number: 471-34-1	EC number: 207-439-9
<b>Classification</b>	
Skin Irrit. 2 - H315	
Eye Irrit. 2 - H319	
<b>Oxydipropyl dibenzoate</b>	<b>10 - 30%</b>
CAS number: 27138-31-4	EC number: 248-258-5
<b>Classification</b>	
Aquatic Chronic 3 - H412	

## ARBOKOL AG2 CURING AGENT

<b>1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters</b> <span style="float: right;"><b>&lt; 3%</b></span>		
CAS number: 68515-40-2	EC number: 271-082-5	REACH registration number: 01-2119519234-46-XXXX
<b>Classification</b> Not Classified		
<b>Silicon dioxide, chemically prepared</b> <span style="float: right;"><b>&lt; 3%</b></span>		
CAS number: 112945-52-5	EC number: 231-545-4	REACH registration number: 01-2119379499-16-XXXX
<b>Classification</b> Not Classified		
<b>Thiram</b> <span style="float: right;"><b>&lt; 1%</b></span>		
CAS number: 137-26-8	EC number: 205-286-2	REACH registration number: 01-2119492301-45-XXXX
M factor (Acute) = 10	M factor (Chronic) = 10	
<b>Classification</b> Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT RE 2 - H373 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		
<b>1,3-diphenylguanidine</b> <span style="float: right;"><b>&lt; 1%</b></span>		
CAS number: 102-06-7	EC number: 203-002-1	
<b>Classification</b> Acute Tox. 3 - H301 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Repr. 2 - H361f STOT SE 3 - H335 Aquatic Chronic 2 - H411		
<b>Alkanes, C14-17, chloro</b> <span style="float: right;"><b>&lt; 0.3%</b></span>		
CAS number: 85535-85-9	EC number: 287-477-0	
M factor (Acute) = 100	M factor (Chronic) = 10	
<b>Classification</b> Lact. - H362 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		

## ARBOKOL AG2 CURING AGENT

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

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>General information</b>	If in doubt, get medical attention promptly. Never give anything by mouth to an unconscious person.
<b>Inhalation</b>	Move affected person to fresh air at once. 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.
<b>Skin contact</b>	Wipe off excess material with cloth or paper. Wash skin thoroughly with soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
<b>Eye contact</b>	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 any discomfort continues.

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

<b>Inhalation</b>	The product contains a powder which is hazardous by inhalation. May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.
<b>Ingestion</b>	May cause stomach pain or vomiting.
<b>Skin contact</b>	Causes skin irritation. The product contains a small amount of sensitising substance. May cause an allergic skin reaction.
<b>Eye contact</b>	Causes serious eye irritation.

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

<b>Notes for the doctor</b>	Treat symptomatically.
-----------------------------	------------------------

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Water spray, fog or mist. Foam, carbon dioxide or dry powder.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

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

<b>Specific hazards</b>	Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m <sup>3</sup> . Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Nitrous gases (NO <sub>x</sub> ). Manganese oxides. No unusual fire or explosion hazards noted.
<b>Hazardous combustion products</b>	Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

#### 5.3. Advice for firefighters

<b>Protective actions during firefighting</b>	Cool containers exposed to flames with water until well after the fire is out.
<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

### SECTION 6: Accidental release measures

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

## ARBOKOL AG2 CURING AGENT

**Personal precautions** Do not breathe vapours. Remove contaminated clothing immediately and wash skin with soap and water. 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** Do not discharge into drains or watercourses or onto the ground. Avoid release to the environment.

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

**Methods for cleaning up** Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. If involved in a fire, shut off flow if it can be done without risk. Avoid the spillage or runoff entering drains, sewers or watercourses. Wash thoroughly after dealing with a spillage.

### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. 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** Do not breathe vapours. Avoid contact with skin and eyes. Persons susceptible to allergic reactions should not handle this product. Good personal hygiene procedures should be implemented. IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. For personal protection, see Section 8. Avoid release to the environment.

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

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

### 7.3. Specific end use(s)

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

## SECTION 8: Exposure controls/Personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### **Manganese dioxide**

Manganese and its inorganic compounds (as Mn): Long-term exposure limit (8-hour TWA): WEL 0.2 mg/m<sup>3</sup> (inhalable); WEL 0.05 mg/m<sup>3</sup> (respirable)

##### **1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters**

Similar phthalates (di-isooctyl phthalate, di-isononyl phthalate, di-isodecyl phthalate: Long-term exposure limit (8-hour TWA): WEL 5 mg/m<sup>3</sup>

##### **Silicon dioxide, chemically prepared**

Silica, amorphous - Inhalable dust: Long-term exposure limit (8-hour TWA) WEL: 6 mg/m<sup>3</sup>, Respirable dust: Long-term exposure limit (8-hour TWA) WEL: 2.4 mg/m<sup>3</sup>

#### Manganese dioxide (CAS: 1313-13-9)

## ARBOKOL AG2 CURING AGENT

**DNEL** Workers - Inhalation; Long term systemic effects: 0.2 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 0.00414 mg/kg/day

**PNEC**

- Fresh water; 0.00014 mg/l
- marine water; 0.000014 mg/l
- Intermittent release; 0.00074 mg/l
- STP; 100 mg/l
- Sediment (Freshwater); 0.037 mg/kg
- Sediment (Marinewater); 0.0037 mg/kg
- Soil; 0.028 mg/kg

### Calcium carbonate (CAS: 471-34-1)

**DNEL** Workers - Inhalation; Long term local effects: 6.36 mg/m<sup>3</sup>

**PNEC** STP; 100 mg/l

### Oxydipropyl dibenzoate (CAS: 27138-31-4)

**DNEL** Workers - Inhalation; Long term systemic effects: 8.8 mg/m<sup>3</sup>  
Workers - Inhalation; Short term systemic effects: 35.08 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 10 mg/kg/day  
Workers - Dermal; Short term systemic effects: 170 mg/kg/day

**PNEC**

- Fresh water; 0.02 mg/l
- marine water; 0.002 mg/l
- Fresh water, Intermittent release; 0.04 mg/l
- marine water, Intermittent release; 0.01 mg/l
- STP; 10 mg/l
- Sediment (Freshwater); 8.03 mg/kg
- Sediment (Marinewater); 0.803 mg/kg
- Soil; 1.0 mg/kg
- Oral (food); 333 mg/kg

### 1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters (CAS: 68515-40-2)

**DNEL** Workers - Inhalation; Long term systemic effects: 1.32 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 2.8 mg/kg/day

### Thiram (CAS: 137-26-8)

**DNEL** Workers - Inhalation; Long term systemic effects: 0.118 mg/m<sup>3</sup>  
Workers - Inhalation; Short term systemic effects: 0.564 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 1.6 mg/kg/day  
Workers - Dermal; Short term systemic effects: 10 mg/kg/day

**PNEC**

- Fresh water; 0.00046 mg/l
- marine water; 0.000046 mg/l
- Sediment (Freshwater); 0.047 mg/kg
- Sediment (Marinewater); 0.0047 mg/kg
- Soil; 0.00912 mg/kg
- STP; 0.0311 mg/l

### 1,3-diphenylguanidine (CAS: 102-06-7)

## ARBOKOL AG2 CURING AGENT

<b>DNEL</b>	Workers - Inhalation; Long term systemic effects: 0.33 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 0.47 mg/kg/day
<b>PNEC</b>	Fresh water; 30 µg/l Intermittent release; 14 µg/l marine water; 3 µg/l STP; 1.47 mg/l Sediment (Freshwater); 2.51 mg/kg Sediment (Marinewater); 0.251 mg/kg Soil; 0.404 mg/kg

### Alkanes, C14-17, chloro (CAS: 85535-85-9)

<b>DNEL</b>	Workers - Inhalation; Long term systemic effects: 6.7 mg/m <sup>3</sup> Workers - Dermal; Long term systemic effects: 47.9 mg/kg/day
<b>PNEC</b>	- Fresh water; 1 µg/l - marine water; 0.2 µg/l - STP; 80 mg/l - Sediment (Freshwater); 13 mg/kg - Sediment (Marinewater); 2.6 mg/kg - Soil; 11.9 mg/kg Oral (food); 10 mg/kg food

## 8.2. Exposure controls

### Protective equipment



### Appropriate engineering controls

Provide adequate ventilation.

### Eye/face protection

Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

### Hand protection

Wear protective gloves. 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/manufacture, who can provide information about the breakthrough time of the glove material.

### Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet. Contaminated work clothing should not be allowed out of the workplace.

### Respiratory protection

Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

### 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

<b>Appearance</b>	Paste.
<b>Colour</b>	Dark brown.
<b>Odour</b>	Mild.

## ARBOKOL AG2 CURING AGENT

<b>Odour threshold</b>	No information available.
<b>pH</b>	No information available.
<b>Melting point</b>	No information available.
<b>Initial boiling point and range</b>	No information available.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	No information available.
<b>Evaporation factor</b>	No information available.
<b>Flammability (solid, gas)</b>	No information available.
<b>Upper/lower flammability or explosive limits</b>	No information available.
<b>Vapour pressure</b>	No information available.
<b>Vapour density</b>	No information available.
<b>Relative density</b>	1.77 @ 20 @ °C
<b>Solubility(ies)</b>	Not determined. Insoluble in water.
<b>Partition coefficient</b>	No information available.
<b>Auto-ignition temperature</b>	No information available.
<b>Decomposition Temperature</b>	Not determined.
<b>Viscosity</b>	7000 - 9000 Ps @ 20 @ °C
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidising properties</b>	Not determined.
<b><u>9.2. Other information</u></b>	
<b>Other information</b>	None.

### SECTION 10: Stability and reactivity

#### **10.1. Reactivity**

**Reactivity** See the other subsections of this section for further details.

#### **10.2. Chemical stability**

**Stability** Stable at normal ambient temperatures and when used as recommended.

#### **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 reducing agents.

#### **10.6. Hazardous decomposition products**

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



## ARBOKOL AG2 CURING AGENT

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

<b>Toxicological effects</b>	For this endpoint no toxicological data is available for the whole product.
<b><u>Acute toxicity - oral</u></b>	
<b>Summary</b>	Acute Tox. 4 Harmful if swallowed.
<b>ATE oral (mg/kg)</b>	1,025.7
<b><u>Acute toxicity - dermal</u></b>	
<b>Notes (dermal LD<sub>50</sub>)</b>	Based on available data the classification criteria are not met.
<b><u>Acute toxicity - inhalation</u></b>	
<b>Notes (inhalation LC<sub>50</sub>)</b>	Based on available data the classification criteria are not met.
<b><u>Skin corrosion/irritation</u></b>	
<b>Skin corrosion/irritation</b>	Skin Irrit. 2 Causes skin irritation.
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Eye Irrit. 2 Causes serious eye irritation.
<b><u>Respiratory sensitisation</u></b>	
<b>Respiratory sensitisation</b>	Based on available data the classification criteria are not met.
<b><u>Skin sensitisation</u></b>	
<b>Skin sensitisation</b>	The product contains a small amount of a sensitising substance which may cause an allergic reaction in sensitive individuals.
<b><u>Germ cell mutagenicity</u></b>	
<b>Summary</b>	Based on available data the classification criteria are not met.
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	Based on available data the classification criteria are not met.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - development</b>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	STOT RE 2 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.
<b><u>Aspiration hazard</u></b>	
<b>Aspiration hazard</b>	Not applicable.
<b><u>Inhalation</u></b>	
<b>Inhalation</b>	May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.
<b><u>Ingestion</u></b>	
<b>Ingestion</b>	Harmful if swallowed. May cause stomach pain or vomiting.
<b><u>Skin contact</u></b>	
<b>Skin contact</b>	Causes skin irritation. Prolonged and frequent contact may cause redness and irritation. The product contains a small amount of sensitising substance. May cause sensitisation or allergic reactions in sensitive individuals.

## ARBOKOL AG2 CURING AGENT

<b>Eye contact</b>	Causes serious eye irritation.
<b>Acute and chronic health hazards</b>	May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.
<b>Route of exposure</b>	Inhalation Oral Dermal
<b>Target organs</b>	Brain

### Toxicological information on ingredients.

#### Manganese dioxide

##### Acute toxicity - oral

<b>Summary</b>	Harmful if swallowed.
<b>Notes (oral LD<sub>50</sub>)</b>	LD <sub>50</sub> >3480 mg/kg, Oral, Rat REACH dossier information.
<b>ATE oral (mg/kg)</b>	500.0

##### Acute toxicity - inhalation

<b>Summary</b>	Harmful if inhaled.
----------------	---------------------

##### Specific target organ toxicity - repeated exposure

<b>STOT - repeated exposure</b>	May cause damage to organs (Brain) through prolonged or repeated exposure. Inhalation of manganese dioxide caused statistically significant neurobehavioural differences in exposed workers.
<b>Target organs</b>	Brain

#### Calcium carbonate

##### Acute toxicity - oral

<b>Notes (oral LD<sub>50</sub>)</b>	LD <sub>50</sub> >2000 mg/kg, Oral, Rat
-------------------------------------	---

##### Acute toxicity - dermal

<b>Notes (dermal LD<sub>50</sub>)</b>	LD <sub>50</sub> >2000 mg/kg, Dermal, Rat
---------------------------------------	---

##### Acute toxicity - inhalation

<b>Notes (inhalation LC<sub>50</sub>)</b>	LC <sub>50</sub> >3 mg/l, 4 hours, Dust/Mist Rat
---	--

##### Skin corrosion/irritation

<b>Skin corrosion/irritation</b>	Causes skin irritation.
----------------------------------	-------------------------

##### Serious eye damage/irritation

<b>Serious eye damage/irritation</b>	Causes serious eye irritation.
--------------------------------------	--------------------------------

#### Oxydipropyl dibenzoate

##### Acute toxicity - oral

<b>Acute toxicity oral (LD<sub>50</sub> mg/kg)</b>	3,914.0
<b>Species</b>	Rat

##### Acute toxicity - dermal

<b>Notes (dermal LD<sub>50</sub>)</b>	LD <sub>50</sub> >2000 mg/kg, Dermal, Rat
---------------------------------------	---

## ARBOKOL AG2 CURING AGENT

### Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l) 200.0

Species Rat

Notes (inhalation LC<sub>50</sub>) LC50 >200 mg/l/4hr/day, Inhalation, Rat

ATE inhalation (dusts/mists mg/l) 200.0

### Skin corrosion/irritation

Animal data Oedema score: No oedema (0). Erythema/eschar score: No erythema (0). Not irritating.

### Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

### Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

### Germ cell mutagenicity

Genotoxicity - in vitro Negative.

### Reproductive toxicity

Reproductive toxicity - development Fetotoxicity: - NOAEL: 500 mg/kg, Oral, Rat

### Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 1000 mg/kg, Oral, Rat

### 1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

#### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 15,800.0

Species Rat

ATE oral (mg/kg) 15,800.0

#### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 7,940.0

Species Rabbit

ATE dermal (mg/kg) 7,940.0

### Silicon dioxide, chemically prepared

#### Acute toxicity - oral

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

Species Rat

## ARBOKOL AG2 CURING AGENT

**Notes (oral LD<sub>50</sub>)** LD<sub>50</sub> >5000 mg/kg, Oral, Rat

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

### Acute toxicity - dermal

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

**Species** Rabbit

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> >5000 mg/kg, Dermal, Rabbit

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

### Thiram

### Acute toxicity - oral

**Summary** Harmful if swallowed.

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 1,850.0

**Species** Rat

**ATE oral (mg/kg)** 1,850.0

### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> >2000 mg/kg, Dermal, Rabbit

### Acute toxicity - inhalation

**Summary** Harmful if inhaled.

**Acute toxicity inhalation (LC<sub>50</sub> dust/mist mg/l)** 4.42

**Species** Rat

**ATE inhalation (dusts/mists mg/l)** 4.42

### Skin corrosion/irritation

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

### Serious eye damage/irritation

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

### Skin sensitisation

**Skin sensitisation** May cause an allergic skin reaction. - Guinea pig: Sensitising.

### Carcinogenicity

**IARC carcinogenicity** IARC Group 3 Not classifiable as to its carcinogenicity to humans.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** NOAEL 0.84 mg/kg/day, Oral, Dog May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed.

**Target organs** Blood

## ARBOKOL AG2 CURING AGENT

### 1,3-diphenylguanidine

#### Acute toxicity - oral

**Summary** Toxic if swallowed.

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 107.0

**Species** Rat

**ATE oral (mg/kg)** 107.0

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** LD<sub>50</sub> >2000 mg/kg, Oral, Rabbit

#### Skin corrosion/irritation

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

#### Serious eye damage/irritation

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

#### Skin sensitisation

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

#### Reproductive toxicity

**Reproductive toxicity - fertility** Suspected of damaging fertility. Extended one-generation reproductive toxicity study - with F2 generation (Cohorts 1A, and 1B with extension). - LOAEL 5 mg/kg/day, Oral, Rat P

#### Specific target organ toxicity - single exposure

**STOT - single exposure** May cause respiratory irritation.

### Alkanes, C14-17, chloro

#### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 4,000.0

**Species** Rat

**ATE oral (mg/kg)** 4,000.0

#### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 2,800.0

**Species** Rat

**ATE dermal (mg/kg)** 2,800.0

#### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)** 48.17

**Species** Rat

**Notes (inhalation LC<sub>50</sub>)** LC50 >48.17 mg/l, 1 hour, Vapour Rat

## ARBOKOL AG2 CURING AGENT

**ATE inhalation (vapours mg/l)** 48.17

### Reproductive toxicity

**Summary** Lact. May cause harm to breast-fed children.

**Reproductive toxicity - development** Developmental toxicity: - NOAEL: 100 mg/kg/day, Oral, Rabbit Maternal toxicity: - NOAEL: 100 mg/kg/day, Oral, Rabbit

## SECTION 12: Ecological information

**Ecotoxicity** There are no data on the ecotoxicity of this product.

### 12.1. Toxicity

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

### Acute aquatic toxicity

**Summary** Aquatic Acute 1 Very toxic to aquatic life.

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: Thiram: 0.046 - 1.20 1,3-Diphenylguanidine: 4.2 - 9.6 mg/l, Fish

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: Thiram: 0.01 1,3-Diphenylguanidine: 17.0 mg/l, Daphnia magna

### Chronic aquatic toxicity

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

### Ecological information on ingredients.

#### Manganese dioxide

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: >100 % v/v saturated solution, Oncorhynchus mykiss (Rainbow trout)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: >100 % v/v saturated solution, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, : >100 % v/v saturated solution, Desmodium subspicatum

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

#### Calcium carbonate

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: >100 % v/v saturated solution, Oncorhynchus mykiss (Rainbow trout)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: >100 % v/v saturated solution, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: >14 mg/l, Desmodium subspicatum

#### Oxydipropyl dibenzoate

### Acute aquatic toxicity

## ARBOKOL AG2 CURING AGENT

<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hours: 3.7 mg/l, Pimephales promelas (Fat-head Minnow) NOEC, 96 hours: 1.2 mg/l, Pimephales promelas (Fat-head Minnow)
<b>Acute toxicity - aquatic invertebrates</b>	EL50, 48 hours: 19.3 mg/l, Daphnia magna NOELR, 48 hours: 2.2 mg/l, Daphnia magna
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , 72 hours: 4.9 mg/l, Selenastrum capricornutum EC <sub>50</sub> , 96 hours: 3.6 mg/l, Selenastrum capricornutum
<b>Acute toxicity - microorganisms</b>	EC <sub>50</sub> , 3 hours: >100 mg/l, Activated sludge NOEC, 3 hours: >= 100 mg/l, Activated sludge

### 1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

#### Acute aquatic toxicity

<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hours: >1000 mg/l, Oncorhynchus mykiss (Rainbow trout)
<b>Acute toxicity - aquatic invertebrates</b>	LC <sub>50</sub> , 48 hours: 4.5 mg/l, Daphnia magna
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , 96 hours: >1000 ppm, Pseudokirchneriella subcapitata

### Silicon dioxide, chemically prepared

#### Acute aquatic toxicity

<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hours: >10000 mg/l, Brachydanio rerio (Zebra Fish)
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 24 hours: >1000 mg/l, Daphnia magna

### Thiram

#### Acute aquatic toxicity

<b>LE(C)<sub>50</sub></b>	0.01 < L(E)C50 ≤ 0.1
<b>M factor (Acute)</b>	10
<b>Acute toxicity - fish</b>	LC <sub>50</sub> , 96 hours: 0.046 mg/l, Oncorhynchus mykiss (Rainbow trout)
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 48 hours: 0.38 mg/l, Daphnia magna
<b>Acute toxicity - aquatic plants</b>	IC <sub>50</sub> , 7 days: 1.6 mg/l, Lemna gibba

#### Chronic aquatic toxicity

<b>NOEC</b>	0.001 < NOEC ≤ 0.01
<b>Degradability</b>	Non-rapidly degradable
<b>M factor (Chronic)</b>	10
<b>Chronic toxicity - fish early life stage</b>	NOEC, 33 days: 4.6 µg/l, Pimephales promelas (Fat-head Minnow)
<b>Chronic toxicity - aquatic invertebrates</b>	NOEC, 21 days: 20 µg/l, Daphnia magna

### 1,3-diphenylguanidine

## ARBOKOL AG2 CURING AGENT

### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 4.2 mg/l, Pimephales promelas (Fat-head Minnow)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 17.0 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 96 hours: 1.4 mg/l, Selenastrum capricornutum

### Chronic aquatic toxicity

**Chronic toxicity - fish early life stage** NOEC, 34 days: 1.3 mg/l, Pimephales promelas (Fat-head Minnow)

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: 0.6 mg/l, Daphnia magna

### Alkanes, C14-17, chloro

#### Acute aquatic toxicity

**LE(C)<sub>50</sub>** 0.001 < L(E)C<sub>50</sub> ≤ 0.01

**M factor (Acute)** 100

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: >5000 mg/l, Alburnus alburnus (Common bleak)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 0.006 mg/l, Daphnia magna

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 96 hours: >3.2 mg/l, Selenastrum capricornutum

#### Chronic aquatic toxicity

**NOEC** 0.001 < NOEC ≤ 0.01

**Degradability** Non-rapidly degradable

**M factor (Chronic)** 10

**Chronic toxicity - fish early life stage** NOEC, 14 days: >125 µg/l, Alburnus alburnus (Common bleak)

**Chronic toxicity - aquatic invertebrates** NOEC, 21 days: 0.01 mg/l, Daphnia magna

### 12.2. Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

### Ecological information on ingredients.

#### Oxydipropyl dibenzoate

**Biodegradation** Water - Degradation 85%: 28 days  
The substance is readily biodegradable.

#### 1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

**Persistence and degradability** Readily biodegradable



## ARBOKOL AG2 CURING AGENT

### Thiram

**Persistence and degradability** Not readily biodegradable.

**Biodegradation** - Degradation 30%: 28 days

### 1,3-diphenylguanidine

**Persistence and degradability** Readily biodegradable

**Biodegradation** - Degradation 85%: 28 days

### Alkanes, C14-17, chloro

**Biodegradation** Water - Degradation 43% (Closed bottle test): 28 days  
Water - Degradation 63% (Closed bottle test): 60 days  
Water - Degradation 51 - 57%: 36 hours

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

**Partition coefficient** No information available.

### Ecological information on ingredients.

### Oxydipropyl dibenzoate

**Partition coefficient** log Kow: 3.9

### 1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

**Bioaccumulative potential** BCF: 840, Pimephales promelas (Fat-head Minnow)

### Thiram

**Bioaccumulative potential** Bioaccumulation is unlikely.

### 1,3-diphenylguanidine

**Bioaccumulative potential** Bioaccumulation is unlikely.

### Alkanes, C14-17, chloro

**Bioaccumulative potential** BCF: 6660, Oncorhynchus mykiss (Rainbow trout) 35 days

**Partition coefficient** log Kow: 5.47-8.01

### 12.4. Mobility in soil

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

### Ecological information on ingredients.

### Thiram

**Mobility** Shows potential for adsorption to soil.

## ARBOKOL AG2 CURING AGENT

**Adsorption/desorption coefficient**      Soil, sandy loam - Log Koc: 3.3 @ 20°C

### Alkanes, C14-17, chloro

**Adsorption/desorption coefficient**      Log Koc 5.0 - 5.2

#### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment**      This product contains alkanes, C14-17, chloro which is considered to be PBT and 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**      Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. May be mixed with base component to give an inert polymeric material.

**Waste class**      HP4 Irritant HP5 STOT / Aspiration toxicity HP6 Acute toxicity 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

#### 14.2. UN proper shipping name

**Proper shipping name (ADR/RID)**      ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram and Alkanes, C14-17, chloro)

**Proper shipping name (IMDG)**      ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram and Alkanes, C14-17, chloro)

**Proper shipping name (ICAO)**      ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram and Alkanes, C14-17, chloro)

**Proper shipping name (ADN)**      ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram and Alkanes, C14-17, chloro)

#### 14.3. Transport hazard class(es)

**ADR/RID class**      9

**IMDG class**      9

#### 14.4. Packing group

**ADR/RID packing group**      III

**IMDG packing group**      III

## ARBOKOL AG2 CURING AGENT

ICAO packing group III

### 14.5. Environmental hazards

### 14.6. Special precautions for user

Emergency Action Code 2Z

### 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.

## SECTION 15: Regulatory information

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

<b>National regulations</b>	<p>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.</p> <p>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.</p> <p>The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].</p> <p>Control of Substances Hazardous to Health Regulations 2002 (as amended).</p>
<b>EU legislation</b>	<p>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).</p> <p>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).</p>
<b>Health and environmental listings</b>	<p>EU Candidate List of Substances of Very High Concern (SVHCs) for Authorisation: Alkanes, C14-17, chloro (medium-chain chlorinated paraffins; MCCP) which is considered to be PBT and vPvB.</p>

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

## ARBOKOL AG2 CURING AGENT

<b>Abbreviations and acronyms used in the safety data sheet</b>	<p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</p> <p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>ATE: Acute Toxicity Estimate.</p> <p>BCF: Bioconcentration Factor.</p> <p>BOD: Biochemical Oxygen Demand.</p> <p>CAS: Chemical Abstracts Service.</p> <p>cATpE: Converted Acute Toxicity Point Estimate.</p> <p>DMEL: Derived Minimal Effect Level.</p> <p>DNEL: Derived No Effect Level.</p> <p>EC<sub>50</sub>: 50% of maximal Effective Concentration.</p> <p>GHS: Globally Harmonized System.</p> <p>IARC: International Agency for Research on Cancer.</p> <p>IATA: International Air Transport Association.</p> <p>IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code).</p> <p>ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>Kow: Octanol-water partition coefficient.</p> <p>LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.</p> <p>LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>LOAEC: Lowest Observed Adverse Effect Concentration.</p> <p>LOAEL: Lowest Observed Adverse Effect Level.</p> <p>LOEC: Lowest Observed Effect Concentration.</p> <p>MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.</p> <p>NOAEC: No Observed Adverse Effect Concentration.</p> <p>NOAEL: No Observed Adverse Effect Level.</p> <p>NOEC: No Observed Effect Concentration.</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p> <p>PNEC: Predicted No Effect Concentration.</p> <p>REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>SVHC: Substances of Very High Concern.</p> <p>UN: United Nations.</p> <p>UVCB - Unknown or variable composition, complex reaction products or Biological materials.</p> <p>vPvB: Very Persistent and Very Bioaccumulative.</p>
<b>Classification abbreviations and acronyms</b>	<p>Acute Tox. = Acute toxicity</p> <p>Eye Irrit. = Eye irritation</p> <p>Skin Irrit. = Skin irritation</p> <p>STOT RE = Specific target organ toxicity-repeated exposure</p> <p>Aquatic Acute = Hazardous to the aquatic environment (acute)</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
<b>Key literature references and sources for data</b>	<p>SDS from supplier. Source: European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a></p>
<b>Classification procedures according to Regulation (EC) 1272/2008</b>	<p>Acute Tox. 4 - H302, Eye Irrit. 2 - H319, Skin Irrit. 2 - H315, STOT RE 2 - H373, Aquatic Acute 1 - H400, Aquatic Chronic 2 - H411: Calculation method.</p>
<b>Revision comments</b>	<p>Revised classification. Revised sections: 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16.</p>

## ARBOKOL AG2 CURING AGENT

<b>Revision date</b>	28/02/2022
<b>Revision</b>	3
<b>Supersedes date</b>	15/05/2017
<b>SDS number</b>	10198
<b>SDS status</b>	Approved.
<b>Hazard statements in full</b>	H301 Toxic if swallowed. H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H361f Suspected of damaging fertility. H362 May cause harm to breast-fed children. H373 May cause damage to organs through prolonged or repeated exposure. H373 May cause damage to organs (Liver) through prolonged or repeated exposure. H373 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. 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.