



SAFETY DATA SHEET ARBOKOL AG2 CURING AGENT

According to the REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577, as amended.

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 (SI 2019 No. 720)

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Lact. - H362
STOT RE 2 - H373

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

2.2. Label elements

Hazard pictograms



Signal word

Warning

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Hazard statements	H302+H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation. H362 May cause harm to breast-fed children. 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	P201 Obtain special instructions before use. P260 Do not breathe vapours. P263 Avoid contact during pregnancy and while nursing. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P308+P313 IF exposed or concerned: Get medical advice/ attention. P332+P313 If skin irritation occurs: Get medical advice/ attention.
Supplemental label information	EUH208 Contains Thiram. May produce an allergic reaction.
Contains	Manganese dioxide, Alkanes, C14-17, chloro, 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

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

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1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters	< 3%
CAS number: 68515-40-2 EC number: 271-082-5	
Classification Not Classified	
Silicon dioxide, chemically prepared	< 3%
CAS number: 112945-52-5 EC number: 231-545-4	
Classification Not Classified	
Thiram	< 1%
CAS number: 137-26-8 EC number: 205-286-2 M factor (Acute) = 10 M factor (Chronic) = 10	
Classification 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	
Alkanes, C14-17, chloro	< 1%
CAS number: 85535-85-9 EC number: 287-477-0 M factor (Acute) = 100 M factor (Chronic) = 10	
Classification Lact. - H362 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
1,3-diphenylguanidine	< 1%
CAS number: 102-06-7 EC number: 203-002-1	
Classification Acute Tox. 3 - H301 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Repr. 2 - H361f STOT SE 3 - H335 Aquatic Chronic 2 - H411	

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

SECTION 4: First aid measures

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4.1. Description of first aid measures

General information	If in doubt, get medical attention promptly. Never give anything by mouth to an unconscious person.
Inhalation	Move affected person to fresh air at once. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Give milk instead of water if readily available. Get medical attention.
Skin contact	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.
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 any discomfort continues.

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

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

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray, fog or mist. Foam, carbon dioxide or dry powder.
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	Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m ³ . Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrous gases (NO _x). Manganese oxides. No unusual fire or explosion hazards noted.
Hazardous combustion products	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.
Special protective equipment for firefighters	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

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.
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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. Use only outdoors or in a well-ventilated area. 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.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

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

Long-term exposure limit (8-hour TWA): WEL 0.05 mg/m³ respirable fraction as Mn

Long-term exposure limit (8-hour TWA): WEL 0.2 mg/m³ inhalable fraction as Mn

Calcium carbonate

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ inhalable dust

Long-term exposure limit (8-hour TWA): WEL 4 mg/m³ respirable dust

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/m³

Silicon dioxide, chemically prepared

Silica, amorphous - Inhalable dust: Long-term exposure limit (8-hour TWA) WEL: 6 mg/m³, Respirable dust: Long-term exposure limit (8-hour TWA) WEL: 2.4 mg/m³

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WEL = Workplace Exposure Limit.

Manganese dioxide (CAS: 1313-13-9)

DNEL	Workers - Inhalation; Long term systemic effects: 0.2 mg/m ³ 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 ³
PNEC	STP; 100 mg/l

Oxydipropyl dibenzoate (CAS: 27138-31-4)

DNEL	Workers - Inhalation; Long term systemic effects: 8.8 mg/m ³ Workers - Inhalation; Short term systemic effects: 35.08 mg/m ³ 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 ³ Workers - Dermal; Long term systemic effects: 2.8 mg/kg/day
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Thiram (CAS: 137-26-8)

DNEL	Workers - Inhalation; Long term systemic effects: 0.118 mg/m ³ Workers - Inhalation; Short term systemic effects: 0.564 mg/m ³ 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

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

DNEL	Workers - Inhalation; Long term systemic effects: 6.7 mg/m ³ Workers - Dermal; Long term systemic effects: 47.9 mg/kg/day
PNEC	- 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

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

DNEL	Workers - Inhalation; Long term systemic effects: 0.33 mg/m ³ Workers - Dermal; Long term systemic effects: 0.47 mg/kg/day
PNEC	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

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation.

Eye/face protection

Chemical splash goggles. Personal protective equipment that provides appropriate eye and face protection should be worn.

Hand protection

Wear protective gloves. To protect hands from chemicals, wear gloves that are proven to be impervious to the chemical and resist degradation. 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.

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

Appearance	Paste.
Colour	Dark brown.

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Odour	Mild.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	Not applicable.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	1.77 @ 20 @ °C
Solubility(ies)	Not determined. Insoluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	Not determined.
Viscosity	7000 - 9000 Ps @ 20 @ °C
Explosive properties	Not considered to be explosive.
Oxidising properties	Not determined.

9.2. Other information

Other information 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

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects For this endpoint no toxicological data is available for the whole product.

Acute toxicity - oral

Summary Acute Tox. 4 Harmful if swallowed.

ATE oral (mg/kg) 1,025.7

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Summary Acute Tox. 4 Harmful if inhaled.

ATE inhalation (gases ppm) 9,515.75

ATE inhalation (vapours mg/l) 23.26

ATE inhalation (dusts/mists mg/l) 3.17

Skin corrosion/irritation

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

Serious eye damage/irritation

Serious eye damage/irritation Eye Irrit. 2 Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation The product contains a small amount of a sensitising substance which may cause an allergic reaction in sensitive individuals.

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

Reproductive toxicity - development

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure STOT RE 2 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.

Aspiration hazard

Aspiration hazard Not applicable.

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General information	Avoid contact during pregnancy/while nursing.
Inhalation	Harmful if inhaled. May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.
Ingestion	Harmful if swallowed. May cause stomach pain or vomiting.
Skin contact	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.
Eye contact	Causes serious eye irritation.
Acute and chronic health hazards	May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled. May cause harm to breast-fed children.
Route of exposure	Inhalation Oral Dermal
Target organs	Brain

Toxicological information on ingredients.

Manganese dioxide

Acute toxicity - oral

Summary	Harmful if swallowed.
Notes (oral LD₅₀)	LD ₅₀ >3480 mg/kg, Oral, Rat REACH dossier information.
ATE oral (mg/kg)	500.0

Acute toxicity - inhalation

Summary	Harmful if inhaled.
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Specific target organ toxicity - repeated exposure

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

Target organs	Brain
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Calcium carbonate

Acute toxicity - oral

Notes (oral LD₅₀)	LD ₅₀ >2000 mg/kg, Oral, Rat
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Acute toxicity - dermal

Notes (dermal LD₅₀)	LD ₅₀ >2000 mg/kg, Dermal, Rat
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Acute toxicity - inhalation

Notes (inhalation LC₅₀)	LC ₅₀ >3 mg/l, 4 hours, Dust/Mist Rat
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Skin corrosion/irritation

Skin corrosion/irritation	Causes skin irritation.
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Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye irritation.
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Oxydipropyl dibenzoate

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,914.0

Species Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2000 mg/kg, Dermal, Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 200.0

Species Rat

Notes (inhalation LC₅₀) 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 (LD₅₀ mg/kg) 15,800.0

Species Rat

ATE oral (mg/kg) 15,800.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 7,940.0

Species Rabbit

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ATE dermal (mg/kg) 7,940.0

Silicon dioxide, chemically prepared

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Notes (oral LD₅₀) LD₅₀ >5000 mg/kg, Oral, Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ >5000 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 5,000.0

Thiram

Acute toxicity - oral

Summary Harmful if swallowed.

Acute toxicity oral (LD₅₀ mg/kg) 1,850.0

Species Rat

ATE oral (mg/kg) 1,850.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2000 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Summary Harmful if inhaled.

Acute toxicity inhalation (LC₅₀ 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.

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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

Alkanes, C14-17, chloro

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,000.0

Species Rat

ATE oral (mg/kg) 4,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,800.0

Species Rat

ATE dermal (mg/kg) 2,800.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 48.17

Species Rat

Notes (inhalation LC₅₀) LC50 >48.17 mg/l, 1 hour, Vapour Rat

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

1,3-diphenylguanidine

Acute toxicity - oral

Summary Toxic if swallowed.

Acute toxicity oral (LD₅₀ mg/kg) 107.0

Species Rat

ATE oral (mg/kg) 107.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2000 mg/kg, Oral, Rabbit

Skin corrosion/irritation

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Skin corrosion/irritation	Causes skin irritation.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation. Rabbit
<u>Skin sensitisation</u>	
Skin sensitisation	May cause an allergic skin reaction.
<u>Reproductive toxicity</u>	
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
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	May cause respiratory irritation.

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 LC₅₀, 96 hours: Thiram: 0.046 - 1.20 1,3-Diphenylguanidine: 4.2 - 9.6 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 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 LC₅₀, 96 hours: >100 % v/v saturated solution, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >100 % v/v saturated solution, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, : >100 % v/v saturated solution, Desmodium subspicatus

Acute toxicity - microorganisms EC₅₀, 3 hours: >1000 mg/l, Activated sludge
NOEC, : 1000 mg/l, Activated sludge

Calcium carbonate

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >100 % v/v saturated solution, Oncorhynchus mykiss (Rainbow trout)

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Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >100 % v/v saturated solution, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: >14 mg/l, Desmodosmus subspicatus

Oxydipropyl dibenzoate

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 3.7 mg/l, Pimephales promelas (Fat-head Minnow)
NOEC, 96 hours: 1.2 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EL₅₀, 48 hours: 19.3 mg/l, Daphnia magna
NOELR, 48 hours: 2.2 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: 4.9 mg/l, Selenastrum capricornutum
EC₅₀, 96 hours: 3.6 mg/l, Selenastrum capricornutum

Acute toxicity - microorganisms EC₅₀, 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

Acute toxicity - fish LC₅₀, 96 hours: >1000 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 4.5 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 96 hours: >1000 ppm, Pseudokirchneriella subcapitata

Silicon dioxide, chemically prepared

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >10000 mg/l, Brachydanio rerio (Zebra Fish)

Acute toxicity - aquatic invertebrates EC₅₀, 24 hours: >1000 mg/l, Daphnia magna

Thiram

Acute aquatic toxicity

LE(C)₅₀ 0.01 < L(E)C₅₀ ≤ 0.1

M factor (Acute) 10

Acute toxicity - fish LC₅₀, 96 hours: 0.046 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 0.38 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 7 days: 1.6 mg/l, Lemna gibba

Chronic aquatic toxicity

NOEC 0.001 < NOEC ≤ 0.01

Degradability Non-rapidly degradable

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M factor (Chronic)	10
Chronic toxicity - fish early life stage	NOEC, 33 days: 4.6 µg/l, Pimephales promelas (Fat-head Minnow)
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 20 µg/l, Daphnia magna

Alkanes, C14-17, chloro

Acute aquatic toxicity

LE(C)₅₀	0.001 < L(E)C ₅₀ ≤ 0.01
M factor (Acute)	100
Acute toxicity - fish	LC ₅₀ , 96 hours: >5000 mg/l, Alburnus alburnus (Common bleak)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 0.006 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 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

1,3-diphenylguanidine

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 4.2 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 17.0 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 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

12.2. Persistence and degradability

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

Ecological information on ingredients.

Oxydipropyl dibenzoate

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

1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

Persistence and degradability Readily biodegradable

Thiram

Persistence and degradability Not readily biodegradable.

Biodegradation - Degradation 30%: 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

1,3-diphenylguanidine

Persistence and degradability Readily biodegradable

Biodegradation - Degradation 85%: 28 days

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.

Alkanes, C14-17, chloro

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

Partition coefficient log Kow: 5.47-8.01

1,3-diphenylguanidine

Bioaccumulative potential Bioaccumulation is unlikely.

12.4. Mobility in soil

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Mobility The product is insoluble in water.

Ecological information on ingredients.

Thiram

Mobility	Shows potential for adsorption to soil.
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
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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 HP10 Toxic for reproduction 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
UN No. (ADN)	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)

ARBOKOL AG2 CURING AGENT

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	(-)

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

ARBOKOL AG2 CURING AGENT

National regulations	<p>The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019 (as amended).</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>The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).</p> <p>The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 (SI 2020 No. 1577) (as amended).</p> <p>Health and Safety at Work etc. Act 1974 (as amended).</p>
Guidance	<p>Workplace Exposure Limits EH40.</p>
Health and environmental listings	<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

Abbreviations and acronyms used in the safety data sheet	<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>EC₅₀: 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>LC50: Lethal Concentration to 50 % of a test population.</p> <p>LD50: 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: The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577.</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>
Classification abbreviations and acronyms	<p>Acute Tox. = Acute toxicity</p> <p>Eye Irrit. = Eye irritation</p> <p>Lact. = Reproductive toxicity: effects on or via lactation</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>
Key literature references and sources for data	<p>SDS from supplier. Source: European Chemicals Agency, http://echa.europa.eu/</p>
Classification procedures according to SI 2019 No. 720	<p>Acute Tox. 4 - H302, Acute Tox. 4 - H332, Eye Irrit. 2 - H319, Skin Irrit. 2 - H315, Lact. - H362, STOT RE 2 - H373, Aquatic Acute 1 - H400, Aquatic Chronic 2 - H411: Calculation method.</p>
Revision comments	<p>Revised classification. Revised sections: 2, 3, 7, 11, 13, 15, 16.</p>
Revision date	<p>13/07/2022</p>

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Revision	5
Supersedes date	21/04/2022
SDS number	10198
SDS status	Approved.
Hazard statements in full	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.