



SAFETY DATA SHEET

ARBOKOL AG2 POURING GRADE CURING AGENT

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

1.1. Product identifier

Product name ARBOKOL AG2 POURING GRADE CURING AGENT

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

Identified uses Curing agent component of: Arbokol AG2 Pouring grade Polysulphide sealant

1.3. Details of the supplier of the safety data sheet

Supplier Adshead Ratcliffe & Co. Ltd.
 Derby Road, Belper
 Derbyshire.
 DE56 1WJ
 Tel. (+44) 01773 826661
 Fax. (+44) 01773 821215
 sds@arbo.co.uk

1.4. Emergency telephone number

Emergency telephone (+44) 01773 826661 (office hours only)

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 Sens. 1 - H317 Lact. - H362

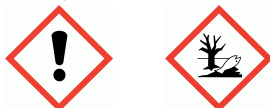
Environmental hazards Aquatic Chronic 2 - H411

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

Pictogram



Signal word

Warning

Hazard statements

H302 Harmful if swallowed.
 H317 May cause an allergic skin reaction.
 H362 May cause harm to breast-fed children.
 H411 Toxic to aquatic life with long lasting effects.

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Precautionary statements

P273 Avoid release to the environment.
 P280 Wear protective gloves.
 P301+P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
 P308+P313 IF exposed or concerned: Get medical advice/ attention.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains MANGANESE DIOXIDE, THIRAM, ALKANES, C14-17, CHLORO

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

MANGANESE DIOXIDE	30-60%
CAS number: 1313-13-9	EC number: 215-202-6
Classification	
Acute Tox. 4 - H302 Acute Tox. 4 - H332	
OXYDIPROPYL DIBENZOATE	10-30%
CAS number: 27138-31-4	EC number: 248-258-5
Classification	
Aquatic Chronic 3 - H412	
THIRAM	1-5%
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	
1,3-DIPHENYLGUANIDINE	<1%
CAS number: 102-06-7	EC number: 203-002-1
Classification	
Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Repr. 2 - H361f STOT SE 3 - H335 Aquatic Chronic 2 - H411	

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ALKANES, C14-17, CHLORO	<1%
CAS number: 85535-85-9	EC number: 287-477-0
M factor (Acute) = 1	M factor (Chronic) = 1
Classification	
Lact. - H362	
Aquatic Acute 1 - H400	
Aquatic Chronic 1 - H410	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	In all cases of doubt, or if symptoms persist, seek medical attention. 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. Get medical attention if any discomfort continues.
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	No specific symptoms known. The product contains a powder which is hazardous by inhalation. This is not relevant to the current physical form of the product which is not in a respirable form.
Ingestion	May cause stomach pain or vomiting.
Skin contact	May cause skin sensitisation or allergic reactions in sensitive individuals.
Eye contact	May cause temporary eye irritation.

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

Notes for the doctor	No specific recommendations.
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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.

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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 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.

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 Avoid spilling. Avoid contact with skin and eyes. Good personal hygiene procedures should be implemented.

7.2. Conditions for safe storage, including any incompatibilities

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

Storage class Miscellaneous hazardous material storage.

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

MANGANESE DIOXIDE (CAS: 1313-13-9)

DNEL

Workers - Inhalation; Long term systemic effects: 0.2 mg/m³
 Workers - Dermal; Long term systemic effects: 0.00414 mg/kg/day
 General population - Inhalation; Long term systemic effects: 0.043 mg/m³
 General population - Dermal; Long term systemic effects: 0.0021 mg/kg/day

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- 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

OXYDIPROPYL DIBENZOATE (CAS: 27138-31-4)

- DNEL**
- Workers - Inhalation; Long term systemic effects: 8.8 mg/m³
 - Workers - Inhalation; Short term systemic effects: 35.08 mg/m³
 - Workers - Dermal; Long term systemic effects: 10 mg/kg/day
 - Workers - Dermal; Short term systemic effects: 170 mg/kg/day
 - General population - Inhalation; Long term systemic effects: 8.69 mg/m³
 - General population - Inhalation; Short term systemic effects: 8.7 mg/l
 - General population - Dermal; Long term systemic effects: 0.22 mg/kg/day
 - General population - Dermal; Short term systemic effects: 80 mg/kg/day
 - General population - Oral; Long term systemic effects: 5.0 mg/kg/day
 - General population - Oral; Short term systemic effects: 80 mg/kg/day

- PNEC**
- Fresh water; 3.7 µg/l
 - Marine water; 0.37 µg/l
 - Intermittent release; 37 µg/l
 - STP; 10 mg/l
 - Sediment (Freshwater); 1.49 mg/kg
 - Sediment (Marinewater); 0.149 mg/kg
 - Soil; 1.0 mg/kg
 - Oral (food); 333 mg/kg

ALKANES, C14-17, CHLORO (CAS: 85535-85-9)

- DNEL**
- Workers - Inhalation; Long term systemic effects: 6.7 mg/m³
 - Workers - Dermal; Long term systemic effects: 47.9 mg/kg/day
 - General population - Inhalation; Long term systemic effects: 2 mg/m³
 - General population - Dermal; Long term systemic effects: 28.75 mg/kg/day
 - General population - Oral; Long term systemic effects: 0.58 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

8.2. Exposure controls

Protective equipment



Eye/face protection

Not generally required.

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Hand protection	It is recommended that chemical-resistant, impervious gloves are worn. Wear protective gloves made of the following material: Nitrile rubber. 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	When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet.
Respiratory protection	No specific recommendations.
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.
Odour	Mild.
Odour threshold	Not applicable. Not applicable.
pH	Not determined.
Melting point	Not applicable.
Initial boiling point and range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Evaporation factor	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	1.77 @ 20 @ °C
Solubility(ies)	Not determined. Insoluble in water.
Partition coefficient	log Pow: Thiram: 1.73
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not determined.
Viscosity	7000 - 9000 Ps @ 20 @ °C
Explosive properties	Not applicable.
Oxidising properties	Not determined.

9.2. Other information

Other information	None.
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SECTION 10: Stability and reactivity

10.1. Reactivity

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

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

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

ATE oral (mg/kg) 1,751.88

Skin corrosion/irritation

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

Respiratory sensitisation

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

Skin sensitisation

Skin sensitisation Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Does not contain any substances known to be mutagenic.

Carcinogenicity

Carcinogenicity Does not contain any substances known to be carcinogenic.

Reproductive toxicity

Reproductive toxicity - fertility Contains a substance which 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 Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Not applicable.

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Inhalation	No significant hazard at normal ambient temperatures. Heating may generate the following products: Toxic gases or vapours.
Ingestion	Harmful if swallowed. May cause stomach pain or vomiting.
Skin contact	May cause skin sensitisation or allergic reactions in sensitive individuals.
Eye contact	May cause irritation to eyes.
Acute and chronic health hazards	Product contains: manganese dioxide: which is: poison by intravenous route: moderately toxic. by subcutaneous route.

Toxicological information on ingredients.

MANGANESE DIOXIDE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >3480 mg/kg, Oral, Rat REACH dossier information.

Skin corrosion/irritation

Animal data Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation Not irritating.

Skin sensitisation

Skin sensitisation Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Negative.

Genotoxicity - in vivo Negative.

OXYDIPROPYL DIBENZOATE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 3295 - 5072 mg/kg, Oral, Rat

Acute toxicity - dermal

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

Acute toxicity - inhalation

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

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.

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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

SECTION 12: Ecological Information

Ecotoxicity The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity

Ecological information on ingredients.

MANGANESE DIOXIDE

Acute toxicity - fish LC₅₀, 96 hours: >100 %, Onchorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >100 %, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, : >100 %, Desmodemus subspicatus

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

OXYDIPROPYL DIBENZOATE

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

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 - 1.20 mg/l,

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >0.2 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 120 hours: 0.14 mg/l, Freshwater algae

Chronic aquatic toxicity

M factor (Chronic) 10

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1,3-DIPHENYLGUANIDINE

Acute toxicity - fish	LC ₅₀ , 96 hours: 9.6 mg/l, Lepomis macrochirus (Bluegill)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 17.0 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: 1.7 mg/l, Selenastrum capricornutum

ALKANES, C14-17, CHLORO

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C50 ≤ 1

M factor (Acute) 1

Acute toxicity - fish LC₅₀, 96 hours: >5000 mg/l, Alburnus alburnus (Common bleak)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 0.0077 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 96 hours: >3.2 mg/l, Selenastrum capricornutum

Chronic aquatic toxicity

M factor (Chronic) 1

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.

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 log Pow: Thiram: 1.73

Ecological information on ingredients.

OXYDIPROPYL DIBENZOATE

ARBOKOL AG2 POURING GRADE CURING AGENT

Partition coefficient log Kow: 3.9

ALKANES, C14-17, CHLORO

Bioaccumulative potential BCF: 6660, Onchorhynchus mykiss (Rainbow trout)

Partition coefficient log Kow: 5.47-8.01

12.4. Mobility in soil

Mobility The product is insoluble in water.

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 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 H5 - Harmful H13 - Sensitising H14 - 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. (MANGANESE DIOXIDE)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANGANESE DIOXIDE)

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANGANESE DIOXIDE)

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANGANESE DIOXIDE)

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

ICAO packing group III

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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

EU legislation Regulation (EC) 1907/2006 REACH (as amended).
 Regulation (EC) 1272/2008 CLP (as amended).

Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision comments	General review
Revision date	02/06/2017
Revision	3
Supersedes date	15/05/2017
SDS number	10178
Hazard statements in full	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. 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.