



SAFETY DATA SHEET

ARBOKOL AG2 POURING GRADE CURING AGENT

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

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

1.1. Product identifier

Product name ARBOKOL 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

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 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Lact. - H362 STOT RE 2 - H373

Environmental hazards Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

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.
 H317 May cause an allergic skin reaction.
 H362 May cause harm to breast-fed children.
 H373 May cause damage to organs (Brain) through prolonged or repeated exposure.
 H410 Very 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.
 P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.

Contains Manganese dioxide, Thiram, 1,3-diphenylguanidine, Alkanes, C14-17, chloro

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	25 - < 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	
1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters	5 - 10%
CAS number: 68515-40-2	EC number: 271-082-5
	REACH registration number: 01-2119519234-46-XXXX
Classification	
Not Classified	

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Thiram			< 3%
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		
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. 3 - H301			
Skin Irrit. 2 - H315			
Eye Irrit. 2 - H319			
Repr. 2 - H361f			
STOT SE 3 - H335			
Aquatic Chronic 2 - H411			
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			

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 and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. 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.

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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.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue.

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

General information May cause harm to breast-fed children.

Inhalation Harmful if inhaled. The product contains a powder which is hazardous by inhalation. May cause damage to organs (Brain) through prolonged or repeated exposure.

Ingestion May cause stomach pain or vomiting.

Skin contact Causes skin irritation. 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.

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/m³. Carbon monoxide (CO). Carbon dioxide (CO₂). 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 Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Remove contaminated clothing and rinse skin thoroughly with water. Contaminated work clothing should not be allowed out of the workplace.

6.2. Environmental precautions

Environmental precautions Avoid release to the environment. Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

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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. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes. Persons susceptible to allergic reactions should not handle this product. Good personal hygiene procedures should be implemented. 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/m³ (inhalable); WEL 0.05 mg/m³ (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/m³

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)

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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

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/m³
 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/m³
 Workers - Inhalation; Short term systemic effects: 0.564 mg/m³
 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)

DNEL Workers - Inhalation; Long term systemic effects: 0.33 mg/m³
 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

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

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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

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

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

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.
Odour	Mild.
Odour threshold	No information available.
pH	Not determined.
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.

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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 Pa s @ 20°C
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

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

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 There are no data available on this product.

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 4 Harmful if swallowed.

ATE oral (mg/kg) 1,066.99

Acute toxicity - dermal

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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Acute Tox. 4 Harmful if inhaled.

ATE inhalation (gases ppm) 10,395.01

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ATE inhalation (vapours mg/l)	25.41
ATE inhalation (dusts/mists mg/l)	3.41
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Skin Irrit. 2 Causes skin irritation.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Eye Irrit. 2 Causes serious eye irritation.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	Skin Sens. 1 May cause an allergic skin reaction.
<u>Germ cell mutagenicity</u>	
Summary	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met.
<u>Reproductive toxicity</u>	
Summary	Lact. May cause harm to breast-fed children.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	STOT RE 2 May cause damage to organs (Brain) through prolonged or repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Not relevant, due to the form of the product.
<u>General information</u>	
General information	May cause harm to breast-fed children.
Inhalation	Harmful if inhaled. May cause damage to organs (Brain) through prolonged or repeated exposure.
Ingestion	Harmful if swallowed. May cause stomach pain or vomiting.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Route of exposure	Oral Inhalation Dermal

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

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Summary Harmful if inhaled.

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

Calcium carbonate

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >2000 mg/kg, Oral, Rat

Acute toxicity - dermal

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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ >3 mg/l, 4 hours, Dust/Mist Rat

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

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

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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

ATE dermal (mg/kg) 7,940.0

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.

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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

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

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

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

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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

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

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

SECTION 12: Ecological information

Ecotoxicity No data for this product is available.

12.1. Toxicity

Acute aquatic toxicity

Summary Aquatic Acute 1 Very toxic to aquatic life.

Chronic aquatic toxicity

Summary Aquatic Chronic 1 Very toxic to aquatic life with long lasting effects.

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Ecological information on ingredients.

Manganese dioxide

Acute aquatic toxicity

Acute toxicity - fish	LC ₈₀ , 96 hours: >100 % v/v saturated solution, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC ₈₀ , 48 hours: >100 % v/v saturated solution, Daphnia magna
Acute toxicity - aquatic plants	EC ₈₀ , : >100 % v/v saturated solution, Desmodosmus subspicatus
Acute toxicity - microorganisms	EC ₈₀ , 3 hours: >1000 mg/l, Activated sludge NOEC, : 1000 mg/l, Activated sludge

Calcium carbonate

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: >100 % v/v saturated solution, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >100 % v/v saturated solution, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: >14 mg/l, Desmodosmus subspicatus

Oxydipropyl dibenzoate

Acute aquatic toxicity

Acute toxicity - fish	LC ₈₀ , 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	EC ₈₀ , 72 hours: 4.9 mg/l, Selenastrum capricornutum EC ₈₀ , 96 hours: 3.6 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	EC ₈₀ , 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	LC ₅₀ , 96 hours: >1000 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hours: 4.5 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: >1000 ppm, Pseudokirchneriella subcapitata

Thiram

Acute aquatic toxicity

LE(C)₅₀	0.01 < L(E)C50 ≤ 0.1
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M factor (Acute)	10
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.046 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 0.38 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 7 days: 1.6 mg/l, Lemna gibba
<u>Chronic aquatic toxicity</u>	
NOEC	0.001 < NOEC ≤ 0.01
Degradability	Non-rapidly degradable
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

Silicon dioxide, chemically prepared

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

1,3-diphenylguanidine

<u>Acute aquatic toxicity</u>	
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
<u>Chronic aquatic toxicity</u>	
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

<u>Acute aquatic toxicity</u>	
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

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

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

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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.

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 Not 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 HP13 Sensitising HP14 Ecotoxic Recommended EWC Code 08 04 09*

SECTION 14: Transport information

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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)

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

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Hazard Identification Number 90
(ADR/RID)

Tunnel restriction code (-)

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

National regulations	<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 Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).</p> <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>Health and Safety at Work etc. Act 1974 (as amended).</p> <p>EH40/2005 Workplace exposure limits.</p>
EU legislation	<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> <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>
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

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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>CAS: Chemical Abstracts Service.</p> <p>cATpE: Converted Acute Toxicity Point Estimate.</p> <p>DNEL: Derived No Effect Level.</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>GHS: Globally Harmonized System.</p> <p>IATA: International Air Transport Association.</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>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>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>Aquatic Acute = Hazardous to the aquatic environment (acute)</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p> <p>Eye Irrit. = Eye irritation</p> <p>Lact. = Reproductive toxicity: effects on or via lactation</p> <p>Repr. = Reproductive toxicity</p> <p>Skin Irrit. = Skin irritation</p> <p>Skin Sens. = Skin sensitisation</p> <p>STOT RE = Specific target organ toxicity-repeated exposure</p>
Key literature references and sources for data	SDS from supplier. Source: European Chemicals Agency, http://echa.europa.eu/
Classification procedures according to Regulation (EC) 1272/2008	Acute Tox. 4 - H302, Acute Tox. 4 - H332, Aquatic Acute 1 - H400, Aquatic Chronic 1 - H410, Eye Irrit. 2 - H319, Lact. - H362, Skin Irrit. 2 - H315, Skin Sens. 1 - H317, STOT RE 2 - H373: Calculation method.
Revision comments	Revised classification. Revised sections: 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
Revision date	08/03/2022
Revision	4
Supersedes date	02/06/2017

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SDS number	10178
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 (Brain) through prolonged or repeated exposure. H373 May cause damage to organs (Liver) through prolonged or repeated exposure. 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.