



SAFETY DATA SHEET ARBOKOL 2150 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 2150 CURING AGENT

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

Identified uses Curing agent component of: A two-part sealant

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

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 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	<p>H302 Harmful if swallowed.</p> <p>H315 Causes skin irritation.</p> <p>H319 Causes serious eye irritation.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H362 May cause harm to breast-fed children.</p> <p>H373 May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.</p> <p>H410 Very toxic to aquatic life with long lasting effects.</p>
Precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P263 Avoid contact during pregnancy and while nursing.</p> <p>P273 Avoid release to the environment.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P308+P313 IF exposed or concerned: Get medical advice/ attention.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p>
Contains	Manganese dioxide, Thiram, Alkanes, C14-17, chloro, 1,3-diphenylguanidine

2.3. Other hazards

This product contains alkanes, C14-17, chloro (medium-chain chlorinated paraffins; MCCP) 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		
Silicon dioxide, chemically prepared		<2%
CAS number: 112945-52-5	EC number: 231-545-4	REACH registration number: 01-2119379499-16-XXXX
Classification		
Not Classified		
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

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.

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Inhalation	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
Ingestion	Rinse mouth thoroughly with water. IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
Skin contact	Wash skin thoroughly with soap and water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves.

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

General information	May cause harm to breast-fed children. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure.
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	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.

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. Control run-off water by containing and keeping it out of sewers and watercourses.
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

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Personal precautions Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Do not breathe vapours. Avoid contact with skin and eyes. After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Wash contaminated clothing before reuse. Follow precautions for safe handling described in this safety data sheet. Keep unnecessary and unprotected personnel away from the spillage.

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

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 Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Avoid contact with skin and eyes. Do not breathe vapours. Persons susceptible to allergic reactions should not handle this product. Good personal hygiene procedures should be implemented. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product.

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

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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

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
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PNEC	Fresh water; 0.00046 mg/l marine water; 0.00046 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
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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
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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
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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
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8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation.

Eye/face protection

Wear eye protection. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

It is recommended that chemical-resistant, impervious gloves are worn. 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

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.

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

9.2. Other information

Other information	None.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	See the other subsections of this section for further details.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Not determined. Will not polymerise.
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10.4. Conditions to avoid

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

Summary Acute Tox. 4 Harmful if swallowed.

ATE oral (mg/kg) 1,065.94

Acute toxicity - dermal

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

Acute toxicity - inhalation

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

Skin corrosion/irritation

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

Serious eye damage/irritation

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 Skin Sens. 1 May cause an allergic skin reaction.

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.

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.

Aspiration hazard

Aspiration hazard Not relevant, due to the form of the product.

General information

May cause harm to breast-fed children. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure.

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Inhalation	No significant hazard at normal ambient temperatures. Heating may generate the following products: Toxic gases or vapours. 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.
Acute and chronic health hazards	May cause damage to organs (Brain) through prolonged or repeated exposure. May cause harm to breast-fed children.
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

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

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
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Species	Rat
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	LD ₅₀ >2000 mg/kg, Dermal, Rat
<u>Acute toxicity - inhalation</u>	
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
<u>Skin corrosion/irritation</u>	
Animal data	Oedema score: No oedema (0). Erythema/eschar score: No erythema (0). Not irritating.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Not irritating.
<u>Skin sensitisation</u>	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Negative.
<u>Reproductive toxicity</u>	
Reproductive toxicity - development	Fetotoxicity: - NOAEL: 500 mg/kg, Oral, Rat
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	NOAEL 1000 mg/kg, Oral, Rat

1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	15,800.0
Species	Rat
ATE oral (mg/kg)	15,800.0
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	7,940.0
Species	Rabbit
ATE dermal (mg/kg)	7,940.0

Thiram

Acute toxicity - oral

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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.

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

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Notes (dermal LD₅₀)	LD ₅₀ >5000 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	5,000.0

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

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
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	May cause respiratory irritation.

SECTION 12: Ecological information

Ecotoxicity No specific test data are available for the mixture.

12.1. Toxicity

Toxicity Very toxic to aquatic life with long lasting effects.

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.

Ecological information on ingredients.

Manganese dioxide

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 , : >100 % v/v saturated solution, Desmodium subspicatus
Acute toxicity - microorganisms	EC ₅₀ , 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, Desmodium subspicatus

Oxydipropyl dibenzoate

Acute aquatic toxicity

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Acute toxicity - fish	LC ₅₀ , 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	EL ₅₀ , 48 hours: 19.3 mg/l, Daphnia magna NOELR, 48 hours: 2.2 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 4.9 mg/l, Selenastrum capricornutum EC ₅₀ , 96 hours: 3.6 mg/l, Selenastrum capricornutum
Acute toxicity - microorganisms	EC ₅₀ , 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)C ₅₀ ≤ 0.1
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

Chronic aquatic toxicity

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

Acute aquatic toxicity

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

Alkanes, C14-17, chloro

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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
<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

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

Biodegradation	Water - Degradation 85%: 28 days The substance is readily biodegradable.
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1,2-Benzenedicarboxylic acid, benzyl isononyl alkyl esters

Persistence and degradability	Readily biodegradable
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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

Mobility The product is insoluble in water.

Ecological information on ingredients.

Thiram

Mobility Shows potential for adsorption to soil.

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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 (medium-chain chlorinated paraffins; MCCP) 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 HP13 Sensitising HP14 Ecotoxic Recommended EWC Code 08 04 09*

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 3077

UN No. (IMDG) 3077

UN No. (ICAO) 3077

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

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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.

Not applicable.

SECTION 15: Regulatory information

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

National regulations Control of Substances Hazardous to Health Regulations 2002 (as amended).
EH40/2005 Workplace exposure limits.
Health and Safety at Work etc. Act 1974 (as amended).
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, UK SI 2019/720. The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2020, UK SI 2020/1567.
The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, UK SI 2019/758, UK SI 2019/858 and UK SI 2019/1144. The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, UK SI 2020/1577.

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EU legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Health and environmental listings	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.
Authorisations (Annex XIV Regulation 1907/2006)	None of the substances in the product are listed.
Restrictions (Annex XVII Regulation 1907/2006)	No relevant restrictions.
Seveso Directive - Control of major accident hazards	E1 Lower-tier 100 tonnes Upper-tier 200 tonnes.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE: Acute Toxicity Estimate. DNEL: Derived No Effect Level. EC ₅₀ : 50% of maximal Effective Concentration. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. LC ₅₀ : Lethal Concentration to 50 % of a test population. IMDG: International Maritime Dangerous Goods. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). PBT: Persistent, Bioaccumulative and Toxic substance. PNEC: Predicted No Effect Concentration. vPvB: Very Persistent and Very Bioaccumulative.
Classification abbreviations and acronyms	Acute Tox. = Acute toxicity Aquatic Acute = Hazardous to the aquatic environment (acute) Aquatic Chronic = Hazardous to the aquatic environment (chronic) Eye Irrit. = Eye irritation Lact. = Reproductive toxicity: effects on or via lactation Repr. = Reproductive toxicity Skin Irrit. = Skin irritation Skin Sens. = Skin sensitisation STOT RE = Specific target organ toxicity-repeated exposure STOT SE = Specific target organ toxicity-single exposure
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, Skin Irrit. 2 - H315, Skin Sens. 1 - H317, Eye Irrit. 2 - H319, Lact. - H362, STOT RE 2 - H373, Aquatic Acute 1 - H400, Aquatic Chronic 1 - H410: Calculation method.

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Revision comments	Revised classification. Revised sections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16.
Revision date	24/05/2022
Revision	3
Supersedes date	02/06/2017
SDS number	10167
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.