ARBOFLEX® PU
LIQUID WATERPROOFING

SAFETY DATA SHEET
ARBOFLEX® PU SEALANT

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

1.1. Product identifier

Product name ARBOFLEX® PU SEALANT

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

Identified uses 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

Carlisle Construction Materials Ltd.
Lancaster House, Concorde Way,
Millennium Business Park,
Mansfield, Nottinghamshire,
NG19 7DW
United Kingdom
01623 627285
sds.arbo@ccm-europe.com

1.4. Emergency telephone number

Emergency telephone 01623 627285 (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 Resp. Sens. 1 - H334

Environmental hazards Not Classified

2.2. Label elements

Hazard pictograms

Signal word Danger

Hazard statements H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

P261 Avoid breathing vapours.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.

Supplemental label information

EUH212 Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.
As from 24 August 2023 adequate training is required before industrial or professional use.

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Contains 4,4'-methylenediphenyl diisocyanate, Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

2.3. Other hazards

Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Poly(Vinyl Chloride) **25 - < 50%**

CAS number: 9002-86-2

Classification
Not Classified

Reaction mass of ethylbenzene and xylene **3 - 7%**

CAS number: — EC number: 905-588-0 REACH registration number: 01-2119488216-32-XXXX

Classification
Flam. Liq. 3 - H226
Acute Tox. 4 - H312
Acute Tox. 4 - H332
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
STOT SE 3 - H335
STOT RE 2 - H373
Asp. Tox. 1 - H304

Triiron tetraoxide **< 5%**

CAS number: 1317-61-9 EC number: 215-277-5 REACH registration number: 01-2119457646-28-XXXX

Classification
Not Classified

Titanium dioxide **< 5%**

CAS number: 13463-67-7 EC number: 236-675-5 REACH registration number: 01-2119489379-17-XXXX

Classification
Carc. 2 - H351

Diiron trioxide **< 5%**

CAS number: 1309-37-1 EC number: 215-168-2 REACH registration number: 01-2119457614-35-XXXX

Classification
Not Classified

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Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics **< 5%**

CAS number: — EC number: 926-141-6 REACH registration number: 01-2119456620-43-XXXX

Classification
Asp. Tox. 1 - H304

Iron hydroxide oxide yellow **< 5%**

CAS number: 51274-00-1 EC number: 257-098-5 REACH registration number: 01-2119457554-33-XXXX

Classification
Not Classified

Calcium oxide **< 2.5%**

CAS number: 1305-78-8 EC number: 215-138-9 REACH registration number: 01-2119475325-36-XXXX

Classification
Skin Irrit. 2 - H315
Eye Dam. 1 - H318
STOT SE 3 - H335

4,4'-methylenediphenyl diisocyanate **< 1%**

CAS number: 101-68-8 EC number: 202-966-0 REACH registration number: 01-2119457014-47-XXXX

Classification
Acute Tox. 4 - H332
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
Skin Sens. 1 - H317
Carc. 2 - H351
STOT SE 3 - H335
STOT RE 2 - H373

Chromium (III) oxide **< 1%**

CAS number: 1308-38-9 EC number: 215-160-9 REACH registration number: 01-2119433951-39-XXXX

Classification
Not Classified

Carbon black		**< 1%**
CAS number: 1333-86-4	EC number: 215-609-9	REACH registration number: 01-2119384822-32-XXXX
Classification Not Classified		
Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate		**< 0.1%**
CAS number: —	EC number: 915-687-0	REACH registration number: 01-2119491304-40-XXXX
M factor (Acute) = 1	M factor (Chronic) = 1	
Classification Skin Sens. 1A - H317 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.

Inhalation IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Ingestion Rinse mouth thoroughly with water. Do not induce vomiting. Get medical attention if any discomfort continues.

Skin contact After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Wash contaminated clothing before reuse. f 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. Get medical attention if irritation persists after washing.

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 Persons previously sensitised to isocyanates may develop a cross-sensitisation reaction to other isocyanates.

Inhalation May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause inhalation hypersensitivity (occupational asthma) in sensitive individuals. May cause coughing and difficulties in breathing.

Ingestion Nausea, vomiting.

Skin contact May cause sensitisation by skin contact. Blistering may occur. Allergic rash. Itchiness.

Eye contact May irritate eyes.

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 In case of fire: Use an extinguishing media suitable for ordinary combustible material such as water or foam to extinguish.

Unsuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture

Specific hazards None inherent in this product.

Hazardous combustion products Oxides of nitrogen. Oxides of carbon. Carbon monoxide (CO). Isocyanates. Hydrogen cyanide (HCN).

5.3. Advice for firefighters

Protective actions during firefighting 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. Wear full protective clothing, including helmet, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid inhalation of vapours and contact with skin and eyes. Take off immediately all contaminated clothing and wash it before reuse. Ventilate area to dispel any residual vapours. Large Spillages: Mechanical ventilation or local exhaust ventilation may be required. This product must not be handled in a confined space without adequate ventilation. If ventilation is inadequate, suitable respiratory protection must be worn. Wear personal protective equipment (See section 8).

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 spillage. Place in a container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. Dispose of contents/container in accordance with national regulations.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13. See Section 11 for additional information on health hazards.

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. Avoid contact with oxidising agents. Use only outdoors or in a well-ventilated area. Do not breathe vapour/spray. Avoid contact with skin and eyes. Wash contaminated skin thoroughly after handling. Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. For personal protection, see Section 8.

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 Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from the following materials: Acids. Oxidising materials. Amines.

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

Poly(Vinyl Chloride)

Long-term exposure limit (8-hour TWA): WEL 10 mg/m3 (inhalable dust), WEL 4 mg/m3 (respirable dust)
WEL

Reaction mass of ethylbenzene and xylene

Long-term exposure limit (8-hour TWA): WEL 50 ppm 220 mg/m³
Short-term exposure limit (15-minute): WEL 100 ppm 441 mg/m³
Sk

Triiron tetraoxide

Iron salts (as Fe): Long-term exposure limit (8-hour TWA): WEL 1 mg/m3 Short-term exposure limit (15-minute): WEL 2 mg/m3

Titanium dioxide

Long-term exposure limit (8-hour TWA): WEL 10 mg/m3 (inhalable dust), WEL 4 mg/m3 (respirable dust)

Diiron trioxide

Iron oxide, fume (as Fe): Long-term exposure limit (8-hour TWA): WEL 5 mg/m³ Short-term exposure limit (15-minute): 10 mg/m³. Iron salts (as Fe): Long-term exposure limit (8-hour TWA): WEL 1 mg/m³ Short-term exposure limit (15-minute): 2 mg/m³.

Iron hydroxide oxide yellow

Iron salts (as Fe): Long-term exposure limit (8-hour TWA): WEL 1 mg/m3 Short-term exposure limit (15-minute): WEL 2 mg/m3

Calcium oxide

Long-term exposure limit (8-hour TWA): WEL 2 mg/m3; WEL 1 mg/m3 (respirable). Short-term exposure limit (15 minute): WEL 4 mg/m3 (respirable).

4,4'-methylenediphenyl diisocyanate

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m3(Sen)
Short-term exposure limit (15-minute): WEL 0.07 mg/m3(Sen)

Chromium (III) oxide

Chromium (III) compounds (as Cr): Long-term exposure limit (8-hour TWA): WEL 0.5 mg/m3

Carbon black

Long-term exposure limit (8-hour TWA): WEL 3.5 mg/m3 Short-term exposure limit (15-minute): WEL 7 mg/m3

WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

Reaction mass of ethylbenzene and xylene

Ingredient comments Ethylbenzene: Long-term exposure limit (8-hour TWA): WEL 50 ppm 220 mg/m³
Short-term exposure limit (15-minute): WEL 125 ppm 552 mg/m³ Sk

Biological limit values Xylene, o-, m-, p- or mixed isomers: 650 mmol methyl hippuric acid/mol creatinine in urine. Post shift.

DNEL
Workers - Inhalation; Long term systemic effects: 221 mg/m³
Workers - Inhalation; Short term systemic effects: 442 mg/m³
Workers - Dermal; Long term systemic effects: 212 mg/kg/day

PNEC
- Fresh water; 0.327 mg/l
- marine water; 0.327 mg/l
- Intermittent release; 0.327 mg/l
- STP; 6.58 mg/l
- Sediment (Freshwater); 12.46 mg/kg
- Sediment (Marinewater); 12.46 mg/kg
- Soil; 2.31 mg/kg

Calcium oxide (CAS: 1305-78-8)

DNEL
Workers - Inhalation; Long term local effects: 1 mg/m³
Workers - Inhalation; Short term local effects: 4 mg/m³

PNEC
- Fresh water; 0.37 mg/l
- marine water; 0.24 mg/l
- Intermittent release; 0.37 mg/l
- STP; 2.27 mg/l
- Soil; 817.4 mg/kg

4,4'-methylenediphenyl diisocyanate (CAS: 101-68-8)

Biological limit values Isocyanates: 1 µmol isocyanate-derived diamine/mol creatinine in urine. At the end of the period of exposure.

DNEL
Workers - Inhalation; Long term local effects: 0.05 mg/m³
Workers - Inhalation; Short term local effects: 0.1 mg/m³

PNEC
Fresh water; 1 mg/l
Intermittent release; 10 mg/l
marine water; 0.1 mg/l
STP; 1 mg/l
Soil; 1 mg/kg

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

DNEL
Workers - Inhalation; Long term systemic effects: 0.68 mg/m³
Workers - Dermal; Long term systemic effects: 0.5 mg/kg/day

PNEC
Fresh water; 0.002 mg/l
Intermittent release; 0.009 mg/l
marine water; 0.0002 mg/l
STP; 1 mg/l
Sediment (Freshwater); 1.05 mg/kg
Sediment (Marinewater); 0.11 mg/kg
Soil; 0.21 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist. In case of insufficient ventilation, wear suitable respiratory equipment.
Eye/face protection	Safety glasses with side shields. Use eye protection conforming to EN 166.
Hand protection	To protect hands from chemicals, gloves should comply with European Standard EN374. Gloves made from the following material(s) are recommended: Material: Polymer laminate, Thickness (mm): > 0.30, Breakthrough Time: > 8 hours. Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Other skin and body protection	Wear appropriate clothing to prevent skin contamination.
Hygiene measures	Do not eat, drink or smoke when using this product.
Respiratory protection	An exposure assessment may be needed to decide if a respirator is required. Based on the results of the exposure assessment, the following respirator is recommended: Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates. Use a respirator conforming to EN 140 or EN 136: filter types A & P.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Solid. Paste.
Colour	Grey.
Odour	Mild.
Odour threshold	No data available.
pH	Reacts with water.
Melting point	No data available.
Initial boiling point and range	137°C
Flash point	>= 70°C / 158°F Method: ISO Method
Evaporation rate	No data available.
Flammability (solid, gas)	Not classified.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 0.6 % Upper flammable/explosive limit: 8 %
Vapour pressure	No data available.
Vapour density	No data available.
Relative density	1.16
Solubility(ies)	Insoluble in water.
Partition coefficient	No data available.
Auto-ignition temperature	>=200°C

Decomposition Temperature	No data available.
Viscosity	No data available.
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	This material react with certain agents under certain conditions - see Section 10.5.

10.2. Chemical stability

Stability	Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Hazardous polymerisation will not occur.

10.4. Conditions to avoid

Conditions to avoid	Not known.

10.5. Incompatible materials

Materials to avoid	Alcohols. Amines. Alkali metals. Alkaline earth metals. Strong acids. Water. Reaction with water, alcohols, and amines is not hazardous if container can vent to the atmosphere to prevent pressure build up.

10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen. Isocyanates. Hydrogen cyanide (HCN).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Summary	Based on available data the classification criteria are not met.
Notes (oral LD_{50})	ATE (mixture) oral >5000 mg/kg

Acute toxicity - dermal

Summary	Based on available data the classification criteria are not met.
ATE dermal (mg/kg)	18,333.33

Acute toxicity - inhalation

Summary	Based on available data the classification criteria are not met.
ATE inhalation (vapours mg/l)	183.33

Skin corrosion/irritation

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

Serious eye damage/irritation

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

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Serious eye damage/irritation By analogy to a tested similar product.

Respiratory sensitisation

Summary May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation

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

Skin sensitisation The product contains small amounts of sensitsing substances which may cause an allergic reaction in sensitive individuals.

Germ cell mutagenicity

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

Carcinogenicity

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

Carcinogenicity The carcinogenicity classification for titanium dioxide is not applicable based on physical form (material is not a powder).

Reproductive toxicity

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

Specific target organ toxicity - single exposure

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

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

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

Inhalation May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing, chest tightness, feeling of chest pressure. Wheezing/breathing difficulties. Hoarseness

Ingestion Irritating. May cause nausea, stomach pain and vomiting.

Skin contact Causes mild skin irritation. May cause skin sensitisation or allergic reactions in sensitive individuals. Itchiness. Blistering may occur. Redness.

Eye contact May irritate eyes.

Acute and chronic health hazards Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

Toxicological information on ingredients.

Poly(Vinyl Chloride)

Acute toxicity - oral

Notes (oral LD_{50}) LD_{50} >5000 mg/kg, Oral,

Acute toxicity - dermal

Notes (dermal LD_{50}) LD_{50} >5000 mg/kg, Dermal,

Germ cell mutagenicity

Genotoxicity - in vitro Negative.

Specific target organ toxicity - repeated exposure

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STOT - repeated exposure	NOAEL 0.013 mg/l, Inhalation,

Reaction mass of ethylbenzene and xylene

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	3,523.0
Species	Rat

Acute toxicity - dermal

Summary	Harmful in contact with skin.
Acute toxicity dermal (LD_{50} mg/kg)	4,200.0
Species	Rabbit
Notes (dermal LD_{50})	LD_{50} >4200 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	1,100.0

Acute toxicity - inhalation

Summary	Harmful if inhaled.
Acute toxicity inhalation (LC_{50} vapours mg/l)	29.0
Species	Rat
ATE inhalation (vapours mg/l)	11.0

Skin corrosion/irritation

Animal data	Irritating. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye irritation. Rabbit

Specific target organ toxicity - single exposure

STOT - single exposure	May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Summary	May cause damage to organs (Hearing organs) through prolonged or repeated exposure.
STOT - repeated exposure	LOAEL 7.8 mg/l, Inhalation, Rat

Aspiration hazard

Aspiration hazard	May be fatal if swallowed and enters airways.

Triiron tetraoxide

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} 3700 mg/kg, Oral,

Acute toxicity - dermal

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Notes (dermal LD_{50})	LD_{50} 3100 mg/kg, Dermal,

Titanium dioxide

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	10,000.0
Species	Rat
Notes (oral LD_{50})	LD_{50} >10000 mg/kg, Oral, Rat
ATE oral (mg/kg)	10,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	10,000.0
Species	Rabbit
Notes (dermal LD_{50})	LD_{50} >10000 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	10,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	6.82
Species	Rat
Notes (inhalation LC_{50})	LC50 >6.82 mg/l, Inhalation, Rat
ATE inhalation (dusts/mists mg/l)	6.82

Carcinogenicity

Carcinogenicity	Suspected of causing cancer by inhalation.
Target organ for carcinogenicity	Lungs

Diiron trioxide

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} 3700 mg/kg, Oral,

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} 3100 mg/kg, Dermal,

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	5,000.0
Species	Rat
Notes (oral LD_{50})	LD_{50} >5000 mg/kg, Oral, Rat
ATE oral (mg/kg)	5,000.0

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Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	5,000.0
Species	Rabbit
Notes (dermal LD_{50})	LD_{50} >5000 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	5,000.0

Acute toxicity - inhalation

Notes (inhalation LC_{50})	LC50 estimated to be 20 - 50 mg/l (vapour)

Aspiration hazard

Aspiration hazard	May be fatal if swallowed and enters airways.

Iron hydroxide oxide yellow

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	10,000.0
Species	Rat
Notes (oral LD_{50})	LD_{50} >10000 mg/kg, Oral, Rat
ATE oral (mg/kg)	10,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	5.05
Species	Rat
Notes (inhalation LC_{50})	Read-across data.
ATE inhalation (dusts/mists mg/l)	5.05

Calcium oxide

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} >2000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} >2500 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Notes (inhalation LC_{50})	LC50 >6.05 mg/l, Inhalation, Rat Read-across data.

Skin corrosion/irritation

Animal data	Skin irritant (rabbit, OECD Guideline 404 (Acute Dermal Irritation / Corrosion))

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage. Rabbit

Germ cell mutagenicity

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Genotoxicity - in vitro	Negative.

Carcinogenicity

Carcinogenicity	There is no evidence that the product can cause cancer. Read-across data.

Specific target organ toxicity - single exposure

STOT - single exposure	May cause respiratory irritation.

4,4'-methylenediphenyl diisocyanate

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} >2000 mg/kg, Oral, Rat

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	9,400.0
Species	Rabbit
Notes (dermal LD_{50})	LD_{50} >9400 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	9,400.0

Acute toxicity - inhalation

Summary	Harmful if inhaled.

Skin corrosion/irritation

Summary	Causes skin irritation.
Skin corrosion/irritation	Skin irritant (rabbit, OECD Guideline 404 (Acute Dermal Irritation / Corrosion))

Serious eye damage/irritation

Summary	Causes serious eye irritation.

Respiratory sensitisation

Summary	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation

Summary	May cause an allergic skin reaction.
Skin sensitisation	Local Lymph Node Assay (LLNA) - Mouse: Sensitising.

Carcinogenicity

Summary	Suspected of causing cancer.
Carcinogenicity	NOAEC 1 mg/m³, Inhalation, Rat
Target organ for carcinogenicity	Lungs

Specific target organ toxicity - single exposure

Summary	May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Summary	May cause damage to organs (Respiratory system, lungs) through prolonged or repeated exposure if inhaled.
STOT - repeated exposure	LOAEC 1 mg/m³, Inhalation, Rat 1 year

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Target organs	Respiratory system, lungs

Chromium (III) oxide

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	5,000.0
Species	Rat
Notes (oral LD_{50})	LD_{50} >5000 mg/kg, Oral, Rat
ATE oral (mg/kg)	5,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} dust/mist mg/l)	5.41
Species	Rat
Notes (inhalation LC_{50})	LC50 >5.41 mg/l, Inhalation, Rat
ATE inhalation (dusts/mists mg/l)	5.41

Carbon black

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	8,000.0
Species	Rat
Notes (oral LD_{50})	LD_{50} >8000 mg/kg, Oral, Rat
ATE oral (mg/kg)	8,000.0

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	3,230.0
Species	Rat
ATE oral (mg/kg)	3,230.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	3,170.0
Species	Rat
ATE dermal (mg/kg)	3,170.0

Skin sensitisation

Summary	May cause an allergic skin reaction.
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

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SECTION 12: Ecological information

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

12.1. Toxicity

Toxicity There are no data for the product.

Acute aquatic toxicity

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

Chronic aquatic toxicity

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

Ecological information on ingredients.

Reaction mass of ethylbenzene and xylene

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 2.6 mg/l,
Acute toxicity - aquatic invertebrates	EC_{50}, 24 hours: 1 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 73 hours: 1.3 mg/l, Algae

Chronic aquatic toxicity

Chronic toxicity - fish early life stage	NOEC, 56 days: >1.3 mg/l, Oncorhynchus mykiss (Rainbow trout)
Chronic toxicity - aquatic invertebrates	NOEC, 7 days: 0.96 mg/l, Daphnia magna
Chronic toxicity - aquatic plants	NOEC, 73 hours: 0.44 mg/l, Green algae

Triiron tetraoxide

Acute aquatic toxicity

Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >50000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: >50000 mg/l, Algae

Titanium dioxide

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >100 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: >10000 mg/l, Diatom

Chronic aquatic toxicity

Chronic toxicity - aquatic plants	NOEC, 72 hours: 5600 mg/l, Diatom

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Diiron trioxide

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 48 hours: >1000 mg/l, Leuciscus idus (Golden orfe)

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Acute aquatic toxicity

Acute toxicity - fish	LL_{50}, 96 hours: >1000 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EL50, 48 hours: >1000 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EL50, 72 hours: >1000 mg/l, Algae

Chronic aquatic toxicity

Chronic toxicity - aquatic plants	NOELR, 72 hours: 1000 mg/l, Green algae

Iron hydroxide oxide yellow

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >100000 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 100 mg/l, Daphnia magna

Calcium oxide

Acute aquatic toxicity

Acute toxicity - fish	LC_{80}, 96 hours: 457 mg/l, Gasterosteus aculeatus (Three-spined stickleback) Read-across data.
Acute toxicity - aquatic invertebrates	LC_{80}, 96 hours: 158 mg/l, Crangon septemspinosa (sand shrimp) Read-across data.
Acute toxicity - aquatic plants	EC_{80}, 72 hours: 184.57 mg/l, Pseudokirchneriella subcapitata LOEC, 72 hours: 80 mg/l, Pseudokirchneriella subcapitata NOEC, 72 hours: 48 mg/l, Pseudokirchneriella subcapitata Read-across data.
Acute toxicity - microorganisms	EC_{80}, 3 hours: 300.4 mg/l, Activated sludge Read-across data.

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	LC_{80}, 14 days: 53.1 mg/l, Crangon septemspinosa (sand shrimp) NOEC, 14 days: 32 mg/l, Crangon septemspinosa (sand shrimp) Read-across data.

4,4'-methylenediphenyl diisocyanate

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >1000 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	EC_{50}, 24 hours: >1000 mg/l, Daphnia magna

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >=10 mg/l, Daphnia magna
Chronic toxicity - aquatic plants	NOEC, 112 days: >= 10 000 mg/L, macrophytes (Potamogeton crispus and Zannichellia palustris)

Chromium (III) oxide

Toxicity	No toxicity observed at limit of water solubility.

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

Acute aquatic toxicity

$LE(C)_{50}$	0.1 < L(E)C50 ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC_{50}, 96 hours: 0.9 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 1.68 mg/l, Desmodesmus subspicatus

Chronic aquatic toxicity

M factor (Chronic)	1
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 1 mg/l, Daphnia magna
Chronic toxicity - aquatic plants	NOEC, 72 hours: 0.22 mg/l, Desmodesmus subspicatus

12.2. Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

Reaction mass of ethylbenzene and xylene

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation 98%: 28 days

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Biodegradation	- Degradation 69%: 28 days

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

Persistence and degradability	Not readily biodegradable.
Biodegradation	- Degradation 38%: 28 days

12.3. Bioaccumulative potential

Partition coefficient No data available.

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Ecological information on ingredients.

Reaction mass of ethylbenzene and xylene

Bioaccumulative potential BCF: 25.9, Oncorhynchus mykiss (Rainbow trout) 56 days

Titanium dioxide

Bioaccumulative potential BCF: 9.6, Cyprinus carpio (Common carp) 42 days

Reaction mass of Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate

Bioaccumulative potential BCF: < 31.4, Cyprinus carpio (Common carp) 56 days

12.4. Mobility in soil

Mobility No data available.

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 This material does not contain any substances considered to be endocrine disruptors for environmental effects.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods Dispose of contents/container in accordance with national regulations. This material and its container must be disposed of as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Waste class HP13 Sensitising Recommended EWC Code 08 04 09*

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

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

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.
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).
Authorisations (Annex XIV Regulation 1907/2006)	None of the substances in the product are listed.
Restrictions (Annex XVII Regulation 1907/2006)	Entry number: 56 Entry number: 74

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the mixture.

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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)
Asp. Tox. = Aspiration hazard
Carc. = Carcinogenicity
Eye Dam. = Serious eye damage
Eye Irrit. = Eye irritation
Flam. Liq. = Flammable liquid
Resp. Sens. = Respiratory sensitisation
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

Resp. Sens. 1 - H334: Calculation method.

Revision date

22/07/2021

Revision

1

SDS number

20390

SDS status

Approved.

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Hazard statements in full

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H351 Suspected of causing cancer by inhalation.
H373 May cause damage to organs (Hearing organs) through prolonged or repeated exposure.
H373 May cause damage to organs (Respiratory system, lungs) through prolonged or repeated exposure if inhaled.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.