SAFETY DATA SHEET

ARBOTHANE® 1245

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

1.1 Product identifier

Product name : ARBOTHANE® 1245

Product description : Sealants Adhesive.

Other means of identification : Not available.

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

Identified uses
Sealants Adhesive.

Uses advised against	Reason
For professional users only.	-

1.3 Details of the supplier of the safety data sheet

CARLISLE®Adshead Ratcliffe & Co. Ltd
Unit 1, Park Lane Business Park, Park Lane , Kirkby-in-Ashfield, Nottingham, NG17 9GU, United Kingdom
T +44 (0)1623 627285

e-mail address of person responsible for this SDS : SDSQueries@carlisleccm.com

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : National Poisons Information Service (NPIS)
Tel: 0344 892 0111 (for healthcare professionals only)
Website: http://www.npis.org/
Members of Public in England, Scotland and Wales can contact NHS 111/NHS 24 by dialling 111. In Northern Ireland contact your local GP.

Supplier

Telephone number : +44 (0)1773 826661
(Office hours: 8.30 - 17.00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Resp. Sens. 1, H334

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



SECTION 2: Hazards identification

Signal word : Danger

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

Precautionary statements

Prevention : P261 - Avoid breathing vapor.

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

Storage : Not applicable.

Disposal : Not applicable

Supplemental label elements : Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : **As from August 24 2023 adequate training is required before industrial or professional use.**

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : Persons already sensitized to diisocyanates may develop allergic reactions when using this product.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Type
Ethene, chloro-, homopolymer	CAS: 9002-86-2	≥20 - ≤50	Not classified.	[2]
reaction mass of ethylbenzene and xylene	REACH #: 01-2119488216-32 EC: 905-588-0	≥3 - ≤7	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	[1]
titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7 Index: 022-006-00-2	<5	Not classified.	[2]
diiron trioxide	REACH #: 01-2119457614-35 EC: 215-168-2 CAS: 1309-37-1	<5	Not classified.	[2]
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	REACH #: 01-2119456620-43 EC: 926-141-6	<5	Asp. Tox. 1, H304 EUH066	[1]
carbon black, non respirable	REACH #:	<1	Not classified.	[2]

SECTION 3: Composition/information on ingredients

	01-2119384822-32 EC: 215-609-9 CAS: 1333-86-4			
4,4'-methylenediphenyl diisocyanate	REACH #: 01-2119457014-47 EC: 202-966-0 CAS: 101-68-8 Index: 615-005-00-9	<1	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	[1] [2]
calcium oxide	REACH #: 01-2119475325-36 EC: 215-138-9 CAS: 1305-78-8	<2	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335	[1] [2]
chromium (III) oxide	REACH #: 01-2119433951-39 EC: 215-160-9 CAS: 1308-38-9	<1	Not classified.	[2]
Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	REACH #: 01-2119491304-40 CAS: 1065336-91-5	<0.1	Skin Sens. 1A, H317 Repr. 2, H361f Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) **See Section 16 for the full text of the H statements declared above.**	[1]

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

SECTION 4: First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact : Slightly irritating to the eyes.

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma

Skin contact : May cause skin sensitization.

Ingestion : nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : No specific fire or explosion hazard.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides
hydrogen cyanide
isocyanates
nitrogen oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to British standard BS EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Ethene, chloro-, homopolymer	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** TWA 8 hours: 10 mg/m³. Form: inhalable dust. TWA 8 hours: 4 mg/m³. Form: Respirable dust.
titanium dioxide	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** TWA 8 hours: 10 mg/m³. Form: total inhalable. TWA 8 hours: 4 mg/m³. Form: respirable.
diiron trioxide	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [rouge]** TWA 8 hours: 10 mg/m³. Form: total inhalable. TWA 8 hours: 4 mg/m³. Form: respirable. **EH40/2005 WELs (United Kingdom (UK), 1/2020) [Iron oxide]** STEL 15 minutes: 10 mg/m³ (as Fe). Form: Fume. TWA 8 hours: 5 mg/m³ (as Fe). Form: Fume.
carbon black, non respirable	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** STEL 15 minutes: 7 mg/m³. TWA 8 hours: 3.5 mg/m³.
4,4'-methylenediphenyl diisocyanate	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [isocyanates, all, except methyl isocyanate]** Inhalation sensitizer. STEL 15 minutes: 0.07 mg/m³ (as -NCO). TWA 8 hours: 0.02 mg/m³ (as -NCO).
calcium oxide	**EH40/2005 WELs (United Kingdom (UK), 1/2020)** TWA 8 hours: 2 mg/m³. TWA 8 hours: 1 mg/m³. Form: Respirable fraction. STEL 15 minutes: 4 mg/m³. Form: Respirable fraction.
chromium (III) oxide	**EH40/2005 WELs (United Kingdom (UK), 1/2020) [chromium (III) compounds]** TWA 8 hours: 0.5 mg/m³ (as Cr).

Biological exposure indices

Product/ingredient name	Exposure indices
xylene	**EH40/2005 BMGVs (United Kingdom (UK), 8/2018) [Xylene, o-, m-, p- or mixed isomers]** BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.
4,4'-methylenediphenyl diisocyanate	**EH40/2005 BMGVs (United Kingdom (UK), 1/2020) [Isocyanates]** BMGV: 1 µmol/mol creatinine, diamine [in urine]. Sampling time: post task.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Result

SECTION 8: Exposure controls/personal protection

reaction mass of ethylbenzene and xylene	**DNEL - Workers - Long term - Inhalation** 221 mg/m³ Effects: Systemic **DNEL - Workers - Short term - Inhalation** 442 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 221 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 442 mg/m³ Effects: Local **DNEL - Workers - Long term - Dermal** 212 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 65.3 mg/m³ Effects: Systemic **DNEL - General population - Short term - Inhalation** 260 mg/m³ Effects: Systemic **DNEL - General population - Long term - Inhalation** 65.3 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 260 mg/m³ Effects: Local **DNEL - General population - Long term - Dermal** 125 ng/kg bw/day Effects: Systemic **DNEL - General population - Long term - Oral** 12.5 mg/kg bw/day Effects: Systemic
titanium dioxide	**DNEL - General population - Long term - Inhalation** 28 µg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 170 µg/m³ Effects: Local
carbon black, non respirable	**DNEL - General population - Long term - Inhalation** 0.06 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Inhalation** 1 mg/m³ Effects: Systemic
4,4'-methylenediphenyl diisocyanate	**DNEL - General population - Long term - Inhalation** 0.025 mg/m³ Effects: Local

SECTION 8: Exposure controls/personal protection

	DNEL - General population - Short term - Inhalation 0.05 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 0.05 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 0.1 mg/m³ Effects: Local
calcium oxide	**DNEL - General population - Long term - Inhalation** 1 mg/m³ Effects: Local **DNEL - Workers - Long term - Inhalation** 1 mg/m³ Effects: Local **DNEL - General population - Short term - Inhalation** 4 mg/m³ Effects: Local **DNEL - Workers - Short term - Inhalation** 4 mg/m³ Effects: Local
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 - General population - Long term - Oral** 0.18 mg/kg bw/day Effects: Systemic **DNEL - General population - Long term - Inhalation** 0.31 mg/m³ Effects: Systemic **DNEL - General population - Long term - Dermal** 0.9 mg/kg bw/day Effects: Systemic **DNEL - Workers - Long term - Inhalation** 1.27 mg/m³ Effects: Systemic **DNEL - Workers - Long term - Dermal** 1.8 mg/kg bw/day Effects: Systemic

PNECs

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	**Fresh water** 0.327 mg/l **Fresh water** 0.327 mg/l **Marine water** 0.327 mg/l **Sewage Treatment Plant** 6.58 mg/l **Fresh water sediment**

SECTION 8: Exposure controls/personal protection

	12.46 mg/kg **Marine water sediment** 12.46 mg/kg **Soil** 2.31 mg/kg
calcium oxide	**Fresh water** 0.37 mg/l **Marine water** 0.24 mg/l **Fresh water** 0.37 mg/l **Sewage Treatment Plant** 2.27 mg/l **Soil** 817.4 mg/l
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	**Fresh water** 0.002 mg/l **Fresh water - Sensitivity Distribution** 0.009 mg/l **Marine water** 0.0002 mg/l **Sewage Treatment Plant** 1 mg/l **Fresh water sediment** 1.05 mg/kg **Marine water sediment** 0.11 mg/kg **Soil** 0.21 mg/kg

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

SECTION 8: Exposure controls/personal protection

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
> 8 hours (breakthrough time):
polymer laminate
thickness > 0.3 mm
Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
full-face mask
half-face mask
organic vapor (Type A) and particulate filter

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Solid. [Paste.]

Color : Gray.

Odor : Mild.

Odor threshold : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range : 137°C (278.6°F)

Flammability (solid, gas) : Not available.

Upper/lower flammability or explosive limits : Lower: 0.6%
Upper: 8%

Flash point : Closed cup: >70°C (>158°F)

Auto-ignition temperature : >200°C (>392°F)

Decomposition temperature : Not available.

pH : Not applicable.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): Not available.

Solubility in water : Product reacts with water.

SECTION 9: Physical and chemical properties

Partition coefficient: n-octanol/ water	:	Not applicable.
Vapor pressure	:	Not available.
Evaporation rate	:	Not available.
Relative density	:	1.16
Vapor density	:	Not applicable.
Explosive properties	:	Not available.
Oxidizing properties	:	Not available.
Particle characteristics		
Median particle size	:	Not available.

9.2 Other information

Not available.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : alcohols
amines
Alkali metals
Alkaline earth metals
strong acids
Product reacts with 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 : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Decomposition products may include the following materials:
nitrogen oxides
hydrogen cyanide
Isocyanates

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	**Rat - Oral - LD50** 3523 mg/kg **Rabbit - Dermal - LD50** 12126 mg/kg **Rat - Inhalation - LC50 Vapor** 27124 mg/m³ [4 hours]
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	**Rat - Oral - LD50** >5000 mg/kg

SECTION 11: Toxicological information

	Rat - Dermal - LD50 >5000 mg/kg
carbon black, non respirable	**Rat - Oral - LD50** >15400 mg/kg Toxic effects: Behavioral - Somnolence (general depressed activity)
4,4'-methylenediphenyl diisocyanate	**Rat - Oral - LD50** 9200 mg/kg Toxic effects: Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Changes in Chemistry or Temperature - Body temperature decrease
calcium oxide	**Rat - Oral - LD50** >2000 mg/kg **Rabbit - Dermal - LD50** >2500 mg/kg **Rat - Inhalation - LC50 Dusts and mists** >6.04 mg/l [4 hours]
chromium (III) oxide	**Rat - Oral - LD50** >5000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** >5.41 mg/l [4 hours]
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	**Rat - Oral - LD50** 3230 mg/kg OECD [Acute Oral toxicity - Acute Toxic Class Method] **Rat - Dermal - LD50** >3170 mg/kg OECD [Acute Dermal Toxicity]

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
ARBOTHANE® 1245	N/A	22000.0	N/A	220.0	N/A
reaction mass of ethylbenzene and xylene	3523	1100	N/A	11	N/A
4,4'-methylenediphenyl diisocyanate	9200	N/A	N/A	11	N/A
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	3230	N/A	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	**Rabbit - Skin - Irritant**
titanium dioxide	**Human - Skin - Mild irritant** Duration of treatment/exposure: 72 hours Amount/concentration applied: 300 ug I

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information

Serious eye damage/eye irritation

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	**Rabbit - Eyes - Irritant**
4,4'-methylenediphenyl diisocyanate	**Rabbit - Eyes - Moderate irritant** Amount/concentration applied: 100 mg

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Product/ingredient name	Result
Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	**Guinea pig - skin** Sensitizing

Skin

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Respiratory

Conclusion/Summary [Product] : Resp. Sens. 1

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	STOT SE 3, H335 (Respiratory tract irritation)
4,4'-methylenediphenyl diisocyanate	STOT SE 3, H335 (Respiratory tract irritation)
calcium oxide	STOT SE 3, H335 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result

SECTION 11: Toxicological information

reaction mass of ethylbenzene and xylene	STOT RE 2, H373
4,4'-methylenediphenyl diisocyanate	STOT RE 2, H373

Aspiration hazard

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	ASPIRATION HAZARD - Category 1
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Slightly irritating to the eyes.

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma

Skin contact : May cause skin sensitization.

Ingestion : nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : respiratory tract irritation
coughing
sneezing
chest tightness or wheezing

Potential delayed effects : respiratory tract irritation
coughing
sneezing
chest tightness or wheezing

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result
reaction mass of ethylbenzene and xylene	**Acute - LC50 - Fresh water** Fish - *Oncorhynchus mykiss* 2.6 mg/l [96 hours]
titanium dioxide	**Acute - LC50 - Marine water** Fish - Mummichog - *Fundulus heteroclitus* >1000 mg/l [96 hours] Effect: Mortality **Acute - LC50 - Fresh water** Crustaceans - Water flea - *Ceriodaphnia dubia* - Neonate Age: <24 hours 3 mg/l [48 hours] Effect: Mortality
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	**Acute - LC50 - Fresh water** Fish - *Oncorhynchus mykiss* >1000 mg/l [96 hours] **Acute - EC50 - Fresh water** Daphnia - *Daphnia magna* >1000 mg/l [48 hours] **Acute - EC50 - Fresh water** Algae >1000 mg/l [72 hours]
carbon black, non respirable	**Acute - EC50 - Fresh water** OECD Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 37.563 mg/l [48 hours] Effect: Intoxication
4,4'-methylenediphenyl diisocyanate	**Acute - LC50 - Fresh water** Fish - *Brachydanio rerio* >1000 mg/l [96 hours] **Chronic - NOEC - Fresh water** Daphnia - *Daphnia magna* 10 mg/l [21 days]
calcium oxide	**Chronic - NOEC - Fresh water** Fish - Nile tilapia - *Oreochromis niloticus* - Juvenile (Fledgling, Hatchling, Weanling) Weight: 8.3 g 100 mg/l [46 days] Effect: Physiology **Acute - LC50 - Fresh water** Fish - *Gasterosteus aculeatus* 457 mg/l [96 hours] **Acute - EC50 - Fresh water** Algae - *Pseudokirchneriella subcapitata* 184.57 mg/l [72 hours] **Chronic - NOEC - Fresh water** Algae - *Pseudokirchneriella subcapitata* 48 mg/l [72 hours]

SECTION 12: Ecological information

chromium (III) oxide	**Acute - LC50 - Fresh water** OECD Fish - Fathead minnow - *Pimephales promelas* - Embryo Age: <32 40.116 mg/l [96 hours] Effect: Mortality
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 - LC50 - Fresh water** EU [Fish, Acute Toxicity Test] Fish - *Danio rerio* 0.9 mg/l [96 hours] **Acute - EC50 - Fresh water** OECD [Freshwater Alga and Cyanobacteria, Growth Inhibition Test] Algae 1.68 mg/l [72 hours] **Chronic - NOEC - Fresh water** Daphnia - *Daphnia magna* 1 mg/l [21 days]

Conclusion/Summary [Product] : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Product/ingredient name	Result
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	71% [28 days] - Readily

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
reaction mass of ethylbenzene and xylene	-	-	Readily
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	-	-	Readily
Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
4,4'-methylenediphenyl diisocyanate	4.51	200 [OECD 305 E]	Low
calcium oxide	-	2.34 [EPA 600/R-94/02]	Low

12.4 Mobility in soil

Soil/Water partition coefficient : Not available.

Mobility : Not available.

SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Ethene, chloro-, homopolymer	No	N/A	N/A	No	N/A	N/A	N/A
reaction mass of ethylbenzene and xylene	N/A	N/A	N/A	Yes	N/A	N/A	N/A
titanium dioxide	No	No	No	No	No	No	No
diiron trioxide	No	No	No	No	No	No	No
hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics	No	N/A	N/A	No	N/A	N/A	N/A
carbon black, non respirable	No	No	No	No	No	No	No
4,4'-methylenediphenyl diisocyanate	No	N/A	No	Yes	No	N/A	No
calcium oxide	No	No	No	No	No	No	No
chromium (III) oxide	No	No	No	No	No	No	No
Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	N/A	N/A	N/A	Yes	N/A	N/A	N/A

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

Waste catalogue

Waste code	Waste designation
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
4,4'-methylenediphenyl diisocyanate	<1	56 [Consumer products] 74

Labeling : **As from August 24 2023 adequate training is required before industrial or professional use.**

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

SECTION 15: Regulatory information

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.

Canada : Not determined.

Chile : Not determined.

China : Not determined.

Colombia : Not determined.

Eurasian Economic Union : **Russian Federation inventory**: Not determined.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : Not determined.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : Not determined.

Thailand : Not determined.

Turkey : Not determined.

United States : Not determined.

Viet Nam : Not determined.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = GB CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

SECTION 16: Other information

SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
Resp. Sens. 1, H334	Calculation method

Full text of abbreviated H statements

H226	Flammable liquid and vapor.
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.
H361f	Suspected of damaging fertility.
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.
EUH066	Repeated exposure may cause skin dryness or cracking.

Full text of classifications

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	AQUATIC HAZARD (ACUTE) - Category 1
Aquatic Chronic 1	AQUATIC HAZARD (LONG-TERM) - Category 1
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 2	CARCINOGENICITY - Category 2
Eye Dam. 1	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Repr. 2	TOXIC TO REPRODUCTION - Category 2
Resp. Sens. 1	RESPIRATORY SENSITIZATION - Category 1
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITIZATION - Category 1
Skin Sens. 1A	SKIN SENSITIZATION - Category 1A
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

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Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.