



WORLD-CLASS  
CHEMICALS

المكرم لصناعة المواد العازلة ذ.م.م  
Al Muqarram Insulation Material Industry L.L.C.

# MATERIAL SAFETY DATA SHEET

## DOLPHIN PU 45 SEALANT

Revision Date: 28<sup>th</sup> Sep 2022

Revision No. 01

Number of Pages: 15

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Details

Product Name : Dolphin PU 45 Adhesive Sealant  
Product Code : AMI PU 45  
Recommended Use : Construction and Industrial

### Company Details

Company Name : Al Muqarram Insulation Materials Industry L.L.C.  
Address : Industrial Area # 15, Post Box No. 24756  
Sharjah, United Arab Emirates

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Website : [www.muqarram.com](http://www.muqarram.com)

Emergency Telephone Number: 00971-549981925

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture:

#### 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

Respiratory sensitization, Category 1 H334. Full text of H- and. EUH- statements: See section 16

Adverse physicochemical, human health and environmental effects : No additional information available

### 2.2 Label elements:

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

#### Hazard pictograms (CLP)



GHS08

Signal word (CLP) : Danger

Contains : maleic anhydride, 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, fatty acids, C14-18 and C16-18-unsaturated, malleated

Hazard statements (CLP) : H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Use only in the well-ventilated areas.

**Precautionary Statements**

- P101 : If medical advice is needed, have product container or label at hand.  
 P102 : Keep out of reach of children.  
 P261 : Avoid breathing vapors, mist.  
 P284 : In case of inadequate ventilation wear respiratory protection.  
 P304 + P340 : **IF INHALED** Remove person to fresh air and keep comfortable for breathing.  
 P342 + P311 : If experiencing respiratory symptoms: Call a POISON CENTER, a doctor.  
 P501 : Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

**EUH-statements**

: EUH212 - Warning! Hazardous respirable dust may be formed when used. Do not breathe dust. (Except for black/brown/transparent product).

**Extra phrases**

: Persons already sensitized to diisocyanatos may develop allergic reactions when using this product.  
 Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.  
 This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e., type A1 according to standard EN 14387) is used. As from 24 August 2023 adequate training is required before industrial or professional use.

**2.3 Other Hazards:**

The product does not meet the PBT and vPvB classification criteria Contains no PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

Component	
4,4'-methylenediphenyl diisocyanate (101-68-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
fatty acids, C14-18 and C16-18-unsaturated, maleated (85711-46-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1%.

**3. COMPOSITION/INFORMATION ON INGREDIENT**

**3.1 Substances:**

Not applicable

**3.2 Mixtures:**

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Reaction mass of ethylbenzene and xylene	EC-No.: 905-588-0 REACH-no: 01-2119488216-32	$\geq 5 - < 10$	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304

Reaction mass of ethylbenzene and xylene	EC-No.: 905-588-0 REACH-no: 01-2119488216-32	$\geq 5 - < 10$	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304
4,4'-methylenediphenyl diisocyanate substance with national workplace exposure limit(s) (GB)	CAS-No.: 101-68-8 EC-No.: 202-966-0 EC Index-No.: 615-005-00-9 REACH-no: 01-2119457014-47	$\geq 0.1 - < 1$	Carc. 2, H351 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317
fatty acids, C14-18 and C16-18-unsaturated, maleated	CAS-No.: 85711-46-2 EC-No.: 288-306-2 REACH-no: 01-2119976378-19	$\geq 0.1 - < 1$	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
reaction mass of bis(1,2,2,6,6-pentamethyl-4- piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl- 4- piperidyl sebacate	CAS-No.: 1065336-91-5 EC-No.: 915-687-0 REACH-no: 01-2119491304-0	$< 0.1$	Skin Sens. 1A, H317 Repr. 2, H361f Aquatic Acute 1, H400 Aquatic Chronic 1, H410
maleic anhydride substance with national workplace exposure limit(s) (GB)	CAS-No.: 108-31-6 EC-No.: 203-571-6 EC Index-No.: 607-096-00-9	$< 0.1$	Acute Tox. 4 (Oral), H302 STOT RE 1, H372 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317

### 3.3 Specific Concentration Limits:

Name	Product Identifier	Specific Concentration Limits
4,4'-methylenediphenyl diisocyanate	CAS-No.: 101-68-8 EC-No.: 202-966-0 EC Index-No.: 615-005-00-9 REACH-no: 01-2119457014-47	( $0.1 \leq C \leq 100$ ) Resp. Sens. 1, H334 ( $5 \leq C \leq 100$ ) Eye Irrit. 2, H319 ( $5 \leq C \leq 100$ ) Skin Irrit. 2, H315 ( $5 \leq C \leq 100$ ) STOT SE 3, H335
maleic anhydride	CAS-No.: 108-31-6 EC-No.: 203-571-6 EC Index-No.: 607-096-00-9	( $0.001 \leq C \leq 100$ ) Skin Sens. 1A, H317

Full text of H- and EUH-statements: see section 16

## 4. FIRST AID MEASURES

### 4.1. Description of first aid measures:

- First-aid measures general** : If you feel unwell, seek medical advice.
- First-aid measures after inhalation** : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
- First-aid measures after skin contact** : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact** : 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.
- First-aid measures after ingestion** : Rinse mouth out with water. Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

**5.1. Extinguishing media:**

**Suitable Extinguishing Media** : Water spray. Dry powder. Foam. Carbon dioxide.

**Unsuitable Extinguishing Media** : None known.

**5.2. Special hazards arising from the substance or mixture:**

**Hazardous decomposition products in case of fire** : Toxic fumes may be released.

**5.3. Advice for firefighters:**

**Firefighting instructions** : Dilute toxic gases with water spray.

**Protection during firefighting** : Do not attempt to act without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment, and emergency procedures:**

**6.1.1 For non-emergency personnel:**

**Emergency procedures** : Ventilate spillage area.

**6.1.2 For emergency responders:**

**Protective equipment** : Do not attempt to act without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

**6.2 Environmental precautions:**

Avoid release to the environment.

**6.3 Methods and material for containment and cleaning up:**

**Methods for cleaning up** : Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

**Other information:** : Dispose of materials or solid residues at an authorized site.

**6.4 Reference to other sections**

For further information refer to section 13.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling:**

**Precautions for safe handling** : Ensure good ventilation of the workstation. Wear personal protective equipment.

**Hygiene measures** : Do not eat, drink, or smoke when using this product. Always wash hands after handling the product.

**7.2. Conditions for safe storage, including any incompatibilities:**

**Storage conditions** : Store tightly closed in a dry, cool, and well-ventilated place.

**Incompatible products** : Heat sources.

Maximum storage period : 1 year  
Packaging materials : aluminum.

**7.3. Specific end use(s):**

No additional information available.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters:**

**8.1.1 National occupational exposure and biological limit values:**

maleic anhydride (108-31-6)

United Kingdom - Occupational Exposure Limits

Local name : Maleic anhydride

WEL TWA (OEL TWA) [1] : 1 mg/m<sup>3</sup>

WEL STEL (OEL STEL) : 3 mg/m<sup>3</sup>

Remark : Sen (Capable of causing occupational asthma)

Regulatory reference : EH40/2005 (Fourth edition, 2020). HSE

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

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA) [1] : 0.02 mg/m<sup>3</sup>

WEL STEL (OEL STEL) : 0.07 mg/m<sup>3</sup>

**8.1.2 Recommended monitoring procedures:**

No additional information available.

**8.1.3 Air contaminants formed:**

No additional information available.

**8.1.4 DNEL and PNEC**

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

DNEL/DMEL (Workers):

Acute - local effects, inhalation : 0.1 mg/m<sup>3</sup>

Long-term - local effects, inhalation : 0.05 mg/m<sup>3</sup>

DNEL/DMEL (General population):

Acute - local effects, inhalation : 0.05 mg/m<sup>3</sup>

Long-term - local effects, inhalation : 0.025 mg/m<sup>3</sup>

PNEC (Water):

PNEC aqua (freshwater) : 1 mg/l

PNEC aqua (marine water) : 0.1 mg/l

PNEC (Soil):

PNEC soil : 1 mg/kg dwt

PNEC (STP):

PNEC sewage treatment plant : 1 mg/l

Reaction mass of ethylbenzene and xylene:

DNEL/DMEL (Workers):

Acute - systemic effects, inhalation : 442 mg/m<sup>3</sup>

Acute - local effects, inhalation : 442 mg/m<sup>3</sup>

Long-term - systemic effects, dermal : 212 mg/kg bodyweight/day

Long-term - systemic effects, inhalation : 221 mg/m<sup>3</sup>

<b>Long-term - local effects, inhalation</b>	: 221 mg/m <sup>3</sup>
<b>DNEL/DMEL (General population):</b>	
<b>Acute - systemic effects, inhalation</b>	: 260 mg/m <sup>3</sup>
<b>Acute - local effects, inhalation</b>	: 260 mg/m <sup>3</sup>
<b>Long-term - systemic effects, oral</b>	: 12.5 mg/kg bodyweight/day
<b>Long-term - systemic effects, inhalation</b>	: 65.3 mg/m <sup>3</sup>
<b>Reaction mass of ethylbenzene and xylene</b>	
<b>Long-term - systemic effects, dermal</b>	: 125 mg/kg bodyweight/day
<b>Long-term - local effects, inhalation</b>	: 65.3 mg/m <sup>3</sup>
<b>PNEC (Water)</b>	
<b>PNEC aqua (freshwater)</b>	: 0.327 mg/l
<b>PNEC aqua (marine water)</b>	: 0.327 mg/l
<b>PNEC aqua (intermittent, freshwater)</b>	: 0.327 mg/l
<b>PNEC (Sediment)</b>	
<b>PNEC sediment (freshwater)</b>	: 12.46 mg/kg dwt
<b>PNEC sediment (marine water)</b>	: 12.46 mg/kg dwt
<b>PNEC (Soil)</b>	
<b>PNEC soil</b>	: 2.31 mg/kg dwt
<b>PNEC (STP)</b>	
<b>PNEC sewage treatment plant</b>	: 6.58 mg/l

#### 8.1.5 Control banding

No additional information available.

### 8.2 Exposure Controls

#### 8.2.1 Appropriate Engineering Controls:

**Appropriate engineering controls** : Ensure good ventilation of the workstation.

#### 8.2.2 Personal protection equipment:

**Personal protection equipment symbol(s)**



##### 8.2.2.1 Eye and face protection:

Eye protection : Safety glasses

##### 8.2.2.2 Skin protection:

Skin and body protection : Wear suitable protective clothing  
Hand protection : Protective gloves

##### 8.2.2.3 Respiratory Protection:

In case of insufficient ventilation, wear suitable respiratory equipment.

##### 8.2.2.4 Thermal Hazards

No additional information available.

#### 8.2.3 Environmental exposure controls

Avoid release to the environment

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties:

Physical state	: Solid
Color	: Variable
Appearance	: Pasty
Odour	: solvent-like
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not applicable
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: > 60 °C
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapor pressure at 50 °C	: Not available
Density	: 1410 kg/m <sup>3</sup> (20°C)
Relative density	: 1.41 (20°C)
Relative vapor density at 20 °C	: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

### 9.2 Other Information

9.2.1. Information about physical hazard classes	: No additional information available
9.2.2. Other safety characteristics	
VOC content	: 10.19 % (130.94 g/l)

## 10. STABILITY AND REACTIVITY

10.1. Reactivity	: The product is non-reactive under normal conditions of use, storage, and transport.
10.2. Chemical stability	: Stable under normal conditions.
10.3. Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
10.4. Conditions to avoid	: Keep away from naked flames/heat.
10.5. Incompatible materials	: No additional information available

**10.6. Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Acute toxicity (oral)** : Not classified  
**Acute toxicity (dermal)** : Not classified  
**Acute toxicity (inhalation)** : Not classified

#### maleic anhydride (108-31-6)

LD50 dermal rabbit	2620 mg/kg bodyweight Animal: rabbit, Animal sex: female, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
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#### 4,4'-methylenediphenyl diisocyanate (101-68-8)

LD50 oral rat	> 2000 mg/kg bodyweight (Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rabbit	> 9400 mg/kg bodyweight (Equivalent or like OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat	0.49 mg/l air (Equivalent or like OECD 403, 4 h, Rat, Male / female, Read-across, Inhalation (aerosol), 14 day(s))

#### Reaction mass of ethylbenzene and xylene

LD50 dermal rabbit	12126 mg/kg bodyweight Animal: rabbit, Animal sex: male, Remarks on results: other:
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#### fatty acids, C14-18 and C16-18-unsaturated, malleated (85711-46-2)

LD50 oral rat	> 2000 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Read-across, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

#### reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate (1065336-91-5)

LD50 oral rat	3230 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), 95% CL: 2615 - 4247
LD50 dermal rat	> 3170 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation : Not Classified.  
 Serious eye damage/irritation : Not Classified.  
 Respiratory or skin sensitization : Not Classified.  
 Carcinogenicity : Not Classified.  
 Reproductive toxicity : Not Classified.  
 STOT-single exposure : Not Classified.  
 Skin corrosion/irritation : Not Classified.

#### 4,4'-methylenediphenyl diisocyanate (101-68-8)

STOT-single exposure	May cause respiratory irritation.
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**reaction mass of ethylbenzene and xylene**

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

**maleic anhydride (108-31-6)**

NOAEL (oral, rat, 90 days) : ≈ 10 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 452 (Chronic Toxicity Studies)

NOAEC (inhalation, rat, vapour, 90 days) : ≈ 0.0033 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

STOT-repeated exposure : Causes damage to organs (respiratory system) through prolonged or repeated exposure (inhalation).

**4,4'-methylenediphenyl diisocyanate (101-68-8)**

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

**Reaction mass of ethylbenzene and xylene**

LOAEL (oral, rat, 90 days) : 150 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Guideline: EPA OPP 82-1 (90- Day Oral Toxicity)

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

**fatty acids, C14-18 and C16-18-unsaturated, maleated (85711-46-2)**

NOAEL (oral, rat, 90 days) : 1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

**reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate (1065336-91-5)**

NOAEL (oral, rat, 90 days) : 300 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28- Day Oral Toxicity in Rodents), Guideline: EU Method B.7 (Repeated Dose (28 Days) Toxicity (Oral))

Aspiration hazard : Not classified

**11.2. Information on other hazards:** : No additional information available

**12. ECOLOGICAL INFORMATION**

**12.1. Toxicity**

Ecology – general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Not rapidly degradable

**maleic anhydride (108-31-6)**

LC50 - Fish [1]	75 mg/l Test organisms (species): Lepomis macrochirus
LC50 - Fish [2]	75 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	330 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 150 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
<b>4,4'-methylenediphenyl diisocyanate (101-68-8)</b>	
LC50 - Fish [1]	> 1000 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Read-across, Nominal concentration)
EC50 - Crustacea [1]	129.7 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)
<b>Reaction mass of ethylbenzene and xylene</b>	
EC50 - Crustacea [1]	> 3.4 mg/l Test organisms (species): Ceriodaphnia dubia
LOEC (chronic)	3.16 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	> 1.3 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '56 d'
<b>Fatty acids, C14-18 and C16-18-unsaturated, maleated (85711-46-2)</b>	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h - Algae [1]	> 2.76 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
<b>Reaction mass of bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate (1065336-91-5)</b>	
LC50 - Fish [1]	0.9 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 72h - Algae [1]	1.68 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	0.42 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
<b>12.2. Persistence and degradability</b>	
<b>PU 45 Sealant</b>	
Persistence and degradability	Contains non readily biodegradable component(s).
<b>4,4'-methylenediphenyl diisocyanate (101-68-8)</b>	
Persistence and degradability	not readily degradable in water.

**fatty acids, C14-18 and C16-18-unsaturated, maleated (85711-46-2)**

Persistence and degradability not readily degradable in water.

**12.3. Bioaccumulative potential**

**PU 45 Sealant**

Bioaccumulative potential Does not contain bioaccumulative component(s).

**4,4'-methylenediphenyl diisocyanate (101-68-8)**

BCF - Fish [1] 92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 4 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, GLP)

**4,4'-methylenediphenyl diisocyanate (101-68-8)**

Partition coefficient n-octanol/water (Log Pow) 4.51 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

**fatty acids, C14-18 and C16-18-unsaturated, maleated (85711-46-2)**

BCF - Other aquatic organisms [1] 10 (BCFBAF v3.01, Calculated value)

Partition coefficient n-octanol/water (Log Pow) > 4 (Experimental value, Other, 23 °C)

Bioaccumulative potential Bioaccumulation possible.

**12.4. Mobility in soil**

**4,4'-methylenediphenyl diisocyanate (101-68-8)**

Partition coefficient n-octanol/water (Log Pow) 4.51 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

**fatty acids, C14-18 and C16-18-unsaturated, maleated (85711-46-2)**

Organic Carbon Normalized Adsorption Coefficient (Log Koc) 2.41 – 5.38 (log Koc, Other, Calculated value)

**12.5. Results of PBT and vPvB assessment**

**PU 45 Sealant**

The product does not meet PBT and vPvB classification criterion.

**12.6. Endocrine disrupting properties**

No additional information available

**12.7. Other adverse effects**

No additional information available

**13. DISPOSAL CONSIDERATIONS**

**13.1. Waste treatment methods**

**Waste treatment methods** : Dispose of contents/container in accordance with licensed collector's sorting instructions.

<b>Sewage disposal recommendations</b>	: Do not discharge into drains or the environment.
<b>Additional information</b>	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
<b>Ecology - waste materials</b>	: Avoid release to the environment.
<b>European List of Waste (LoW) code</b>	: 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances 15 01 10* - packaging containing residues of or contaminated by dangerous substances

## 14. TRANSPORT INFORMATION

In accordance with ADR / IMDG / IATA / ADN / RID /

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number or ID number</b>				
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>14.2. UN proper shipping name</b>				
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>14.3. Transport hazard class(es)</b>				
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>14.4. Packing group</b>				
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>14.5. Environmental hazards</b>				
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

No supplementary information available.

### 14.6. Special precautions for user

<b>Overland transport</b>	: Not applicable
<b>Transport by sea</b>	: Not applicable
<b>Air Transport</b>	: Not applicable
<b>Inland Waterway Transport</b>	: Not applicable
<b>Rail Transport</b>	: Not applicable

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## 15. REGULATORY INFORMATION

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

#### 15.1.1 EU-Regulations

##### EU restriction list (REACH Annex XVII)

Reference code	Applicable on	Entry title or description
3(a)	reaction mass of ethylbenzene and xylene	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F

3(b)	reaction mass of ethylbenzene and xylene ; reaction mass of bis(1,2,2,6,6-pentamethyl- 4-piperidyl) sebacate and methyl 1,2,2,6,6- pentamethyl-4-piperidyl sebacate ; fatty acids, C14-18 and C16-18-unsaturated, maleated	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	reaction mass of bis(1,2,2,6,6-pentamethyl- 4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	reaction mass of ethylbenzene and xylene	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances, and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.
56.	4,4'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI)
56(a)	4,4'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI) isomers: 4,4'-Methylenediphenyl diisocyanate
74.	4,4'-methylenediphenyl diisocyanate	Diisocyanates, O = C=N-R-N = C=O, with R an aliphatic or aromatic hydrocarbon unit of unspecified length

Contains no substance on the REACH candidate list  
 Contains no REACH Annex XIV substances  
 Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.  
 Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants  
 Contains no substance subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.  
 Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.  
 VOC content : 10.19 % (130.94 g/l)  
 Contains no substance subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances.

#### 15.1.2 National regulations

No additional information available.

#### 15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

## 16. OTHER INFORMATION

Indication of changes			
Section	Changed Item	Change	Comments
	according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878		
2.2		Modified	
3.2		Modified	

Abbreviations and acronyms	
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
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class
Full text of H- and EUH- statements	
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhale.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 2	Carcinogenicity, Category 2
EUH212	Warning! Hazardous respirable dust may be formed when used. Do not breathe dust. (Except for black/brown/transparent product)
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
H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
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.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Repr. 2	Reproductive toxicity, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
Skin Sens. 1A	Skin sensitization, category 1A
Skin Sens. 1B	Skin sensitization, category 1B
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:**

Resp. Sens. 1	H334	Calculation method
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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.