



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008
This SDS is for generic information purposes and does not reflect required country specific information for OEL

ZWALUW CONSTRUCTION FIX D4
Supersedes Date: 17-Feb-2022

Revision date 08-Aug-2022
Revision Number 2.02

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

1.1. Product identifier

Product Name ZWALUW CONSTRUCTION FIX D4

Pure substance/mixture Mixture

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

Recommended use Adhesive

Uses advised against Consumer use.

1.3. Details of the supplier of the safety data sheet

Company Name

Bostik B.V.
Denariusstraat 11
4903 RC Oosterhout
The Netherlands
Tel: + 31 162 491 000

E-mail address SDS.box-EU@bostik.com

1.4. Emergency telephone number

Emergency Telephone 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Respiratory sensitisation	Category 1 - (H334)
Skin sensitisation	Category 1 - (H317)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity — single exposure	Category 3 - (H335)
Category 3 Respiratory irritation	
Specific target organ toxicity — repeated exposure	Category 2 - (H373)

2.2. Label elements

Contains Diphenylmethane-diisocyanate, isomers and homologues, 4,4'-Methylenediphenyl diisocyanate, o-(p-isocyanatobenzyl)phenyl isocyanate, 2,2'-methylenediphenyl diisocyanate; Dibutyltin dilaurate

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Signal word
Danger

Hazard statements

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
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
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - EU (§28, 1272/2008)

P201 - Obtain special instructions before use
P260 - Do not breathe vapours/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P312 - Call a POISON CENTER or doctor if you feel unwell
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P501 - Dispose of contents/ container to an approved waste disposal plant

Special provisions concerning the labelling of certain mixtures

Restricted to professional users. As from 24 August 2023 adequate training is required before industrial or professional use.

Additional information

This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

No information available.

PBT & vPvB

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	EC No.	CAS No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)	REACH registration number
Diphenylmethane-diisocyanate, isomers and	618-498-9	9016-87-9	STOT SE 3 (H335) STOT RE 2 (H373)	STOT SE 3 :: C>=5% Skin Irrit. 2 :: C>=5%	-	-	[7]

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homologues 40 - <80 %			Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Carc. 2 (H351) Acute Tox. 4 (H332)	Eye Irrit. 2 :: C>=5% Resp. Sens. 1 :: C>=0.1%			
4,4'-Methylenediphenyl diisocyanate 10 - <20 %	202-966-0	101-68-8	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)	STOT SE 3 :: C>=5% Skin Irrit. 2 :: C>=5% Eye Irrit. 2 :: C>=5% Resp. Sens. 1 :: C>=0.1%	-	-	01-2119457014- 47-XXXX
o-(p-isocyanatobenzyl)p henyl isocyanate 10 - <20 %	227-534-9	5873-54-1	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)	Eye Irrit. 2 :: C>=5% Resp. Sens. 1 :: C>=0.1% Skin Irrit. 2 :: C>=5% STOT SE 3 :: C>=5%	-	-	01-2119480143- 45-XXXX
2,2'-methylenediphenyl diisocyanate 0.1- <1 %	219-799-4	2536-05-2	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)	Eye Irrit. 2 :: C>=5% Resp. Sens. 1 :: C>=0.1% Skin Irrit. 2 :: C>=5% STOT SE 3 :: C>=5%	-	-	01-2119927323- 43-XXXX
Dibutyltin dilaurate 0.1- <1 %	201-039-8	77-58-7	STOT RE 1 (H372) Skin Corr. 1C (H314) Skin Sens. 1 (H317) Muta. 2 (H341) Repr. 1B (H360FD) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) STOT SE 1 (H370)	-	-	-	01-2119496068- 27-XXXX

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

NOTE [7] - No registration number is given for this substance because it is a polymer exempted from registration according to the provisions of Article 2(9) of REACH. All monomers or other substances within the polymer are registered or exempt from registration

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATE_{mix}) for classifying a mixture based on its components

Chemical name	EC No	CAS No	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Diphenylmethane-diiso cyanate, isomers and homologues	618-498-9	9016-87-9	-	-	1.5	-	-
4,4'-Methylenediphenyl diisocyanate	202-966-0	101-68-8	-	-	1.5	-	-
o-(p-isocyanatobenzyl) phenyl isocyanate	227-534-9	5873-54-1	-	-	1.5	-	-
2,2'-methylenediphenyl	219-799-4	2536-05-2	-	-	1.5	-	-

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Chemical name	EC No	CAS No	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
diisocyanate							
Dibutyltin dilaurate	201-039-8	77-58-7	-	-	-	-	-

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Notes

See section 16 for more information

Chemical name	Notes
4,4'-Methylenediphenyl diisocyanate - 101-68-8	C,2
o-(p-isocyanatobenzyl)phenyl isocyanate - 5873-54-1	C,2
2,2'-methylenediphenyl diisocyanate - 2536-05-2	C,2

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
Inhalation	May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor. Wash off immediately with soap and plenty of water for at least 15 minutes.
Ingestion	May produce an allergic reaction. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information. Avoid breathing vapours or mists.

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

Symptoms	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/or wheezing. Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation. Difficulty in breathing.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	May cause sensitisation in susceptible persons. Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by inhalation and skin contact. May cause sensitisation by skin contact.

Hazardous combustion products Carbon oxides. Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Hydrogen cyanide. Isocyanates.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapours or mists.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash it before reuse. Avoid

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breathing vapours or mists.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. Keep from freezing.

Recommended storage temperature Keep at temperatures between 10 and 35 °C.

7.3. Specific end use(s)

Specific use(s)
Adhesive.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

Other information Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Only European Community Occupational Exposure Limits will be shown in this document. Please refer to regional SDS for further information.

Derived No Effect Level (DNEL) No information available

Derived No Effect Level (DNEL)			
4,4'-Methylenediphenyl diisocyanate (101-68-8)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
worker Short term Systemic health effects	Dermal	50 mg/kg bw/d	
worker Short term Systemic health effects	Inhalation	0.1 mg/m ³	
worker Short term Local health effects	Dermal	28700 µg/cm ²	
worker Short term Local health effects	Inhalation	0.1 mg/m ³	
worker Long term Systemic health effects	Inhalation	0.05 mg/m ³	
worker Long term Local health effects	Inhalation	0.05 mg/m ³	

o-(p-isocyanatobenzyl)phenyl isocyanate (5873-54-1)			
Type	Exposure route	Derived No Effect Level	Safety factor

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		(DNEL)	
worker Long term Local health effects	Inhalation	0.05 mg/m ³	
worker Short term Local health effects	Inhalation	0.1 mg/m ³	

Dibutyltin dilaurate (77-58-7)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Long term Systemic health effects worker	Dermal	0,43 mg/kg bw/d	
Short term Systemic health effects worker	Dermal	2,05 mg/kg bw/d	
Long term Systemic health effects worker	Inhalation	0,02 mg/m ³	

Derived No Effect Level (DNEL)

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

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Consumer Short term Systemic health effects	Dermal	25 mg/kg bw/d	
Consumer Short term Systemic health effects	Inhalation	0.05 mg/m ³	
Consumer Short term Systemic health effects	Oral	20 mg/kg bw/d	
Consumer Short term Local health effects	Dermal	17200 µg/cm ²	
Consumer Short term Local health effects	Inhalation	0.05 mg/m ³	
Consumer Long term Systemic health effects	Inhalation	0.025 mg/m ³	
Consumer Long term Local health effects	Inhalation	0.025 mg/m ³	

Predicted No Effect Concentration (PNEC) No information available.
(PNEC)

Predicted No Effect Concentration (PNEC)

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

Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	1 mg/l
Marine water	0.1 mg/l
Soil	1 mg/kg dry weight
Sewage treatment plant	1 mg/l
Freshwater - intermittent	10 mg/l

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o-(p-isocyanatobenzyl)phenyl isocyanate (5873-54-1)	
Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	1 mg/l
Marine water	0.1 mg/l
Sewage treatment plant	1 mg/l
Soil	1 mg/kg dry weight
Freshwater - intermittent	10 mg/l

Dibutyltin dilaurate (77-58-7)	
Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	0,463 µg/l
Freshwater sediment	0,05 mg/kg dry weight
Marine water	0,0463 µg/l
Marine sediment	0,005 mg/kg dry weight
Microorganisms in sewage treatment	100 mg/l

8.2. Exposure controls

Engineering controls Ensure adequate ventilation, especially in confined areas. Vapours/aerosols must be exhausted directly at the point of origin.

Personal protective equipment

- Eye/face protection** Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.
- Hand protection** Nitrile rubber. Butyl rubber. Glove thickness > 0.4 mm. The breakthrough time of the gloves depends on the material and the thickness as well as the temperature. The breakthrough time for the mentioned glove material is in general greater than 60 min. Gloves must conform to standard EN 374
- Skin and body protection** Suitable protective clothing. Apron. Protective shoes or boots.
- Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.
- Recommended filter type:** Wear a respirator conforming to EN 140 with Type A/P2 filter or better. Organic gases and vapours filter conforming to EN 14387.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Colour	Brown
Odour	Slight.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flammability	Not applicable for liquids .	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
pH	No data available	None known.
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	4500 mPa s	@ 20 °C
Water solubility	No data available.	None known
Solubility(ies)	Insoluble	None known

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Partition coefficient	No data available	None known
Vapour pressure	No data available	None known
Relative density	No data available	None known
Bulk Density	No data available	
Liquid Density	1.14 g/cm ³	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

Solid content (%)	No information available	
VOC content		No data available

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerisation Hazardous polymerisation may occur.

10.4. Conditions to avoid

Conditions to avoid Excessive heat. Do not freeze.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapours.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

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Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause sensitisation in susceptible persons. (based on components). May cause irritation of respiratory tract. Harmful by inhalation.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause sensitisation by skin contact. Causes skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. May cause additional affects as listed under "Inhalation". Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing. Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.
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Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-dust/mist) 2.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Diphenylmethane-diisocyanate, isomers and homologues	LD50 > 10000 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus)	=1.5 mg/L (Rattus) 4 h
4,4'-Methylenediphenyl diisocyanate	=31600 mg/kg (Rattus) = 9200 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	=1.5 mg/L (Rattus) 4 h
o-(p-isocyanatobenzyl)phenyl isocyanate	LD50 >2000 mg/Kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	=1.5 mg/L (4h) Rat
2,2'-methylenediphenyl diisocyanate	LD50 > 2000 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	=1.5 mg/L (4h) Rat
Dibutyltin dilaurate	=2071 mg/kg (Rattus) OECD 401	> 2000 mg/kg (Rattus)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit				Mild skin irritant

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o-(p-isocyanatobenzyl)phenyl isocyanate (5873-54-1)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit				irritant

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

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

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	Eye	0.1 mL	24 hours	Non-irritant

Respiratory or skin sensitisation May cause sensitisation by inhalation. May cause sensitisation by skin contact.

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Species	Exposure route	Results
OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay	Mouse		sensitising

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

Method	Species	Exposure route	Results
OECD GD 39	Rat	Inhalation	Sensitizing

Germ cell mutagenicity Based on available data, the classification criteria are not met.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
Dibutyltin dilaurate	Muta. 2

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component Information

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Carcinogenic

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

Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Limited evidence of a carcinogenic effect

o-(p-isocyanatobenzyl)phenyl isocyanate (5873-54-1)

Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Carcinogenic

Chemical name	European Union
4,4'-Methylenediphenyl diisocyanate	Carc. 2
o-(p-isocyanatobenzyl)phenyl isocyanate	Carc. 2

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2,2'-methylenediphenyl diisocyanate	Carc. 2
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Reproductive toxicity Based on available data, the classification criteria are not met.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Dibutyltin dilaurate	Repr. 1B

STOT - single exposure May cause respiratory irritation.

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

Aspiration hazard Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea	M-Factor	M-Factor (long-term)
Diphenylmethane-diisocyanate, isomers and homologues 9016-87-9	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	CL50 (96h) >1000 mg/L (Danio rerio)	-	EC50 (24H) >1000 mg/L Daphnia magna		
4,4'-Methylenediphenyl diisocyanate 101-68-8	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	>1000 mg/l (Danio rerio)	-	EC50 (24H) >1000 mg/L Daphnia magna		
o-(p-isocyanatobenzyl) phenyl isocyanate 5873-54-1	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	LC50 (96 h) > 1000 mg/l (Danio rerio) OECD 203	-	EC50 (24H) >1000 mg/L Daphnia magna		
2,2'-methylenediphenyl diisocyanate 2536-05-2	-	LC50 (96 h) > 1000 mg/l (Danio rerio) OECD 203	-	-		
Dibutyltin dilaurate 77-58-7	EC50 1 (72h) mg/L (desmodesmus)	LC50: =2mg/L (48h, Oryzias latipes)	-	0,463 (48h) mg/L (daphnia magma)		

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	subspicatus)				
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12.2. Persistence and degradability

Persistence and degradability No information available.

Diphenylmethane-diisocyanate, isomers and homologues (9016-87-9)

Method	Exposure time	Value	Results
OECD Test No. 302C: Inherent Biodegradability: Modified MITI Test (II)	28 days	0% biodegradation	Not readily biodegradable

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

Method	Exposure time	Value	Results
OECD Test No. 302C: Inherent Biodegradability: Modified MITI Test (II)	28 days	0% biodegradation	Not readily biodegradable

Dibutyltin dilaurate (77-58-7)

Method	Exposure time	Value	Results
OECD Test No. 301F: Ready Biodegradability: Manometric Respirometry Test (TG 301 F)	39 days	23% biodegradation	Not readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
4,4'-Methylenediphenyl diisocyanate	4.51
Dibutyltin dilaurate	4.44

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
4,4'-Methylenediphenyl diisocyanate	The substance is not PBT / vPvB
o-(p-isocyanatobenzyl)phenyl isocyanate	The substance is not PBT / vPvB
2,2'-methylenediphenyl diisocyanate	The substance is not PBT / vPvB
Dibutyltin dilaurate	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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Waste from residues/unused products	Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.
Contaminated packaging	Do not reuse empty containers.
European Waste Catalogue	08 05 01* waste isocyanates 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
Other information	Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

Note: Keep from freezing.

Land transport (ADR/RID)

14.1 UN number or ID number	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	None

IMDG

14.1 UN number or ID number	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Marine pollutant	NP
14.6 Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	Not applicable

Air transport (ICAO-TI / IATA-DGR)

14.1 UN number or ID number	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special Provisions	None

Section 15: REGULATORY INFORMATION

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Check whether measures in accordance with Directive 94/33/EC for the protection of young people at work must be taken.

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)

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SVHC: Substances of Very High Concern for Authorisation:

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

EU-REACH (1907/2006) - Annex XVII - Substances subject to Restriction

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Chemical name	CAS No	Restricted substance per REACH Annex XVII
Diphenylmethane-diisocyanate, isomers and homologues	9016-87-9	56 74.
4,4'-Methylenediphenyl diisocyanate	101-68-8	56[a]. 75. 74.
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	56[b]. 75. 74.
Diisocyanates	--	74
2,2'-methylenediphenyl diisocyanate	2536-05-2	56[c]. 75. 74.
Dibutyltin dilaurate	77-58-7	30. 75. 20.

56

If product supplied to the general public with substance $\geq 0.1\%$, then gloves must be provided with the product

74 If product supplied to the industrial or professional users with total monomeric diisocyanates $\geq 0.1\%$, then its packaging must mention "As from 24 August 2023 adequate training is required before industrial or professional use"

Substance subject to authorisation per REACH Annex XIV

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)

Export Notification requirements

This product contains substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals

Chemical name	European Export/Import Restrictions per (EC) 689/2008 - Annex Number
Dibutyltin dilaurate - 77-58-7	I.1

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Persistent Organic Pollutants

Not applicable

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
Diphenylmethane-diisocyanate, isomers and homologues	RG 62

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9016-87-9	
4,4'-Methylenediphenyl diisocyanate 101-68-8	RG 62
o-(p-isocyanatobenzyl)phenyl isocyanate 5873-54-1	RG 62
2,2'-methylenediphenyl diisocyanate 2536-05-2	RG 62

Germany

Ordinance on Industrial Safety and Health - Germany - BetrSichV

No flammable liquids in accordance with BetrSichV

Water hazard class (WGK) obviously hazardous to water (WGK 2)

Netherlands

List of Carcinogenic, mutagenic and reproductive toxin substances in accordance with Inspectorate SZW (Netherlands)

Chemical name	Netherlands - List of Carcinogens
Dibutyltin dilaurate 77-58-7	Fertility (Category 1B); Development (Category 1B)

Denmark

Registration number(s) (P-no.) No information available

Norway

Registration number(s) (PRN-no.) No information available

15.2. Chemical safety assessment

Chemical Safety Assessments have been carried out by the Reach registrants for substances registered at >10 tpa. No Chemical Safety Assessment has been carried out for this mixture.

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
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
H341 - Suspected of causing genetic defects
H351 - Suspected of causing cancer
H360FD - May damage fertility. May damage the unborn child
H370 - Causes damage to organs
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

Notes assigned to an entry

Note C: Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers

Notes relating to the classification and labelling of mixtures

Note 2 : The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to

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the total weight of the mixture

SVHC: Substances of Very High Concern for Authorisation:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals
STOT RE: Specific target organ toxicity - Repeated exposure
STOT SE: Specific target organ toxicity - Single exposure
EWC: European Waste Catalogue
LOW: List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IATA: International Air Transport Association
ICAO: ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG: International Maritime Dangerous Goods
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail

Legend SECTION 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
AGW	Occupational exposure limit value	BGW	Biological limit value
Ceiling	Maximum limit value	*	Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
NIOSH (National Institute for Occupational Safety and Health)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set

Prepared By Product Safety & Regulatory Affairs

Revision date 08-Aug-2022

Training Advice AS FROM 24 AUGUST 2023 ADEQUATE TRAINING IS REQUIRED BEFORE INDUSTRIAL OR PROFESSIONAL USE

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Further information No information available

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet