SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

PU CONSTRUCT 1.1

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

1.1. Product identifier

Product name : PU CONSTRUCT 1.1
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Sealing compound

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Novatio*
Industrielaan 5B
B-2250 Olen
☎ +32 14 25 76 40
🖷 +32 14 22 02 66
info@novatio.be
*NOVATIO is a registered trademark of Novatech International N.V.

Manufacturer of the product

Novatech International N.V.
Industrielaan 5B
B-2250 Olen
☎ +32 14 85 97 37
🖷 +32 14 85 97 38
info@novatech.be

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Carc.	category 2	H351: Suspected of causing cancer.
Resp. Sens.	category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens.	category 1	H317: May cause an allergic skin reaction.
Skin Irrit.	category 2	H315: Causes skin irritation.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
STOT SE	category 3	H335: May cause respiratory irritation.
Aquatic Chronic	category 3	H412: Harmful to aquatic life with long lasting effects.

2.2. Label elements

Contains: 4,4'-methylenediphenyl diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; 2,2'-methylenediphenyl diisocyanate.

Signal word Danger

H-statements

H351 Suspected of causing cancer.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

P-statements

P280 Wear protective gloves, protective clothing and eye protection/face protection.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Supplemental information

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

2.3. Other hazards

No other hazards known

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark	M-factors and ATE
4,4'-methylenediphenyl diisocyanate 01-2119457014-47	101-68-8 202-966-0	7%≤C<8%	Carc. 2; H351 Resp. Sens. 1; H334 Skin Sens. 1; H317 Acute Tox. 4; H332 STOT RE 2; H373 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 Resp. Sens. 1; H334: C≥0.1%, (CLP Annex VI (ATP 1)) Skin Irrit. 2; H315: C≥5%, (CLP Annex VI (ATP 1)) Eye Irrit. 2; H319: C≥5%, (CLP Annex VI (ATP 1)) STOT SE 3; H335: C≥5%, (CLP Annex VI (ATP 1))	(1)(2)(10)	Constituent	
o-(p-isocyanatobenzyl)phenyl isocyanate 01-2119480143-45	5873-54-1 227-534-9	7%≤C<8%	Carc. 2; H351 Resp. Sens. 1; H334 Skin Sens. 1; H317 Acute Tox. 4; H332 STOT RE 2; H373 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	(1)(2)(10)	Constituent	
di-"isononyl" phthalate 01-2119430798-28	28553-12-0 249-079-5	6%≤C<7%		(2)(10)	Constituent	
2,2'-dimorpholinyldiethyl ether 01-2119969278-20	6425-39-4 229-194-7	1%≤C<1.5%	Eye Irrit. 2; H319	(1)(10)	Constituent	
diethylmethylbenzenediamine 01-2119486805-25	68479-98-1 270-877-4	0.8% ≤C<0.9%	Acute Tox. 4; H312 Acute Tox. 4; H302 STOT RE 2; H373 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(10)	Constituent	M: 1 (Acute, BIG)
2,2'-methylenediphenyl diisocyanate 01-2119927323-43	2536-05-2 219-799-4	0.1% ≤C<0.15%	Carc. 2; H351 Resp. Sens. 1; H334 Skin Sens. 1; H317 Acute Tox. 4; H332 STOT RE 2; H373 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	(1)(2)(10)	Constituent	

(1) For H- and EUH-statements in full: see section 16
(2) Substance with a Community workplace exposure limit
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1. Description of first aid measures

General:
Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

After inhalation:
Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

After skin contact:
If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.

After ingestion:
Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:
Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

After skin contact:
Tingling/irritation of the skin.

After eye contact:
Irritation of the eye tissue.

After ingestion:
No effects known.

4.2.2 Delayed symptoms
No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:
Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.
Major fire: Class B foam (alcohol-resistant), Water spray if puddle cannot expand.

5.1.2 Unsuitable extinguishing media:
Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.
Major fire: Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

5.3. Advice for firefighters

5.3.1 Instructions:
Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:
Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No naked flames.

6.1.1 Protective equipment for non-emergency personnel
See section 8.2

6.1.2 Protective equipment for emergency responders
Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing
See section 8.2

6.2. Environmental precautions

Contain released product. Dam up the solid spill. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Solid spill: cover with absorbent material. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See section 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Keep container tightly closed. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:
Meet the legal requirements.

7.2.2 Keep away from:
Heat sources.

7.2.3 Suitable packaging material:
No data available

7.2.4 Non suitable packaging material:
No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Belgium

4,4'-Diisocyanate de diphénylméthane (MDI)	Time-weighted average exposure limit 8 h	0.005 ppm
	Time-weighted average exposure limit 8 h	0.052 mg/m³

France

4,4'-Diisocyanate de diphénylméthane	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	0.01 ppm
	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	0.1 mg/m³
	Short time value (VL: Valeur non réglementaire indicative)	0.02 ppm
	Short time value (VL: Valeur non réglementaire indicative)	0.2 mg/m³

Germany

2,2'-Methylendiphenyldiisocyanat	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m³
4,4'-Methylendiphenyldiisocyanat	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m³
o-(p-Isocyanatobenzyl)phenylisocyanat	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m³

Austria

Diphenylmethan-diisocyanat (alle Isomeren): Diphenylmethan-4,4'-diisocyanat Diphenylmethan-2,2'-diisocyanat Diphenylmethan-2,4'-diisocyanat	Tagesmittelwert (MAK)	0.005 ppm
	Tagesmittelwert (MAK)	0.05 mg/m³
	Kurzzeitwert 5(Mow) 8x (MAK)	0.01 ppm
	Kurzzeitwert 5(Mow) 8x (MAK)	0.1 mg/m³

UK

Diisononyl phthalate	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	5 mg/m³
Isocyanates, all (as -NCO) Except methyl isocyanate	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.02 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	0.07 mg/m³

USA (TLV-ACGIH)

Methylene bisphenyl isocyanate	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.005 ppm

b) National biological limit values

If limit values are applicable and available these will be listed below.

UK

Isocyanates (applies to HDI, IPDI, TDI and MDI) (isocyanate-derived diamine)	Urine: at the end of the period of exposure	1 µmol/mol creatinine	

8.1.2 Sampling methods

Product name	Test	Number
4,4-Methylene Bisphenyl Isocyanate (MDI) (Isocyanates)	NIOSH	5521
4,4'-Methylenebis(phenylisocyanate)	NIOSH	5525
4,4-Methylenediphenyl isocyanate (MDI)	NIOSH	5522
Isocyanates	NIOSH	5521
Isocyanates	NIOSH	5522
Methylene Bisphenyl Isocyanate - (MDI)	OSHA	18
Methylene Bisphenyl Isocyanate (MDI)	OSHA	47
Methylene Bisphenyl Isocyanate	OSHA	33

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 Threshold values

DNEL/DMEL - Workers

4,4'-methylenediphenyl diisocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.05 mg/m³	
	Acute local effects inhalation	0.1 mg/m³	

o-(p-isocyanatobenzyl)phenyl isocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.05 mg/m³	
	Acute local effects inhalation	0.1 mg/m³	

di-''isononyl'' phthalate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	51.72 mg/m³	
	Long-term systemic effects dermal	366 mg/kg bw/day	

2,2'-dimorpholinyldiethyl ether

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	7.28 mg/m³	
	Long-term systemic effects dermal	1 mg/kg bw/day	

diethylmethylbenzenediamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.13 mg/m³	
	Long-term systemic effects dermal	1 mg/kg bw/day	

2,2'-methylenediphenyl diisocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.05 mg/m³	
	Acute local effects inhalation	0.1 mg/m³	

DNEL/DMEL - General population

4,4'-methylenediphenyl diisocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.025 mg/m³	
	Acute local effects inhalation	0.05 mg/m³	

o-(p-isocyanatobenzyl)phenyl isocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.025 mg/m³	
	Acute local effects inhalation	0.05 mg/m³	

di-''isononyl'' phthalate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	15.3 mg/m³	
	Long-term systemic effects dermal	220 mg/kg bw/day	
	Long-term systemic effects oral	4.4 mg/kg bw/day	

2,2'-dimorpholinyldiethyl ether

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.8 mg/m³	
	Long-term systemic effects dermal	0.5 mg/kg bw/day	
	Long-term systemic effects oral	0.5 mg/kg bw/day	

diethylmethylbenzenediamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.1 mg/m³	
	Long-term systemic effects dermal	1 mg/kg bw/day	
	Long-term systemic effects oral	0.1 mg/kg bw/day	

2,2'-methylenediphenyl diisocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.025 mg/m³	
	Acute local effects inhalation	0.05 mg/m³	

PNEC

4,4'-methylenediphenyl diisocyanate

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water (intermittent releases)	10 mg/l	
STP	1 mg/l	
Soil	1 mg/kg soil dw	

o-(p-isocyanatobenzyl)phenyl isocyanate

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water (intermittent releases)	10 mg/l	
Fresh water (intermittent releases)	10 mg/l	
STP	1 mg/l	
Soil	1 mg/kg soil dw	

di-''isononyl'' phthalate

Compartments	Value	Remark
Soil	30 mg/kg soil dw	

2,2'-dimorpholinyldiethyl ether

Compartments	Value	Remark
Fresh water	0.1 mg/l	
Marine water	0.01 mg/l	
Fresh water (intermittent releases)	1 mg/l	
STP	100 mg/l	
Fresh water sediment	8.2 mg/kg sediment dw	
Marine water sediment	0.82 mg/kg sediment dw	
Soil	1.58 mg/kg soil dw	
Oral	10 mg/kg food	

diethylmethylbenzenediamine

Compartments	Value	Remark
Fresh water	0.001 mg/l	
Marine water	0 mg/l	
Fresh water (intermittent releases)	0.005 mg/l	
STP	17 mg/l	
Fresh water sediment	0.029 mg/kg sediment dw	
Marine water sediment	0.003 mg/kg sediment dw	
Soil	5.6 µg/kg soil dw	
Oral	2 mg/kg food	

2,2'-methylenediphenyl diisocyanate

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water (intermittent releases)	10 mg/l	
STP	1 mg/l	
Soil	1 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

a) Respiratory protection:

Full face mask with filter type A.

b) Hand protection:

Protective gloves against chemicals (EN 374).

Materials	Measured breakthrough time	Thickness	Protection index	Remark
nitrile rubber	> 480 minutes	0.3 mm	Class 6	

c) Eye protection:

Combined eye and respiratory protection.

d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Paste
Odour	Characteristic odour
Odour threshold	No data available in the literature
Colour	Beige
Particle size	No data available in the literature
Explosion limits	No data available in the literature
Flammability	Not classified as flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	30000 mPa.s - 65000 mPa.s
Kinematic viscosity	No data available in the literature
Melting point	No data available in the literature
Boiling point	No data available in the literature
Relative vapour density	No data available in the literature
Vapour pressure	No data available in the literature
Solubility	No data available in the literature
Relative density	1.44 - 1.48
Absolute density	1440 kg/m³ - 1480 kg/m³
Decomposition temperature	No data available in the literature
Auto-ignition temperature	No data available in the literature
Flash point	No data available in the literature
pH	No data available in the literature

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Heating increases the fire hazard.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

SECTION 11: Toxicological information

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

11.1.1 Test results

Acute toxicity

PU CONSTRUCT 1.1

No (test)data on the mixture available

Judgement is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 2000 mg/kg bw		Rat (male / female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 9400 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (aerosol)	LC50	Equivalent to OECD 403	0.49 mg/l air	4 h	Rat (male / female)	Read-across	
Inhalation			category 4			Annex VI	

o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 2000 mg/kg bw		Rat (male / female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 9400 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (aerosol)	LC50	OECD 403	0.42 mg/l air	4 h	Rat (male / female)	Experimental value of similar product	
Inhalation			category 4			Expert judgement	

di-''isononyl'' phthalate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 10000 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50		> 3160 mg/kg bw	24 h	Rabbit (female)	Experimental value	
Inhalation (aerosol)	LC50		> 4.4 mg/l air	4 h	Rat (male / female)	Experimental value	

2,2'-dimorpholinyldiethyl ether

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	2025 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	3038 mg/kg bw	24 h	Rabbit (male / female)	Experimental value	
Inhalation						Data waiving	

diethylmethylbenzenediamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	738 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Dermal			category 4			Annex VI	
Inhalation (aerosol)	LC50		> 2.45 mg/l	1 h	Rat (male / female)	Experimental value	

Classification of this substance is debatable as it does not correspond to the conclusion from the test

2,2'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 425	> 5000 mg/kg bw		Rat (female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	> 9400 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (aerosol)	LC50	OECD 403	0.42 mg/l	4 h	Rat (male / female)	Experimental value of similar product	
Inhalation			category 4			Expert judgement	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

PU CONSTRUCT 1.1

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Slightly irritating				Rabbit	Experimental value	
Eye	Irritating	Human observation			Human	Weight of evidence	
Skin	Irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Read-across	
Inhalation	Irritating	Human observation			Human	Experimental value	

o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Read-across	
Eye	Irritating				Human	Weight of evidence	
Skin	Irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Read-across	
Skin	Irritating				Human	Weight of evidence	
Inhalation	Irritating				Human	Weight of evidence	

Classification of this substance is debatable as it does not correspond to the conclusion from the test

di-''isononyl'' phthalate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	Equivalent to OECD 405		24; 72 hours	Rabbit	Experimental value	Single treatment without rinsing
Skin	Slightly irritating	Equivalent to OECD 404	4 h	24; 72 hours	Rabbit	Experimental value	

2,2'-dimorpholinyldiethyl ether

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	

diethylmethylbenzenediamine

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	EPA 16 CFR 1500.42		24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating	OECD 404	4 h	72 hours	Rabbit	Experimental value	

2,2'-methylenediphenyl diisocyanate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		1; 24; 48; 72; 168 hours	Rabbit	Experimental value	
Eye	Irritating				Human	Weight of evidence	
Skin	Not irritating	OECD 404	4 h	2; 24; 48; 72 hrs; 7; 10; 14 days	Rabbit	Experimental value	
Skin	Irritating				Human	Weight of evidence	
Inhalation	Irritating				Human	Weight of evidence	

Classification of this substance is debatable as it does not correspond to the conclusion from the test

Conclusion

Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.

Respiratory or skin sensitisation

PU CONSTRUCT 1.1

No (test)data on the mixture available
Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 406			Guinea pig (male / female)	Experimental value	
Skin	Sensitizing	Patch test			Human	Experimental value	
Inhalation	Sensitizing	OECD GD-39			Rat (male)	Read-across	

o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 406	12 h	24; 48 hours	Guinea pig (male / female)	Read-across	
Dermal (on the ears)	Sensitizing	Mouse local lymph node assay (LLNA)			Mouse	Experimental value of similar product	
Skin	Sensitizing; category 1					Annex VI	
Inhalation	Sensitizing				Human (male)	Weight of evidence	
Inhalation	Sensitizing				Guinea pig (female)	Experimental value	

Classification of this substance is debatable as it does not correspond to the conclusion from the test

di-''isononyl'' phthalate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	EU Method B.6			Guinea pig (female)	Experimental value	
Inhalation	Not sensitizing				Mouse	Experimental value	

2,2'-dimorpholinyldiethyl ether

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	OECD 406		24; 48 hours	Guinea pig (male / female)	Experimental value	

diethylmethylbenzenediamine

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing				Guinea pig	Experimental value	

2,2'-methylenediphenyl diisocyanate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 406	12 h	24; 48; 72 hours	Guinea pig (male / female)	Experimental value	
Dermal (on the ears)	Sensitizing	OECD 429			Mouse (female)	Experimental value	
Skin	Sensitizing				Human	Experimental value	
Inhalation	Sensitizing				Guinea pig (female)	Read-across	

Classification of this substance according to Annex VI is debatable as it does not correspond to the conclusion from the test

Conclusion

May cause an allergic skin reaction.

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

Specific target organ toxicity

PU CONSTRUCT 1.1

No (test)data on the mixture available

Judgement is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	0.2 mg/m³ air		No effect	52 weeks (6h / day, 5 days / week) - 104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	1 mg/l		Histopathology	52 weeks (6h / day, 5 days / week) - 104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across

o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	0.2 mg/m³ air	Respiratory tract	No effect	2 year(s) (6h / day, 5 days / week)	Rat (male / female)	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	1 mg/m³ air	Respiratory tract	Histopathology	2 year(s) (6h / day, 5 days / week)	Rat (male / female)	Read-across

di-''isononyl'' phthalate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	NOAEL	Equivalent to OECD 452	88.3 mg/kg bw/day	Liver; kidney	No effect	104 weeks (7 days / week)	Rat (male)	Experimental value
Oral (diet)	NOAEL	Equivalent to OECD 452	108.6 mg/kg bw/day	Liver; kidney	No effect	104 week(s)	Rat (female)	Experimental value
Dermal	NOAEL systemic effects	Subacute toxicity test	500 mg/kg bw/day		No adverse systemic effects	6 weeks (5 days / week)	Rabbit (male / female)	Experimental value
Inhalation (aerosol)	NOAEC	Subchronic toxicity test	500 mg/m³ air		No adverse systemic effects	2 weeks (6h / day, 5 days / week)	Rat (male)	Experimental value

2,2'-dimorpholinyldiethyl ether

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 422	300 mg/kg bw/day		No effect		Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (vapours)	NOEC	Equivalent to OECD 452	50 ppm		No adverse systemic effects	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across

diethylmethylbenzenediamine

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (diet)	NOAEL	Equivalent to OECD 408	21 mg/kg bw/day - 27 mg/kg bw/day		No effect	90 day(s)	Rat (male / female)	Experimental value
Oral (diet)	LOAEL	Equivalent to OECD 408	122 mg/kg bw/day - 125 mg/kg bw/day	Various organs	Weight reduction	90 day(s)	Rat (male)	Experimental value
Dermal	NOAEL	Subchronic toxicity test	> 100 mg/kg bw/day		No effect	3 weeks (5 days / week)	Rabbit (male / female)	Experimental value

2,2'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	0.2 mg/m³ air	Respiratory tract	No effect	2 year(s) (6h / day, 5 days / week)	Rat (male / female)	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	1 mg/m³ air	Respiratory tract		2 year(s) (6h / day, 5 days / week)	Rat (male / female)	Read-across

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

PU CONSTRUCT 1.1

No (test)data on the mixture available

Judgement is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	EU Method B.13/14	Bacteria (S.typhimurium)	No effect	Experimental value	

o-(p-isocyanatobenzyl)phenyl isocyanate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

di-''isononyl'' phthalate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 473	Chinese hamster ovary (CHO)		Experimental value	

2,2'-dimorpholinyldiethyl ether

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster ovary (CHO)	No effect	Experimental value	

diethylmethylbenzenediamine

Result	Method	Test substrate	Effect	Value determination	Remark
Positive with metabolic activation, positive without metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value	
Ambiguous	OECD 473	Human lymphocytes		Experimental value	

2,2'-methylenediphenyl diisocyanate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)		Experimental value	

Mutagenicity (in vivo)

PU CONSTRUCT 1.1

No (test)data on the mixture available

Judgement is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Inhalation (dust))	OECD 474	3 weeks (1h / day, 1 day / week)	Rat (male)		Experimental value

o-(p-isocyanatobenzyl)phenyl isocyanate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474	3 weeks (1h / day, 1 day / week)	Rat (male)		Read-across

2,2'-dimorpholinyldiethyl ether

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474		Mouse (male / female)	Bone marrow	Experimental value

diethylmethylbenzenediamine

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Oral (stomach tube))	OECD 474		Mouse (male / female)	Blood	Experimental value

2,2'-methylenediphenyl diisocyanate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474		Rat (male)		Read-across

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

PU CONSTRUCT 1.1

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	1 mg/m³ air	52 weeks (6h / day, 5 days / week) - 104 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect		Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	6 mg/m³ air	52 weeks (6h / day, 5 days / week) - 104 weeks (6h / day, 5 days / week)	Rat (male / female)	Tumor formation	Lungs	Read-across

o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	1 mg/m³ air	2 year(s) (6h / day, 5 days / week)	Rat (male / female)	No effect	Respiratory tract	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	6 mg/m³ air	2 year(s) (6h / day, 5 days / week)	Rat (male / female)	Tumor formation	Respiratory tract	Read-across

di-''isononyl'' phthalate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Oral (diet)	NOAEL	EPA OTS 798.3300	88.3 mg/kg bw/day	104 weeks (7 days / week)	Rat (male)	No carcinogenic effect		Experimental value
Oral (diet)	NOAEL	EPA OTS 798.3300	108.6 mg/kg bw/day	104 weeks (7 days / week)	Rat (female)	No carcinogenic effect		Experimental value

2,2'-dimorpholinyldiethyl ether

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation								Data waiving
Dermal								Data waiving
Oral								Data waiving

diethylmethylbenzenediamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Oral (diet)	LOAEL	Equivalent to OECD 451	> 3.2 mg/kg bw/day	104 weeks (daily)	Rat (male)	Carcinogenicity	Liver	Experimental value
Oral (diet)	LOAEL	Equivalent to OECD 451	> 3.8 mg/kg bw/day	104 weeks (daily)	Rat (female)	Carcinogenicity	Liver	Experimental value

2,2'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	1 mg/m³	2 year(s)	Rat (male / female)	No effect	Respiratory tract	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	6 mg/m³	2 year(s) (6h / day, 5 days / week)	Rat (male / female)	Tumor formation	Respiratory tract	Read-across

Conclusion

Suspected of causing cancer.

Reproductive toxicity

PU CONSTRUCT 1.1

No (test)data on the mixture available

Judgement is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (aerosol))	NOAEL	OECD 414	4 mg/m³ air	10 days (6h / day)	Rat	No effect		Experimental value
Maternal toxicity (Inhalation (aerosol))	NOAEL	OECD 414	4 mg/kg bw/day	10 days (6h / day)	Rat	No effect		Read-across
Effects on fertility (Inhalation (vapours))	NOAEC	Equivalent to OECD 416	0.3 ppm		Rat (male / female)	No effect		Read-across

o-(p-isocyanatobenzyl)phenyl isocyanate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 414	4 mg/m³ air	10 days (6h / day)	Rat	No adverse systemic effects		Read-across
Maternal toxicity	NOAEL	OECD 414	4 mg/m³ air	10 days (6h / day)	Rat (female)	No adverse systemic effects		Read-across

di-''isononyl'' phthalate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	1000 mg/kg bw/day	10 day(s)	Rat	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOEL	OECD 414	200 mg/kg bw/day	10 day(s)	Rat	No effect		Experimental value
Effects on fertility (Oral (diet))	NOAEL	EPA OTS 798.4700	1000 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

2,2'-dimorpholinyldiethyl ether

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 414	750 mg/kg bw/day	14 days (gestation, daily)	Rat	No effect	Foetus	Read-across
Maternal toxicity	NOAEL	OECD 414	75 mg/kg bw/day	14 days (gestation, daily)	Rat	No effect		Read-across
Effects on fertility	NOAEL	OECD 422	300 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

diethylmethylbenzenediamine

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (diet))	NOAEL	OECD 414	7.83 mg/kg bw/day	20 days (gestation, daily)	Rat	No effect	Foetus	Experimental value
Maternal toxicity (Oral (diet))	NOEL	OECD 414	2.63 mg/kg bw/day	20 days (gestation, daily)	Rat	No effect		Experimental value
Effects on fertility								Data waiving

2,2'-methylenediphenyl diisocyanate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (aerosol))	NOAEL	OECD 414	4 mg/m³ air	10 days (6h / day)	Rat (male / female)	No effect		Read-across
Maternal toxicity (Inhalation (aerosol))	NOAEL	OECD 414	4 mg/m³ air	10 days (6h / day)	Rat (female)	No effect		Read-across

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

PU CONSTRUCT 1.1

4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Intraperitoneal	LD50		100 mg/kg bw				Mouse (male)	Experimental value

Chronic effects from short and long-term exposure

PU CONSTRUCT 1.1

Skin rash/inflammation. Respiratory difficulties.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

PU CONSTRUCT 1.1

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 1000 mg/l	96 h	Danio rerio	Static system	Fresh water	Read-across; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	129.7 mg/l	24 h	Daphnia magna	Static system	Fresh water	Read-across; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	> 1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; GLP
	NOELR	OECD 201	1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 211	≥ 10 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; Reproduction
Toxicity aquatic micro-organisms	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Read-across; Respiration

o-(p-isocyanatobenzyl)phenyl isocyanate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 1000 mg/l	96 h	Danio rerio	Static system	Fresh water	Read-across; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	> 1000 mg/l	24 h	Daphnia magna	Static system	Fresh water	Read-across; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	> 1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; GLP
	NOELR	OECD 201	1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; Growth rate
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC	OECD 211	≥ 10 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; Reproduction
Toxicity aquatic micro-organisms	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Read-across; Nominal concentration

di-''isononyl'' phthalate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	EU Method C.1	> 102 mg/l	96 h	Danio rerio	Semi-static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	EU Method C.2	> 74 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	EU Method C.3	> 88 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; GLP
	NOEC	EU Method C.3	88 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Cell numbers
Long-term toxicity fish	NOEC	Equivalent to OECD 210	18.5 mg/l - 24.5 mg/l	284 day(s)	Oryzias latipes	Flow-through system	Fresh water	Experimental value; Survival
Long-term toxicity aquatic crustacea	NOEC	OECD 202	> 101 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	NOEC	OECD 209	83.9 mg/l	30 minutes	Activated sludge	Static system	Fresh water	Experimental value; Respiration

2,2'-dimorpholinyldiethyl ether

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 2150 mg/l	96 h	Danio rerio	Static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	OECD 202	> 100 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	ErC50	OECD 201	> 100 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Nominal concentration
	NOEC	OECD 201	100 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea								Data waiving
Toxicity aquatic micro-organisms	EC50	OECD 209	> 1000 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; Nominal concentration

diethylmethylbenzenediamine

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	DIN 38412-15	200 mg/l	48 h	Leuciscus idus	Static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50	EU Method C.2	0.5 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	ErC50	OECD 201	104 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; GLP
	NOEC	OECD 201	32 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; GLP
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea								Data waiving
Toxicity aquatic micro-organisms	EC50		> 170 mg/l	24 h	Pseudomonas putida	Static system	Fresh water	Experimental value; Nominal concentration

2,2'-methylenediphenyl diisocyanate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 1000 mg/l	96 h	Danio rerio	Static system	Fresh water	Read-across; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	> 1000 mg/l	24 h	Daphnia magna	Static system	Fresh water	Read-across; GLP
Toxicity algae and other aquatic plants	NOELR	OECD 201	1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; GLP
	ErC50	OECD 201	> 1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; GLP
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC	OECD 211	≥ 10 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; GLP
Toxicity aquatic micro-organisms	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Read-across; Nominal concentration

	Parameter	Method	Value	Duration	Species	Value determination
Toxicity soil macro-organisms	NOEC	OECD 207	≥ 1000 mg/kg soil dw	14 day(s)	Eisenia fetida	Read-across
Toxicity terrestrial plants	EC50	Equivalent to OECD 208	> 1000 mg/kg soil dw	14 day(s)	Avena sativa	Read-across
	EC50	Equivalent to OECD 208	> 1000 mg/l	14 day(s)	Lactuca sativa	Read-across

Conclusion

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

4,4'-methylenediphenyl diisocyanate

Biodegradation water

Method	Value	Duration	Value determination
OECD 302C	0 %; Oxygen consumption	28 day(s)	Read-across

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
	20 h		Read-across

o-(p-isocyanatobenzyl)phenyl isocyanate

Biodegradation water

Method	Value	Duration	Value determination
OECD 302C	0 %	28 day(s)	Read-across

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.925 day(s)	1.5E6 /cm³	QSAR

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
	20 h		Read-across

di-''isononyl'' phthalate

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4-C	81 %; Carbon dioxide	28 day(s)	Experimental value

2,2'-dimorpholinyldiethyl ether

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C	4 %; GLP	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	21.605 minutes	1.5E6 /cm³	Calculated value

diethylmethylbenzenediamine

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4	0 %; Oxygen consumption	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	1.48 h	5E5 /cm³	QSAR

2,2'-methylenediphenyl diisocyanate

Biodegradation water

Method	Value	Duration	Value determination
OECD 302C	0 %; GLP	28 day(s)	Read-across

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.925 day(s)	1.5E6 /cm³	Calculated value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
	20 h		Read-across

Conclusion

Water

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

PU CONSTRUCT 1.1

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

4,4'-methylenediphenyl diisocyanate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	92 - 200; GLP	4 week(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		4.51	22 °C	Experimental value

o-(p-isocyanatobenzyl)phenyl isocyanate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	92 - 200; GLP	28 day(s)	Cyprinus carpio	Read-across

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		4.51	22 °C	Read-across

di-''isononyl'' phthalate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		< 3 l/kg; Fresh	14 day(s)	Oncorhynchus mykiss	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		8.8 - 9.7	25 °C	Experimental value

2,2'-dimorpholinyldiethyl ether

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	Equivalent to OECD 305	2.9 l/kg - 3.1 l/kg; GLP	8 week(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		0.5	25 °C	Experimental value

diethylmethylbenzenediamine

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		1.4	25 °C	Experimental value

2,2'-methylenediphenyl diisocyanate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	92 - 200; GLP	28 day(s)	Cyprinus carpio	Read-across

Log Kow

Method	Remark	Value	Temperature	Value determination
KOWWIN		5.22		QSAR

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

4,4'-methylenediphenyl diisocyanate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	4.530 - 5.455	Calculated value

o-(p-isocyanatobenzyl)phenyl isocyanate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	4.530 - 5.464	Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Fugacity Model Level III	0.314 %		56.3 %	38.7 %	4.69 %	Calculated value

di-''isononyl'' phthalate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	6	Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level III	0.9 %	0 %	22.4 %	68.5 %	8.2 %	Calculated value

2,2'-dimorpholinyldiethyl ether

(log) Koc

Parameter	Method	Value	Value determination
log Koc		2.89	Calculated value

diethylmethylbenzenediamine

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v1.66	2.12 - 2.23	QSAR

2,2'-methylenediphenyl diisocyanate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	4.530 - 5.472	Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Fugacity Model Level III	0.312 %		56.5 %	38.5 %	4.64 %	Calculated value

Conclusion

Contains component(s) with potential for mobility in the soil
Contains component(s) that adsorb(s) into the soil

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

PU CONSTRUCT 1.1

Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

2,2'-dimorpholinyldiethyl ether

Groundwater

Groundwater pollutant

Water ecotoxicity pH

pH shift

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. The waste code must be assigned by the user, preferably in consultation with the (environmental) authorities concerned.

13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

14.1. UN number

Transport	Not subject

14.2. UN proper shipping name

14.3. Transport hazard class(es)

Hazard identification number	
Class	
Classification code	

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	

14.7. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78	Not applicable, based on available data

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
1.8 % - 2.4 %	
26.3 g/l - 35 g/l	

Directive 2012/18/EU (Seveso III)

Not subject to registration according to Directive 2012/18/EU (Seveso III)

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· 2,2'-dimorpholinyldiethyl ether · diethylmethylbenzenediamine	Liquid 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: (a) 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; (b) 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; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
· 2,2'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4,4’-Methylenediphenyl diisocyanate; 2,4’-Methylenediphenyl diisocyanate; 2,2’-Methylenediphenyl diisocyanate	1. Shall not be placed on the market after 27 December 2010, as a constituent of mixtures in concentrations equal to or greater than 0,1 % by weight of MDI for supply to the general public, unless suppliers shall ensure before the placing on the market that the packaging: (a) contains protective gloves which comply with the requirements of Council Directive 89/686/EEC; (b) is marked visibly, legibly and indelibly as follows, and without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures: “— Persons already sensitised to diisocyanates 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. 2. By way of derogation, paragraph 1(a) shall not apply to hot melt adhesives.
· di-''isononyl'' phthalate	The following phthalates (or other CAS- and EC numbers covering the substance); Di-“isononyl” phthalate (DINP)	1. Shall not be used as substances or in mixtures, in concentrations greater than 0,1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children. 2. Such toys and childcare articles containing these phthalates in a concentration greater than 0,1 % by weight of the plasticised material shall not be placed on the market. 3. For the purpose of this entry “childcare article” shall mean any product intended to facilitate sleep, relaxation, hygiene, the feeding of children or sucking on the part of children.
· 4,4'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4,4’-Methylenediphenyl diisocyanate; 2,4’-Methylenediphenyl diisocyanate; 2,2’-Methylenediphenyl diisocyanate	1. Shall not be placed on the market after 27 December 2010, as a constituent of mixtures in concentrations equal to or greater than 0,1 % by weight of MDI for supply to the general public, unless suppliers shall ensure before the placing on the market that the packaging: (a) contains protective gloves which comply with the requirements of Council Directive 89/686/EEC; (b) is marked visibly, legibly and indelibly as follows, and without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures: “— Persons already sensitised to diisocyanates 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. 2. By way of derogation, paragraph 1(a) shall not apply to hot melt adhesives.
· o-(p-isocyanatobenzyl)phenyl isocyanate	Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4,4'-Methylenediphenyl diisocyanate; 2,4'-Methylenediphenyl diisocyanate; 2,2'-Methylenediphenyl diisocyanate	1. Shall not be placed on the market after 27 December 2010, as a constituent of mixtures in concentrations equal to or greater than 0,1 % by weight of MDI for supply to the general public, unless suppliers shall ensure before the placing on the market that the packaging: (a) contains protective gloves which comply with the requirements of Council Directive 89/686/EEC; (b) is marked visibly, legibly and indelibly as follows, and without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures: "— Persons already sensitised to diisocyanates 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. 2. By way of derogation, paragraph 1(a) shall not apply to hot melt adhesives.
· 4,4'-methylenediphenyl diisocyanate · o-(p-isocyanatobenzyl)phenyl isocyanate · 2,2'-methylenediphenyl diisocyanate	Diisocyanates, O = C=N-R-N = C=O, with R an aliphatic or aromatic hydrocarbon unit of unspecified length	1. Shall not be used as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 August 2023, unless: (a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight, or (b) the employer or self-employed ensures that industrial or professional user(s) have successfully completed training on the safe use of diisocyanates prior to the use of the substance(s) or mixture(s). 2. Shall not be placed on the market as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 February 2022, unless: (a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight, or (b) the supplier ensures that the recipient of the substance(s) or mixture(s) is provided with information on the requirements referred to in point (b) of paragraph 1 and the following statement is placed on the packaging, in a manner that is visibly distinct from the rest of the label information: "As from 24 August 2023 adequate training is required before industrial or professional use". 3. For the purpose of this entry "industrial and professional user(s)" means any worker or self-employed worker handling diisocyanates on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) or supervising these tasks. 4. The training referred to in point (b) of paragraph 1 shall include the instructions for the control of dermal and inhalation exposure to diisocyanates at the workplace without prejudice to any national occupational exposure limit value or other appropriate risk management measures at national level. Such training shall be conducted by an expert on occupational safety and health with competence acquired by relevant vocational training. That training shall cover as a minimum: (a) the training elements in point (a) of paragraph 5 for all industrial and professional use(s). (b) the training elements in points (a) and (b) of paragraph 5 for the following uses: — handling open mixtures at ambient temperature (including foam tunnels); — spraying in a ventilated booth; — application by roller; — application by brush; — application by dipping and pouring; — mechanical post treatment (e.g. cutting) of not fully cured articles which are not warm anymore; — cleaning and waste; — any other uses with similar exposure through the dermal and/or inhalation route; (c) the training elements in points (a), (b) and (c) of paragraph 5 for the following uses: — handling incompletely cured articles (e.g. freshly cured, still warm); — foundry applications; — maintenance and repair that needs access to equipment; — open handling of warm or hot formulations (> 45 °C); — spraying in open air, with limited or only natural ventilation (includes large industry working halls) and spraying with high energy (e.g. foams, elastomers); — and any other uses with similar exposure through the dermal and/or inhalation route. 5. Training elements: (a) general training, including on-line training, on: — chemistry of diisocyanates; — toxicity hazards (including acute toxicity); — exposure to diisocyanates; — occupational exposure limit values; — how sensitisation can develop; — odour as indication of hazard; — importance of volatility for risk; — viscosity, temperature, and molecular weight of diisocyanates; — personal hygiene; — personal protective equipment needed, including practical instructions for its correct use and its limitations; — risk of dermal contact and inhalation exposure; — risk in relation to application process used;

		— skin and inhalation protection scheme; — ventilation; — cleaning, leakages, maintenance; — discarding empty packaging; — protection of bystanders; — identification of critical handling stages; — specific national code systems (if applicable); — behaviour-based safety; — certification or documented proof that training has been successfully completed (b) intermediate level training, including on-line training, on: — additional behaviour-based aspects; — maintenance; — management of change; — evaluation of existing safety instructions; — risk in relation to application process used; — certification or documented proof that training has been successfully completed (c) advanced training, including on-line training, on: — any additional certification needed for the specific uses covered; — spraying outside a spraying booth; — open handling of hot or warm formulations (> 45 °C); — certification or documented proof that training has been successfully completed 6. The training shall comply with the provisions set by the Member State in which the industrial or professional user(s) operate. Member States may implement or continue to apply their own national requirements for the use of the substance(s) or mixture(s), as long as the minimum requirements set out in paragraphs 4 and 5 are met. 7. The supplier referred to in point (b) of paragraph 2 shall ensure that the recipient is provided with training material and courses pursuant to paragraphs 4 and 5 in the official language(s) of the Member State(s) where the substance(s) or mixture(s) are supplied. The training shall take into consideration the specificity of the products supplied, including composition, packaging, and design. 8. The employer or self-employed shall document the successful completion of the training referred to in paragraphs 4 and 5. The training shall be renewed at least every five years. 9. Member States shall include in their reports pursuant to Article 117(1) the following information: (a) any established training requirements and other risk management measures related to the industrial and professional uses of diisocyanates foreseen in national law; (b) the number of cases of reported and recognised occupational asthma and occupational respiratory and dermal diseases in relation to diisocyanates; (c) national exposure limits for diisocyanates, if there are any; (d) information about enforcement activities related to this restriction. 10. This restriction shall apply without prejudice to other Union legislation on the protection of safety and health of workers at the workplace.
· 4,4'-methylenediphenyl diisocyanate · o-(p-isocyanatobenzyl)phenyl isocyanate · diethylmethylbenzenediamine · 2,2'-methylenediphenyl diisocyanate	Substances falling within one or more of the following points: (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008: — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2 — serious eye damage category 1 or eye irritant category 2 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council (c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex. The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

National legislation Belgium
PU CONSTRUCT 1.1

No data available

National legislation The Netherlands
PU CONSTRUCT 1.1

Waterbezwaarlijkheid	Z (2); Algemene Beoordelingsmethodiek (ABM)

National legislation France

PU CONSTRUCT 1.1

No data available

4,4'-methylenediphenyl diisocyanate

Catégorie cancérogène	4,4'-Diisocyanate de diphénylméthane; C2

National legislation Germany

PU CONSTRUCT 1.1

Lagerklasse (TRGS510)	12: Nicht brennbare Flüssigkeiten, die keiner der vorgenannten LGK zuzuordnen sind
WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

4,4'-methylenediphenyl diisocyanate

TA-Luft	5.2.5/I
TRGS900 - Risiko der Fruchtschädigung	4,4'-Methylendiphenyldiisocyanat; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
Sensibilisierende Stoffe	4,4'-Methylendiphenyldiisocyanat; Sh; Hautsensibilisierende Stoffe
Hautresorptive Stoffe	4,4'-Methylendiphenyldiisocyanat; H; Hautresorptiv

o-(p-isocyanatobenzyl)phenyl isocyanate

TA-Luft	5.2.5/I

di-''isononyl'' phthalate

TA-Luft	5.2.5/I

2,2'-dimorpholinyldiethyl ether

TA-Luft	5.2.5

diethylmethylbenzenediamine

TA-Luft	5.2.5/I

2,2'-methylenediphenyl diisocyanate

TA-Luft	5.2.5/I

National legislation Austria

PU CONSTRUCT 1.1

No data available

4,4'-methylenediphenyl diisocyanate

Krebserzeugend	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; III B
Gefahr der Sensibilisierung der Haut	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; Sh
Gefahr der Sensibilisierung der Atemwege	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; Sa

o-(p-isocyanatobenzyl)phenyl isocyanate

Krebserzeugend	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; III B
Gefahr der Sensibilisierung der Haut	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; Sh
Gefahr der Sensibilisierung der Atemwege	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; Sa

2,2'-methylenediphenyl diisocyanate

Krebserzeugend	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; III B
Gefahr der Sensibilisierung der Haut	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; Sh
Gefahr der Sensibilisierung der Atemwege	Diphenylmethan-diisocyanat (alle Isomeren):Diphenylmethan-4,4’-diisocyanat Diphenylmethan-2,2’-diisocyanat Diphenylmethan-2,4’-diisocyanat; Sa

National legislation United Kingdom

PU CONSTRUCT 1.1

No data available

4,4'-methylenediphenyl diisocyanate

Skin Sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen
Respiratory sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen

o-(p-isocyanatobenzyl)phenyl isocyanate

Skin Sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen
Respiratory sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen

2,2'-methylenediphenyl diisocyanate

Skin Sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen
Respiratory sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen

Other relevant data

PU CONSTRUCT 1.1

No data available

4,4'-methylenediphenyl diisocyanate

IARC - classification	3; 4,4'-methylenediphenyl diisocyanate and polymeric 4,4'-methylenediphenyl diisocyanate

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 3:

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
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 (respiratory system) through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs (pancreas) through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.