

## Purocol Express

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

#### 1.1 Product identifier:

Product name : Purocol Express  
 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

Adhesive

##### 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

SODAL N.V.  
 Everdongenlaan 18-20  
 B-2300 Turnhout  
 ☎ +32 14 42 42 31  
 ☐ +32 14 42 65 14  
 msds@soudal.com

##### Manufacturer of the product

SODAL N.V.  
 Everdongenlaan 18-20  
 B-2300 Turnhout  
 ☎ +32 14 42 42 31  
 ☐ +32 14 42 65 14  
 msds@soudal.com

#### 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:

##### 2.1.1 Classification according to Regulation EC No 1272/2008

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.
STOT RE	category 2	H373: May cause damage to organs through prolonged or repeated exposure if inhaled.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
STOT SE	category 3	H335: May cause respiratory irritation.
Skin Irrit.	category 2	H315: Causes skin irritation.
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.

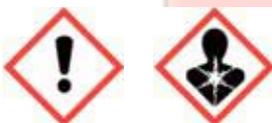
##### 2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

Carc. Cat. 3; R40 - Limited evidence of a carcinogenic effect  
 Xn; R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.  
 Xi; R36/37/38 - Irritating to eyes, respiratory system and skin.  
 R42/43 - May cause sensitisation by inhalation and skin contact.

#### 2.2 Label elements:

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



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

**Signal word** Danger

**H-statements**

- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure if inhaled.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H315 Causes skin irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.

**P-statements**

- P101 If medical advice is needed, have product container or label at hand.
- P102 Keep out of reach of children.
- P280 Wear protective gloves, protective clothing and eye protection/face protection.
- P284 Wear respiratory protection.
- P260 Do not breathe vapours/mist.
- 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/doctor if you feel unwell.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

**Supplemental information**

- 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.

**Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)**

**Labels**



Harmful

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

**R-phrases**

- 36/37/38 Irritating to eyes, respiratory system and skin
- 40 Limited evidence of a carcinogenic effect
- 42/43 May cause sensitisation by inhalation and skin contact
- 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation

**S-phrases**

- (02) (Keep out of the reach of children)
- 23 Do not breathe vapour
- 36/37 Wear suitable protective clothing and gloves
- 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
- (63) (In case of accident by inhalation: remove casualty to fresh air and keep at rest)

**Additional recommendations**

- Contains isocyanates. See information supplied by the manufacturer.
- 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.

**2.3 Other hazards:**

**CLP**

No other hazards known

**DSD/DPD**

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 DSD/DPD	Classification according to CLP	Note	Remark

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4,4'-methylenediphenyl diisocyanate 01-2119457014-47	101-68-8 202-966-0	C<20 %	Carc. Cat. 3; R40 Xn; R20 - 48/20 Xi; R36/37/38 R42/43	Carc. 2; H351 Acute Tox. 4; H332 STOT RE 2; H373 Eye Irrit. 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315 Resp. Sens. 1; H334 Skin Sens. 1; H317	(1)(2)(8)(10)	Constituent
o-(p-isocyanatobenzyl)phenyl isocyanate 01-2119480143-45	5873-54-1 227-534-9	C<20 %	Carc. Cat. 3; R40 Xn; R20 - 48/20 Xi; R36/37/38 R42/43	Carc. 2; H351 Acute Tox. 4; H332 STOT RE 2; H373 Eye Irrit. 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315 Resp. Sens. 1; H334 Skin Sens. 1; H317	(1)(2)(8)(10)	Constituent
polymethylene polyphenyl isocyanate	9016-87-9	C>50 %	Carc. Cat. 3; R40 Xn; R20 - 48/20 Xi; R36/37/38 R42/43	Carc. 2; H351 Acute Tox. 4; H332 STOT RE 2; H373 Eye Irrit. 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315 Resp. Sens. 1; H334 Skin Sens. 1; H317	(1)(2)(10)	Constituent

- (1) For R-phrases and H-statements in full: see heading 16  
 (2) Substance with a Community workplace exposure limit  
 (8) Specific concentration limits, see heading 16  
 (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:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

#### After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

#### After skin contact:

Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

#### After eye contact:

Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

#### After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel

### 4.2 Most important symptoms and effects, both acute and delayed:

#### 4.2.1 Acute symptoms

##### After inhalation:

Dry/sore throat. Coughing. Runny nose. 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:

Irritation of the gastric/intestinal mucosa.

#### 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:

Polyvalent foam. BC powder. Carbon dioxide. MAJOR FIRE: Water spray.

#### 5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

### 5.2 Special hazards arising from the substance or mixture:

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

## 5.3 Advice for firefighters:

### 5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water.

### 5.3.2 Special protective equipment for fire-fighters:

Gloves. Face-shield. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

## 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 heading 8.2

#### 6.1.2 Protective equipment for emergency responders

Gloves. Face-shield. Protective clothing.

#### Suitable protective clothing

See heading 8.2

### 6.2 Environmental precautions:

Contain leaking substance. Dam up the solid spill. Use appropriate containment to avoid environmental contamination. Prevent spreading in sewers.

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

Scoop solid spill into closing containers. Containers must not be sealed hermetically. Carefully collect the spill/leftovers. Clean (treat) contaminated surfaces with acetone. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4 Reference to other sections:

See heading 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. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

### 7.2 Conditions for safe storage, including any incompatibilities:

#### 7.2.1 Safe storage requirements:

Store in a dry area. Keep container in a well-ventilated place. Keep only in the original container. Meet the legal requirements. Max. storage time: 1 year(s).

#### 7.2.2 Keep away from:

Heat sources, (strong) acids, (strong) bases, alcohols, amines, water/moisture.

#### 7.2.3 Suitable packaging material:

Polyethylene.

#### 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.

#### The Netherlands

Difenylnmethaan-4,4'-diisocyaanat	Time-weighted average exposure limit 8 h (Private occupational exposure limit value)	0.0048 ppm
	Time-weighted average exposure limit 8 h (Private occupational exposure limit value)	0.05 mg/m <sup>3</sup>
	Short time value (Private occupational exposure limit value)	0.02 ppm
	Short time value (Private occupational exposure limit value)	0.21 mg/m <sup>3</sup>

#### 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/m <sup>3</sup>

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## USA (TLV-ACGIH)

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

4,4'-Methylenediphenyldiisocyanat	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m <sup>3</sup>
o-(p-Isocyanatobenzyl)phenylisocyanat	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m <sup>3</sup>
pMDI (als MDI berechnet)	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m <sup>3</sup>

## France

4,4'-Diisocyanate de diphenylméthane	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/m <sup>3</sup>
	Short time value (VL: Valeur non réglementaire indicative)	0.02 ppm
	Short time value (VL: Valeur non réglementaire indicative)	0.2 mg/m <sup>3</sup>

## UK

Isocyanates, all (as -NCO) Except methyl isocyanate	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.02 mg/m <sup>3</sup>
	Short time value (Workplace exposure limit (EH40/2005))	0.07 mg/m <sup>3</sup>

### b) National biological limit values

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

### 8.1.2 Sampling methods

Product name	Test	Number
4,4'-Methylene Bisphenyl Isocyanate (MDI) (Isocyanates)	NIOSH	5521
4,4'-Methylenebis(phenylisocyanate)	NIOSH	5525
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 DNEL/PNEC values

#### DNEL - Workers

##### 4,4'-methylenediphenyl diisocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.05 mg/m <sup>3</sup>	
	Acute local effects inhalation	0.1 mg/m <sup>3</sup>	

##### o-(p-isocyanatobenzyl)phenyl isocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.05 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	0.1 mg/m <sup>3</sup>	
	Long-term local effects inhalation	0.05 mg/m <sup>3</sup>	
	Acute local effects inhalation	0.1 mg/m <sup>3</sup>	
	Acute systemic effects dermal	50 mg/kg bw/day	
	Acute local effects dermal	28.7 mg/cm <sup>3</sup>	

#### DNEL - General population

##### 4,4'-methylenediphenyl diisocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	0.025 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	0.05 mg/m <sup>3</sup>	

##### o-(p-isocyanatobenzyl)phenyl isocyanate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	0.025 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	0.05 mg/m <sup>3</sup>	
	Long-term local effects inhalation	0.025 mg/m <sup>3</sup>	
	Acute local effects inhalation	0.05 mg/m <sup>3</sup>	
	Acute systemic effects dermal	25 mg/kg bw/day	
	Acute local effects dermal	17.2 mg/cm <sup>3</sup>	
	Acute systemic effects oral	20 mg/kg bw/day	

#### PNEC

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# Purocol Express

## 4,4'-methylenediphenyl diisocyanate

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Aqua (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	
Aqua (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. Keep container tightly closed. Do not eat, drink or smoke during work.

##### a) Respiratory protection:

Insufficient ventilation: wear respiratory protection.

##### b) Hand protection:

Gloves.

- materials (good resistance)

Polyethylene.

##### c) Eye protection:

Safety glasses.

##### d) Skin protection:

Protective clothing.

#### 8.2.3 Environmental exposure controls:

See headings 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
Colour	Colourless
Particle size	No data available
Explosion limits	No data available
Flammability	Non-flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	No data available
Flash point	> 165°C
Evaporation rate	No data available
Relative vapour density	> 2
Vapour pressure	No data available
Solubility	water ; insoluble
Relative density	1.1
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available

### 9.2 Other information:

Absolute density	1146kg/m <sup>3</sup>
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## SECTION 10: Stability and reactivity

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## 10.1 Reactivity:

No data available.

## 10.2 Chemical stability:

Stable under normal conditions.

## 10.3 Possibility of hazardous reactions:

No data available.

## 10.4 Conditions to avoid:

Keep away from naked flames/heat.

## 10.5 Incompatible materials:

(strong) acids, (strong) bases, alcohols, amines, water/moisture.

## 10.6 Hazardous decomposition products:

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

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects:

#### 11.1.1 Test results

#### Acute toxicity

##### Purocol Express

No (test)data on the mixture available

##### 4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 7616mg/kg		Rat (female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 9400mg/kg bw	24 h	Rabbit (male/female)	Read-across	
Dermal	Percutaneous absorption rate	EPA OPPTS 870.7600	0.9%	8 h	Rat (male)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	> 2.24mg/l	1 h	Rat (male/female)	Experimental value	
Inhalation (aerosol)	LC50	Equivalent to OECD 403	0.49mg/l air	4 h	Rat (male/female)	Read-across	

##### o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Other	> 2000mg/kg bw		Rat (male/female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 9400mg/kg bw	24 h	Rabbit (male/female)	Read-across	
Inhalation (aerosol)	LC50	OECD 403	387mg/m <sup>3</sup> air	4 h	Rat (male)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	645mg/m <sup>3</sup> air	4 h	Rat (female)	Experimental value	

##### polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 10000mg/kg		Rat	Literature study	
Dermal	LD50		> 5000mg/kg		Rabbit	Literature study	
Inhalation (vapours)	LD50		10mg/l - 20mg/l	4 h	Rat	Literature study	
			category 2			Literature study	

Judgement is based on the relevant ingredients

#### Conclusion

Not classified for acute toxicity

#### Corrosion/irritation

##### Purocol Express

No (test)data on the mixture available

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## 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	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	

## o-(p-isocyanatobenzyl)phenyl isocyanate

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

## polymethylene polyphenyl isocyanate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating; category 2					Literature study	
Skin	Irritating; category 2					Literature study	
Inhalation	Irritating; STOT SE cat.3					Literature study	

Classification is based on the relevant ingredients

### Conclusion

- Causes skin irritation.
- Causes serious eye irritation.
- May cause respiratory irritation.
- Specific target organ toxicity, single exposure: classified as irritant to respiratory organs

### Respiratory or skin sensitisation

#### Purocol Express

No (test) data on the mixture available

## 4,4'-methylenediphenyl diisocyanate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing					Literature study	
Skin	Sensitizing	OECD 429			Mouse	Experimental value	
Inhalation	Sensitizing				Rat (male)	Experimental value	
Inhalation	Sensitizing				Guinea pig (female)	Experimental value	

## 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	
Skin	Sensitizing					Annex VI	
Inhalation	Sensitizing	Other			Guinea pig (female)	Read-across	
Inhalation	Sensitizing				Human (male)	Weight of evidence	

## polymethylene polyphenyl isocyanate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing; category 1					Literature study	
Inhalation	Sensitizing; category 1					Literature study	

Classification is based on the relevant ingredients

### Conclusion

- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause an allergic skin reaction.

### Specific target organ toxicity

#### Purocol Express

No (test) data on the mixture available

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## 4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	LOAEC	Other	0.23mg/m <sup>3</sup> air	Lungs	Lung tissue affection/degeneration	<= 104 weeks (17h/day, 5 days/week)	Rat (female)	Experimental value

## 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	0.2mg/m <sup>3</sup> 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	1mg/m <sup>3</sup> air	Respiratory tract	Histopathology	2 year(s) (6h/day, 5 days/week)	Rat (male/female)	Read-across

## polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation			STOT RE cat.2					Literature study

Classification is based on the relevant ingredients

### Conclusion

May cause damage to organs through prolonged or repeated exposure if inhaled.

Not classified as sub-chronically toxic in contact with skin

Not classified as sub-chronically toxic if swallowed

### Mutagenicity (in vitro)

#### Purocol Express

No (test)data on the mixture available

#### 4,4'-methylenediphenyl diisocyanate

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

#### o-(p-isocyanatobenzyl)phenyl isocyanate

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

### Mutagenicity (in vivo)

#### Purocol Express

No (test)data on the mixture available

#### 4,4'-methylenediphenyl diisocyanate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	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

### Carcinogenicity

#### Purocol Express

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation			category 2			Literature		

#### 4,4'-methylenediphenyl diisocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation (aerosol)	NOAEC	Other	0.7mg/m <sup>3</sup> air	104 weeks (17h/day, 5 days/week)	Rat (female)	Experimental value		No carcinogenic effect

#### o-(p-isocyanatobenzyl)phenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	1mg/m <sup>3</sup> air	2 year(s) (6h/day, 5 days/week)	Rat (male/female)	Read-across	Respiratory tract	No effect
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	6mg/m <sup>3</sup> air	2 year(s) (6h/day, 5 days/week)	Rat (male/female)	Read-across	Respiratory tract	Tumor formation

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## polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Unknown			category 2			Literature study		

### Reproductive toxicity

#### Purocol Express

No (test) data on the mixture available

#### 4,4'-methylenediphenyl diisocyanate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 414	3mg/m <sup>3</sup> air	10 days (6h/day)	Rat (female)	No effect		Experimental value
	LOAEL	OECD 414	9mg/m <sup>3</sup> air	10 days (6h/day)	Rat (female)	Embryotoxicity		Experimental value
Maternal toxicity	NOAEL	OECD 414	4mg/kg bw/day	10 day(s)	Rat (female)	No effect		Read-across
Effects on fertility								Data waiving

#### o-(p-isocyanatobenzyl)phenyl isocyanate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 414	4mg/m <sup>3</sup> air	10 days (6h/day)	Rat	No adverse systemic effects		Read-across
Maternal toxicity	NOAEL	OECD 414	4mg/m <sup>3</sup> air	10 days (6h/day)	Rat (female)	No adverse systemic effects		Read-across

Classification is based on the relevant ingredients

#### Conclusion CMR

Suspected of causing cancer.

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

### Toxicity other effects

#### Purocol Express

No (test) data on the mixture available

#### 4,4'-methylenediphenyl diisocyanate

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

### Chronic effects from short and long-term exposure

#### Purocol Express

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Itching. Skin rash/inflammation. Feeling of weakness. Coughing. Possible inflammation of the respiratory tract. Respiratory difficulties.

## SECTION 12: Ecological information

### 12.1 Toxicity:

#### Purocol Express

No (test) data on the mixture available

#### 4,4'-methylenediphenyl diisocyanate

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

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## o-(p-isocyanatobenzyl)phenyl isocyanate

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

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

## polymethylene polyphenyl isocyanate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity other aquatic organisms	LC50		> 1000mg/l	96 h				Literature study
Toxicity aquatic micro-organisms	EC50	OECD 209	> 100mg/l		Activated sludge			Literature study

Classification of the mixture is based on the relevant ingredients

### Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

## 12.2 Persistence and degradability:

### 4,4'-methylenediphenyl diisocyanate

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	0%	28 day(s)	Read-across

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.92day(s)		QSAR

#### Half-life water (t1/2 water)

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

## o-(p-isocyanatobenzyl)phenyl isocyanate

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	0%	28 day(s)	Read-across

#### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.89day(s); GLP	1.5E6 /cm <sup>3</sup>	Experimental value

#### Half-life water (t1/2 water)

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

## polymethylene polyphenyl isocyanate

#### Biodegradation water

Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	< 60%		Experimental value

### Conclusion

Contains non readily biodegradable component(s)

## 12.3 Bioaccumulative potential:

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## Purocol Express

### 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	4 week(s)	Cyprinus carpio	Experimental value

#### Log Kow

Method	Remark	Value	Temperature	Value determination
		5.22		Estimated value
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	28 day(s)	Cyprinus carpio	Read-across

#### Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		4.51	22 °C	Conclusion by analogy

### polymethylene polyphenyl isocyanate

#### BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		1		Pisces	Literature study

#### Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

### Conclusion

Contains bioaccumulative component(s)

### 12.4 Mobility in soil:

#### 4,4'-methylenediphenyl diisocyanate

##### Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
8.95E-7atm m <sup>3</sup> /mol		25°C		Estimated value

### Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

### 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 Other adverse effects:

#### Purocol Express

##### Global warming potential (GWP)

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

##### Ozone-depleting potential (ODP)

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

#### 4,4'-methylenediphenyl diisocyanate

##### Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

#### o-(p-isocyanatobenzyl)phenyl isocyanate

##### Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

#### polymethylene polyphenyl isocyanate

##### Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

## 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:

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# Purocol Express

## 13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 04 09\* (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants containing organic solvents or other dangerous substances). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

## 13.1.2 Disposal methods

Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. 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.

## 13.1.3 Packaging/Container

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)

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	

### Rail (RID)

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	

### Inland waterways (ADN)

14.1 UN number:

Transport	Not subject
-----------	-------------

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

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	

### Sea (IMDG/IMSBC)

14.1 UN number:

Transport	Not subject
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# Purocol Express

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Class	
-------	--

14.4 Packing group:

Packing group	
---------------	--

Labels	
--------	--

14.5 Environmental hazards:

Marine pollutant	
------------------	--

Environmentally hazardous substance mark	no
--	----

14.6 Special precautions for user:

Special provisions	
--------------------	--

Limited quantities	
--------------------	--

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	
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## Air (ICAO-TI/IATA-DGR)

14.1 UN number:

Transport	Not subject
-----------	-------------

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Class	
-------	--

14.4 Packing group:

Packing group	
---------------	--

Labels	
--------	--

14.5 Environmental hazards:

Environmentally hazardous substance mark	no
--	----

14.6 Special precautions for user:

Special provisions	
--------------------	--

Passenger and cargo transport: limited quantities: maximum net quantity per packaging	
---	--

## 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
0%	
0g/l	

#### 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
polymethylene polyphenyl isocyanate	Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are 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 R65 or 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 R65 or 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 R65 or 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 R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010. 6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public. 7. Natural or legal

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		persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.'
4,4'-methylenediphenyl diisocyanate 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.
polymethylene polyphenyl 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.

## National legislation The Netherlands

### Purocol Express

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 03
Waterbezwaarlijkheid	11

## National legislation Germany

### Purocol Express

WGK	1; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)
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### 4,4'-methylenediphenyl diisocyanate

MAK - Krebserzeugend Kategorie	4
Schwangerschaft Gruppe	C
MAK 8-Stunden-Mittelwert mg/m <sup>3</sup>	Diphenylmethan-4,4'-diisocyanat (MDI) (einatembare Fraktion); 0.05 mg/m <sup>3</sup> ; gemessen als einatembare Fraktion (vgl. Abschn. Vd) S. 191)
TA-Luft	5.2.5; I 5.2.5

### o-(p-isocyanatobenzyl)phenyl isocyanate

TA-Luft	5.2.5; I 5.2.5
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### polymethylene polyphenyl isocyanate

TRGS905 - Krebserzeugend	3
TRGS905 - Erbgutverändernd	-
TRGS905 - Fruchtbarkeitsgefährdend	-
TRGS905 - Fruchtschädigend	-
MAK - Krebserzeugend Kategorie	4
Schwangerschaft Gruppe	C
MAK 8-Stunden-Mittelwert mg/m <sup>3</sup>	„polymeres MDI“ (einatembare Fraktion); 0.05 mg/m <sup>3</sup> ; gemessen als einatembare Fraktion (vgl. Abschn. Vd) S. 191)

## National legislation France

### Purocol Express

No data available

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## 4,4'-methylenediphenyl diisocyanate

Catégorie cancérogène	C2
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### National legislation Belgium

#### Purocol Express

No data available

### Other relevant data

#### Purocol Express

No data available

## 4,4'-methylenediphenyl diisocyanate

IARC - classification	3; 4,4'-methylenediphenyl diisocyanate and polymeric 4,4'-methylenediphenyl diisocyanate
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## polymethylene polyphenyl isocyanate

IARC - classification	3; Polymethylene polyphenyl isocyanate
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## 15.2 Chemical safety assessment:

No chemical safety assessment is required.

## SECTION 16: Other information

### Full text of any R-phrases referred to under headings 2 and 3:

R20 Harmful by inhalation  
 R36/37/38 Irritating to eyes, respiratory system and skin  
 R40 Limited evidence of a carcinogenic effect  
 R42/43 May cause sensitisation by inhalation and skin contact  
 R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation

### Full text of any H-statements referred to under headings 2 and 3:

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 if inhaled.

(\*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive

DPD Dangerous Preparation Directive

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

### Specific concentration limits CLP

4,4'-methylenediphenyl diisocyanate	C ≥ 5 %	Eye Irrit. 2; H319	CLP Annex VI (ATP 1)
	C ≥ 5 %	Skin Irrit. 2; H315	CLP Annex VI (ATP 1)
	C ≥ 0.1 %	Resp. Sens. 1; H334	CLP Annex VI (ATP 1)
	C ≥ 5 %	STOT SE 3; H335	CLP Annex VI (ATP 1)
o-(p-isocyanatobenzyl)phenyl isocyanate	C ≥ 5 %	Eye Irrit. 2; H319	CLP Annex VI (ATP 1)
	C ≥ 5 %	Skin Irrit. 2; H315	CLP Annex VI (ATP 1)
	C ≥ 0.1 %	Resp. Sens. 1; H334	CLP Annex VI (ATP 1)
	C ≥ 5 %	STOT SE 3; H335	CLP Annex VI (ATP 1)

### Specific concentration limits DSD

4,4'-methylenediphenyl diisocyanate	C ≥ 5 %	Xi; R36/37/38	DSD Annex VI (ATP 1)
	C ≥ 0,1 %	R42	DSD Annex VI (ATP 1)
o-(p-isocyanatobenzyl)phenyl isocyanate	C ≥ 5 %	Xi; R36/37/38	DSD Annex VI (ATP 1)
	C ≥ 0,1 %	R42	DSD Annex VI (ATP 1)

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. Old versions must be destroyed. 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.

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