

## SAFETY DATA SHEET

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. PRODUCT IDENTIFIER

Product name

**PARKETOLIT PR52**



chemius.net/M8fc5

#### 1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Relevant identified uses

One component polyurethane coating without solvents

Uses advised against

No information.

#### 1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Supplier

MITOL, tovarna lepil, d.o.o., Sežana

Address: Partizanska c. 78 Sežana, Slovenia

Phone: +386 5 73 12 300

Fax: +386 5 73 12 390

E-mail: lilijana.kocjan@mitol.si

Point of contact for safety info: Lilijana Kocjan Žorž

#### 1.4. EMERGENCY TELEPHONE NUMBER

112

+386 5 73 12 300 (8:00-16:00)

### SECTION 2. HAZARDS IDENTIFICATION

#### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

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

Skin Irrit. 2; H315 Causes skin irritation.

Skin Sens. 1; H317 May cause an allergic skin reaction.

Eye Irrit. 2; H319 Causes serious eye irritation.

Acute Tox. 4; H332 Harmful if inhaled.

Resp. Sens. 1; H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

STOT SE 3; H335 May cause respiratory irritation.

Carc. 2; H351 Suspected of causing cancer.

STOT RE 2; H373 May cause damage to organs through prolonged or repeated inhalation.

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### 2.2 LABEL ELEMENTS

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



Signal word: **Danger**

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 inhalation.

P102 Keep out of reach of children.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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.

P312 Call a POISON CENTER/doctor if you feel unwell.

P501 Dispose of contents/container in accordance with national regulation.

#### 2.2.2. Contains:

isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy(methyl-1,2-ethanediyl)) polymeric MDI

reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(pisocyanatobenzyl) phenyl isocyanate

#### 2.2.3. Special provisions

MDI notice

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.

Information according to Commission Regulation (EC) No. 2020/1449, which must appear on the label of a product containing diisocyanates in a concentration  $\geq 0.1\%$

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

### 2.3. OTHER HAZARDS

Persons who have problems with sensitivity of the airways (asthma, chronic bronchitis), should avoid contact with the product.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. SUBSTANCES

For mixtures see 3.2.

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## 3.2. MIXTURES

Name	CAS EC Index	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	REACH Registration No.
propylene carbonate	108-32-7 203-572-1 607-194-00-1	30-70	Eye Irrit. 2; H319		-
isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy(methyl-1,2-ethanediyl))	53862-89-8 - -	10-45	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Acute Tox. 4; H332 Resp. Sens. 1; H334 STOT SE 3; H335 Carc. 2; H351 STOT RE 2; H373		-
polymeric MDI	9016-87-9 - -	<20	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Acute Tox. 4; H332 Resp. Sens. 1; H334 STOT SE 3; H335 Carc. 2; H351 STOT RE 2; H373		-
'4,4'-methylenediphenyl diisocyanate [C]	101-68-8 202-966-0 615-005-00-9	<10	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Acute Tox. 4; H332 Resp. Sens. 1; H334 STOT SE 3; H335 Carc. 2; H351 STOT RE 2; H373	Skin Irrit. 2; H315: C ≥ 5 % Eye Irrit. 2; H319: C ≥ 5 % Resp. Sens. 1; H334: C ≥ 0,1 % STOT SE 3; H335: C ≥ 5 %	-
reaction mass of 4,4'- methylenediphenyl diisocyanate and o-(pisocyanatobenzyl) phenyl isocyanate	- - -	<2	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Acute Tox. 4; H332 Resp. Sens. 1; H334 STOT SE 3; H335 Carc. 2; H351 STOT RE 2; H373		-

### Notes for substances:

<b>C</b>	Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers.  In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.
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### SECTION 4. FIRST AID MEASURES

#### 4.1. DESCRIPTION OF FIRST AID MEASURES

##### General notes

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency. Symptoms of poisoning may even occur after several hours; therefore medical observation is required at least 48 hours after the event.

##### Following inhalation

Remove patient to fresh air - move out of dangerous area. If victim is not breathing give artificial respiration. In case of difficulty breathing, give oxygen to the victim. If symptoms develop and persist, seek medical attention.

##### Following skin contact

Immediately remove contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. Rinse with a polyglycol-based skin cleanser or corn oil. Wash contaminated clothes and shoes before reuse. If symptoms develop and persist, seek medical attention.

##### Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. After 5 minutes of rinsing, remove contact lenses, if present, and continue rinsing. If irritation persists, seek professional medical attention.

##### Following ingestion

Do not induce vomiting! Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Immediately consult a doctor. Show the physician the safety data sheet or label.

#### 4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

##### Inhalation

Harmful.  
Coughing, sneezing, nasal discharge, labored breathing.  
Intoxication, vertigo, headache, nausea.  
Prolonged inhalation of vapours can cause lung injury.  
Can cause sensitization.  
May cause shortness of breath and asthmatic problems.

##### Skin contact

Itching, redness, pain.  
May cause sensitisation by skin contact (symptoms: itching, redness, rashes).

##### Eye contact

Redness, tearing, pain.

##### Ingestion

May cause nausea/vomiting and diarrhea.  
May cause abdominal discomfort.  
Irritates mucous membranes in the mouth, throat, esophagus and in gastrointestinal area.

#### 4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

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### SECTION 5. FIREFIGHTING MEASURES

#### 5.1. EXTINGUISHING MEDIA

##### Suitable extinguishing media

Foam.  
Carbon dioxide (CO<sub>2</sub>).  
Fire extinguishing powder.

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### Unsuitable extinguishing media

Full water jet. Water.

### 5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

#### Hazardous combustion products

In case of heating harmful vapours/gases can be generated. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>).

Nitrogen oxides (NO<sub>x</sub>).

### 5.3. ADVICE FOR FIREFIGHTERS

#### Protective actions

In case of fire or heating do not breathe fumes/vapours. Cool containers at risk with water spray. If possible remove containers from endangered area. The reaction with water produces CO<sub>2</sub>, which can cause a dangerous increase in pressure, if contaminated containers are closed again. Closed containers may explode if they are overheated.

#### Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

#### Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### 6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

#### 6.1.1. For non-emergency personnel

##### **Protective equipment**

Use personal protective equipment (Section 8).

##### **Emergency procedures**

Ensure adequate ventilation. Remove all unauthorized persons upwind to a safe distance. Do not touch or walk through spilled material. Avoid contact with skin and eyes. Do not breathe vapour or mist. Prevent access to unprotected personnel. Prevent access to unauthorised personnel.

#### 6.1.2. For emergency responders

Use personal protective equipment.

### 6.2. ENVIRONMENTAL PRECAUTIONS

Do not allow product to reach water/drains/sewage systems or permeable soil. If accidental large entry into water or ground occurs, inform responsible authorities.

### 6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

#### 6.3.1. For containment

Stem the spill if this does not pose risks.

#### 6.3.2. For cleaning up

Stop leak if without risk. Neutralize the product (with decontaminative solution), Cover the spillage with decontamination solution for isocyanates (90% water, 8% ammonia, 2% detergent) and leave 10 minutes to react or pour with water and leave more than 30 minutes to react. The contaminated area should be cleaned with the following solution: 5% -10% sodium carbonate and 0,2-2% of liquid soap in water. Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Collect in a suitable container and dispose in accordance with the methods under Section 13. Do not absorb spillage with sawdust or other combustible material. In case of major contamination, the contaminated soil layer should be removed. Test for isocyanate vapours before allowing personnel into the area.

#### 6.3.3. Other information

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### 6.4. REFERENCE TO OTHER SECTIONS

See also Sections 8 and 13.

## SECTION 7. HANDLING AND STORAGE

### 7.1. PRECAUTIONS FOR SAFE HANDLING

#### 7.1.1. Protective measures

##### **Measures to prevent fire**

Ensure adequate ventilation. Keep away from sources of ignition - no smoking.

##### **Measures to prevent aerosol and dust generation**

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##### **Measures to protect the environment**

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#### 7.1.2. Advice on general occupational hygiene

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin and eyes. Do not breathe vapours/mist. Remove contaminated clothes and wash them before reuse. People with sensitive skin should not come into contact with the product. Before entering the dining room it is necessary to replace contaminated clothing.

### 7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

#### 7.2.1. Technical measures and storage conditions

Keep in cool and well ventilated area. Keep away from food, drink and animal feeding stuffs. Handle and open the container carefully. Keep container closed. Keep in properly labelled containers. Keep away from moisture and water. Protect from open fire, heat and direct sunlight.

#### 7.2.2. Packaging materials

Store only in original container.

#### 7.2.3. Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking.

#### 7.2.4. Storage class

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#### 7.2.5. Further information on storage conditions

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### 7.3. SPECIFIC END USE(S)

##### **Recommendations**

Do not use compressed air during filling, emptying or handling.

##### **Industrial sector specific solutions**

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. CONTROL PARAMETERS

#### 8.1.1. Occupational exposure limit values

No information.

#### 8.1.2. Information on monitoring procedures

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

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### 8.1.3. DNEL/DMEL values

#### For components

Name	Type	Exposure route	Exposure frequency	Value	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Worker	dermal	short term (systemic effects)	50 mg/kg	24 h
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Worker	inhalation	short term (systemic effects)	0,1 mg/m <sup>3</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Worker	dermal	short term (systemic effects)	28,7 mg/cm <sup>2</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Worker	inhalation	short term (systemic effects)	0,1 mg/m <sup>3</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Worker	inhalation	long term (systemic effects)	0,05 mg/m <sup>3</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Worker	inhalation	long term (systemic effects)	0,05 mg/m <sup>3</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	dermal	short term (systemic effects)	25 mg/kg	mg/kg per day
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	inhalation	short term (systemic effects)	0,05 mg/m <sup>3</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	oral	short term (systemic effects)	20 mg/kg	mg/kg per day
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	dermal	short term (local effects)	17,2 mg/cm <sup>2</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	inhalation	short term (local effects)	0,05 mg/m <sup>3</sup>	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	inhalation	long term (systemic effects)	0,025 mg/m <sup>3</sup>	systemic
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Consumer	inhalation	long term (local effects)	0,025 mg/m <sup>3</sup>	

### 8.1.4. PNEC values

#### For components

Name	Exposure route	Value	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	fresh water	1 mg/L	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	marine water	0,1 mg/L	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	soil	1 mg/kg	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	water, intermittent release	10 mg/L	
'4,4'-methylenediphenyl diisocyanate (101-68-8)	water treatment plant	1 mg/L	

## 8.2. EXPOSURE CONTROLS

### 8.2.1. Appropriate engineering control

#### Substance/mixture related measures to prevent exposure during identified uses

Handle in accordance with good industrial hygiene and safety practice. Use good personal hygiene practices – wash hands at breaks and when done working with material. Avoid contact with eyes and skin. Do not breathe vapours/aerosols. Do not eat, drink or smoke while working.

#### Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse.

#### Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration.

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### 8.2.2. Personal protective equipment

#### Eye and face protection

Safety glasses with side protection (EN 166).

#### Hand protection

Protective gloves (EN 374). Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

#### Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345:2011).

#### Respiratory protection

Wear suitable protective breathing mask (EN 136) with filter A2-P2 (EN 14387).

#### Thermal hazards

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### 8.2.3. Environmental exposure controls

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

-	<b>Physical state:</b>	liquid
-	<b>Colour:</b>	light brown
-	<b>Odour:</b>	characteristic

### Important health, safety and environmental information

-	<b>pH</b>	No information.
-	<b>Melting point/freezing point</b>	No information.
-	<b>Initial boiling point/boiling range</b>	No information.
-	<b>Flash point</b>	No information.
-	<b>Evaporation rate</b>	No information.
-	<b>Flammability (solid, gas)</b>	No information.
-	<b>Explosion limits (vol%)</b>	No information.
-	<b>Vapour pressure</b>	No information.
-	<b>Vapour density</b>	No information.
-	<b>Density</b>	<b>Density:</b> 1,10 – 1,20 g/cm <sup>3</sup> at 23 °C
-	<b>Solubility</b>	<b>Water:</b> insoluble
-	<b>Partition coefficient</b>	No information.
-	<b>Auto-ignition temperature</b>	No information.
-	<b>Decomposition temperature</b>	No information.
-	<b>Viscosity</b>	<b>Dynamic:</b> 50 mPas at 23 °C
-	<b>Explosive properties</b>	No information.
-	<b>Oxidising properties</b>	No information.
-	<b>Particle characteristics</b>	No information.



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### 9.2. OTHER INFORMATION

-	Remarks:	Isocyanates react with water.
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## SECTION 10. STABILITY AND REACTIVITY

### 10.1. REACTIVITY

Reacts with water: may cause overpressure in closed vessel (CO<sub>2</sub>).

### 10.2. CHEMICAL STABILITY

Product is stable under normal conditions of use, recommended handling and storage conditions.

### 10.3. POSSIBILITY OF HAZARDOUS REACTIONS

Product reacts slowly with water, releasing CO<sub>2</sub>, which can cause overpressure in closed containers. Danger of explosion.. MDI is not soluble in water and is heavier than water. It reacts with water, creating polyurea and CO<sub>2</sub>.

### 10.4. CONDITIONS TO AVOID

Protect from moisture and water - keep in dry place.

### 10.5. INCOMPATIBLE MATERIALS

Water, alcohols, amines, bases, and acids.

### 10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Carbon dioxide; Carbon monoxide.

Nitrogen oxides.

Hydrocarbons. HCN.

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1. INFORMATION ON HAZARD CLASSES AS DEFINED IN REGULATION (EC) NO 1272/2008

#### (a) Acute toxicity

Name	Exposure route	Type	Species	Time	Value	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	oral	LD <sub>50</sub>	rat		> 2000 mg/kg bw		read-across
'4,4'-methylenediphenyl diisocyanate (101-68-8)	dermal	LD <sub>50</sub>	rabbit	24 h	> 9400 mg/kg	OECD 402	read-across
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation (aerosol)	LC <sub>50</sub>	rat	1 h	> 2,24 mg/l	OECD 403	experimental value

**Additional information:** Harmful if inhaled.

#### (b) Skin corrosion/irritation

Name	Species	Time	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	rabbit		Irritating to skin.	OECD 404 (Acute Dermal Irritation/Corrosion)	24, 48, 72 h; read-across
'4,4'-methylenediphenyl diisocyanate (101-68-8)	human		Irritating.		weight of evidence

**Additional information:** Causes skin irritation.

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## (c) Serious eye damage/irritation

Name	Species	Time	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	human		Irritating.		weight of evidence
<b>Additional information:</b> Causes serious eye irritation.					

## (d) Respiratory or skin sensitisation

Name	Exposure route	Species	Time	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	dermal			May cause sensitisation by skin contact.		Literature
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation	Guinea pig (male/female)		May cause sensitisation by inhalation.		experimental value
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation	rat		May cause sensitisation by inhalation.		experimental value
<b>Additional information:</b> May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.						

## (e) (Germ cell) mutagenicity

Name	Type	Species	Time	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	in-vitro mutagenicity	Bacteria ( <i>S. typhimurium</i> )		Negative.	OECD 471 (EU B. 12/13)	experimental value
'4,4'-methylenediphenyl diisocyanate (101-68-8)	in-vivo mutagenicity	rat	3 h	Negative.	OECD 474	experimental value

## (f) Carcinogenicity

Name	Exposure route	Type	Species	Time	Value	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation (aerosol)	NOAEC	rat	728 days	1 mg/m3	No effect	OECD 451 Carcinogenicity Studies	5 days per week, 6 hours per day; by analogy
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation (aerosol)	LOAEL	rat (respiratory ways)	728 days	6 mg/m3		OECD 451 Carcinogenicity Studies	5 days per week, 6 hours per day; by analogy

## (g) Reproductive toxicity

Name	Reproductive toxicity type	Type	Species	Time	Value	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Developmental toxicity	NOAEL (P)	rat (female)	10 days	4 mg/m3	Maternal toxicity	OECD 414	6 h per day; by analogy
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Developmental toxicity	NOAEL (F1)	rat (female)	10 days	4 mg/m3	Teratogenicity	OECD 414	6 h per day; by analogy

## Summary of evaluation of the CMR properties

Suspected of causing cancer.

## (h) STOT-single exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation		human						
<b>Additional information:</b> STOT - single exposure: May cause respiratory irritation.									

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## (i) STOT-repeated exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation (aerosol)	NOAEC	rat	104 weeks		0,2 mg/m <sup>3</sup>	No effect.	OECD 453	6 h per day, 5 days per week
'4,4'-methylenediphenyl diisocyanate (101-68-8)	inhalation (aerosol)	LOAEC	rat	104 weeks	Respiratory tract	1 mg/m <sup>3</sup>		OECD 453	6 h per day, 5 days per week

**Additional information:** May cause damage to organs through prolonged or repeated exposure.

## (j) Aspiration hazard

No information.

## 11.2. INFORMATION ON OTHER HAZARDS

### 11.2.1. Endocrine disrupting properties

No information.

### 11.2.2. Other information

No information.

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1. TOXICITY

#### 12.1.1. Acute (short-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	LC <sub>50</sub>	> 1000 mg/L	96 h	fish	<i>Brachydanio rerio</i>	OECD 203	Static system, Fresh water, read-across
	EC <sub>50</sub>	129,7 mg/L	24 h	daphnia	<i>Daphnia magna</i>	202 (Daphnia sp. Acute Immobilisation Test)	Static system, Fresh water, read-across
	EC <sub>50</sub>	> 1640 mg/L	72 h	Aquatic plants	<i>Desmodium subspicatus</i>	OECD 201	Static system, Fresh water, read-across
	EC <sub>50</sub>	> 100 mg/L	3 h	microorganisms	Activated sludge	OECD 209 Activated Sludge, Respiration Inhibition Test	Static system, Fresh water, read-across

#### 12.1.2. Chronic (long-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	NOEC	≥ 10 mg/l	21 days	Magna Daphnia	<i>Daphnia magna</i>	OECD 211	semi-static, fresh water, read-across

### 12.2. PERSISTENCE AND DEGRADABILITY

#### 12.2.1. Abiotic degradation, physical- and photo-chemical elimination

No information.

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## 12.2.2. Biodegradation

### For components

Substance (CAS Nr.)	Type	Rate	Time	Evaluation	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	aerobic		28 days	0 %	OECD 302C Test	read-across

## 12.3. BIOACCUMULATIVE POTENTIAL

### 12.3.1. Partition coefficient

#### For components

Substance (CAS Nr.)	Media	Value	Temperature	pH	Concentration	Method
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Octanol-water (log Pow)	4,51				

### 12.3.2. Bioconcentration factor (BCF)

#### For components

Substance (CAS Nr.)	species	Organism	Value	Duration	Evaluation	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	organism	<i>Cyprinus carpio</i>	92 – 200	4 weeks		OECD 305	experimental value

## 12.4. MOBILITY IN SOIL

### 12.4.1. Known or predicted distribution to environmental compartments

No information.

### 12.4.2. Surface tension

No information.

### 12.4.3. Adsorption/Desorption

#### For components

Substance (CAS Nr.)	Type	Criterion	Value	Evaluation	Method	Remark
'4,4'-methylenediphenyl diisocyanate (101-68-8)	Soil	Henry constant (H)	8,9E-7 Pa.m <sup>3</sup> / mol			25 °C

## 12.5. RESULTS OF PBT AND VPVB ASSESSMENT

No evaluation.

## 12.6. ENDOCRINE DISRUPTING PROPERTIES

No information.

## 12.7. ADDITIONAL INFORMATION

### For product

Do not allow to reach ground water, water courses or sewage system.

Isocyanates react with water to form an insoluble polyurea.

Product is not classified as dangerous for environment.

### For components

**Substance: '4,4'-methylenediphenyl diisocyanate**

Under normal use conditions no negative environmental effects expected.

# SECTION 13. DISPOSAL CONSIDERATIONS

## 13.1. WASTE TREATMENT METHODS

### 13.1.1. Product / Packaging disposal

#### Waste chemical

Dispose according to regulations. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Do not allow product to reach drains/sewage systems.

## SAFETY DATA SHEET

### Waste codes / waste designations according to LoW

08 04 09\* - waste adhesives and sealants containing organic solvents or other dangerous substances

### Packaging

The packaging must be disposed in accordance with local or national regulations. Deliver completely emptied containers to approved waste disposal authorities.

### Waste codes / waste designations according to LoW

15 01 02 - plastic packaging

#### 13.1.2. Waste treatment-relevant information

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#### 13.1.3. Sewage disposal-relevant information

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#### 13.1.4. Other disposal recommendations

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## SECTION 14. TRANSPORT INFORMATION

### 14.1. UN NUMBER OR ID NUMBER

Not applicable.

### 14.2. UN PROPER SHIPPING NAME

ADR, RID, IMDG, ADN, IATA: Not dangerous according to transport regulations.

### 14.3. TRANSPORT HAZARD CLASS(ES)

Not applicable.

### 14.4. PACKING GROUP

Not applicable.

### 14.5. ENVIRONMENTAL HAZARDS

NO.

### 14.6. SPECIAL PRECAUTIONS FOR USER

Not applicable.

### 14.7. MARITIME TRANSPORT IN BULK ACCORDING TO IMO INSTRUMENTS

Not applicable.

## SECTION 15. REGULATORY INFORMATION

### 15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

#### 15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

EU limit values and category: A(h) 750 g/l. VOC Content: ≤ 750 g/l

## SAFETY DATA SHEET

### 15.1.2. Special instructions

Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Terms of restriction: 56 Methylenediphenyl diisocyanate (MDI):

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.

Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Terms of restriction: 74.

### 15.2. CHEMICAL SAFETY ASSESSMENT

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## SECTION 16. OTHER INFORMATION

### Indication of changes

-

### Abbreviations and acronyms

ATE - Acute Toxicity Estimate

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

CEN - European Committee for Standardisation

C&L - Classification and Labelling

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CAS# - Chemical Abstracts Service number

CMR - Carcinogen, Mutagen, or Reproductive Toxicant

CSA - Chemical Safety Assessment

CSR - Chemical Safety Report

DMEL - Derived Minimal Effect Level

DNEL - Derived No Effect Level

DPD - Dangerous Preparations Directive 1999/45/EC

DSD - Dangerous Substances Directive 67/548/EEC

DU - Downstream User

EC - European Community

ECHA - European Chemicals Agency

EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)

EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)

EEC - European Economic Community

EINECS - European Inventory of Existing Commercial Substances

ELINCS - European List of notified Chemical Substances

EN - European Standard

EQS - Environmental Quality Standard

EU - European Union

Euphrac - European Phrase Catalogue

EWG - European Waste Catalogue (replaced by LoW – see below)

GES - Generic Exposure Scenario

GHS - Globally Harmonized System

IATA - International Air Transport Association

ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air

IMDG - International Maritime Dangerous Goods

IMSBC - International Maritime Solid Bulk Cargoes

IT - Information Technology

IUCLID - International Uniform Chemical Information Database

IUPAC - International Union for Pure Applied Chemistry

JRC - Joint Research Centre

## SAFETY DATA SHEET

Kow - octanol-water partition coefficient  
LC<sub>50</sub> - Lethal Concentration to 50 % of a test population  
LD<sub>50</sub> - Lethal Dose to 50% of a test population (Median Lethal Dose)  
LE - Legal Entity  
LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)  
LR - Lead Registrant  
M/I - Manufacturer / Importer  
MS - Member States  
MSDS - Material Safety Data Sheet  
OC - Operational Conditions  
OECD - Organization for Economic Co-operation and Development  
OEL - Occupational Exposure Limit  
OJ - Official Journal  
OR - Only Representative  
OSHA - European Agency for Safety and Health at work  
PBT - Persistent, Bioaccumulative and Toxic substance  
PEC - Predicted Effect Concentration  
PNEC(s) - Predicted No Effect Concentration(s)  
PPE - Personal Protection Equipment  
(Q)SAR - Qualitative Structure Activity Relationship  
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006  
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail  
RIP - REACH Implementation Project  
RMM - Risk Management Measure  
SCBA - Self-Contained Breathing Apparatus  
SDS - Safety data sheet  
SIEF - Substance Information Exchange Forum  
SME - Small and Medium sized Enterprises  
STOT - Specific Target Organ Toxicity  
(STOT) RE - Repeated Exposure  
(STOT) SE - Single Exposure  
SVHC - Substances of Very High Concern  
UN - United Nations  
vPvB - Very Persistent and Very Bioaccumulative

### Key literature references and sources for data

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### List of relevant H phrases

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 .

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.