

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2


Revision: 02.02.2012

**1 Identification of the substance/mixture and of the company/undertaking**

- **Product identifier**
- **Trade name:** **CARSYSTEM UNIFLEX-PU**
- **Relevant identified uses of the substance or mixture and uses advised against** Not determined
- **Application of the substance / the preparation**  
Adhesives  
Sealant
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Vosschemie GmbH  
Esinger Steinweg 50  
D-25436 Uetersen  
Phone: +49 (0)4122 717 0; Fax: +49 (0)4122 717158; info@vosschemie.de
- **Further information obtainable from:**  
Abteilung Labor / +49 (0)4122 717 0  
s.schaller@vosschemie.de
- **Emergency telephone number:**  
Giftinformationszentrum (GIZ)-Nord, Goettingen, Deutschland  
Phone: +49 (0)551 19240, +49 (0)551 383180

**2 Hazards identification**

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

 Xn; Sensitising

R42: May cause sensitisation by inhalation.

- **Label elements**
- **Labelling according to EU guidelines:**
- **Code letter and hazard designation of product:**

 Xn Harmful

- **Hazard-determining components of labelling:**  
4,4'-methylenediphenyl diisocyanate
- **Risk phrases:**  
42 May cause sensitisation by inhalation.
- **Safety phrases:**  
2 Keep out of the reach of children.  
23 Do not breathe vapour/spray.  
25 Avoid contact with eyes.  
36 Wear suitable protective clothing.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
60 This material and its container must be disposed of as hazardous waste.
- **Special labelling of certain preparations:**  
Contains isocyanates. See information supplied by the manufacturer
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

(Contd. on page 2)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

· vPvB: Not applicable.

(Contd. of page 1)

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 1330-20-7 EINECS: 215-535-7 Reg.nr.: 01-2119486136-34 01-2119488216-32	xylene, mixture of isomers ☒ Xn R20/21; ☒ Xi R38 R10 ☠ Flam. Liq. 3, H226; ☠ STOT RE 2, H373; Asp. Tox. 1, H304; ☠ Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	2.5-10%
CAS: 101-68-8 EINECS: 202-966-0 Reg.nr.: 01-2119457014-47	4,4'-methylenediphenyl diisocyanate ☒ Xn R20-40-48/20; ☒ Xn R42/43; ☒ Xi R36/37/38 Carc. Cat. 3 ☠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ☠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	0.1-1.0%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### 4 First aid measures

- **Description of first aid measures**
- **General information:**  
Personal protection for the First Aider.  
Take affected persons out of danger area and lay down.  
Immediately remove any clothing soiled by the product.
- **After inhalation:**  
Supply fresh air; consult doctor in case of complaints.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**  
Treat affected skin with cotton wool or cellulose. Then wash and rinse thoroughly with water and a mild cleaning agent.  
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **Information for doctor:**  
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.  
· **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.

(Contd. on page 3)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

**Trade name: CARSYSTEM UNIFLEX-PU**

(Contd. of page 2)

- **Advice for firefighters**
- **Protective equipment:**  
Do not inhale explosion gases or combustion gases.  
Wear self-contained respiratory protective device.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Do not seal receptacle gas tight.  
Danger of bursting.  
Dispose of the material collected according to regulations.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the eyes and skin.
- **Information about fire - and explosion protection:**  
Fumes can combine with air to form an explosive mixture.  
Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store only in the original receptacle.  
Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.  
Store receptacle in a well ventilated area.  
Protect from frost.
- **Recommended storage temperature:** 5 °C - 32 °C
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.

(Contd. on page 4)

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GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

(Contd. of page 3)

## · Control parameters

## · Ingredients with limit values that require monitoring at the workplace:

**1330-20-7 xylene, mixture of isomers**

WEL (Great Britain)	Short-term value: 441 mg/m <sup>3</sup> , 100 ppm Long-term value: 220 mg/m <sup>3</sup> , 50 ppm Sk; BMGV
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IOELV (EU)	Short-term value: 442 mg/m <sup>3</sup> , 100 ppm Long-term value: 221 mg/m <sup>3</sup> , 50 ppm Skin
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**101-68-8 4,4'-methylenediphenyl diisocyanate**

WEL (Great Britain)	Short-term value: 0.07 mg/m <sup>3</sup> Long-term value: 0.02 mg/m <sup>3</sup> Sen; as -NCO
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## · DNELs

**1330-20-7 xylene, mixture of isomers**

Oral	Long-term exposure - systemic effects	1.6 mg/kg bw/day (general population)
Dermal	Long-term exposure - systemic effects	108 mg/kg bw/day (general population) 180 mg/kg bw/day (worker)
Inhalative	Acute/short-term exposure - local effects	174 mg/m <sup>3</sup> (general population) 289 mg/m <sup>3</sup> (worker)
	Acute/short-term exposure - systemic effects	174 mg/m <sup>3</sup> (general population) 289 mg/m <sup>3</sup> (worker)
	Long-term exposure - systemic effects	14.8 mg/m <sup>3</sup> (general population) 77 mg/m <sup>3</sup> (worker)

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

Dermal	Acute/short-term exposure - local effects	28.7 mg/cm <sup>2</sup> (worker)
Inhalative	Acute/short-term exposure - local effects	0.1 mg/m <sup>3</sup> (worker)
	Long-term exposure - local effects	0.05 mg/m <sup>3</sup> (worker)
	Long-term exposure - systemic effects	0.05 mg/m <sup>3</sup> (worker)

## · PNECs

**1330-20-7 xylene, mixture of isomers**

PNEC STP	6.58 mg/l (-)
PNEC aqua	0.327 mg/l (freshwater)
	0.327 mg/l (marine water)
	0.327 mg/l (intermittent releases)
PNEC sediment	12.46 mg/kg (freshwater)
	12.46 mg/kg (marine water)

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

PNEC aqua	> 1 mg/l (freshwater) > 0.1 mg/l (marine water)
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## · Ingredients with biological limit values:

**1330-20-7 xylene, mixture of isomers**

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

(Contd. of page 4)

BMGV (Great Britain)	650 mmol/mol creatinine Medium: urine Sampling time: post shift Parameter: methyl hippuric acid
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· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Immediately remove all soiled and contaminated clothing

Do not eat, drink, smoke or sniff while working.

Do not inhale gases / fumes / aerosols.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

· **Respiratory protection:**

Ensure good ventilation/exhaustion at the workplace.

Adhere to the workplace limit values and / or other threshold values.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Short term filter device:

Filter AX

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Check the permeability prior to each renewed use of the glove.

· **Material of gloves**

Fluorocarbon rubber (Viton)

Butyl rubber, BR

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

GB

(Contd. on page 6)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

(Contd. of page 5)

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Pasty
Colour:	According to product specification
Odour:	Solvent-like

· **Change in condition**

Boiling point/Boiling range: Not applicable

· **Flash point:** > 200 °C

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· **Vapour pressure:** Not determined.

· **Density at 20 °C:** ~1.2 g/cm<sup>3</sup>

· **Solubility in / Miscibility with water:**

Insoluble.  
Reacts with water.

VOC (EC) 2004/42/EU/II(b) (840) 160

· **Other information** No further relevant information available.

### 10 Stability and reactivity

· **Reactivity**

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

· **Possibility of hazardous reactions**

Reacts with alcohols, amines, aqueous acids and alkalis.

Reacts with numerous chemical compounds, especially those with mobile hydrogen atoms.

Danger of bursting.

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

· **Hazardous decomposition products:**

Formation of toxic gases is possible during heating or in case of fire.

Hydrogen chloride (HCl)

Nitrogen oxides

### 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

1330-20-7 xylene, mixture of isomers

Oral	LD50	> 4000 mg/kg (rat)
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(Contd. on page 7)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

(Contd. of page 6)

Dermal	LD50	> 1700 mg/kg (rabbit)
Inhalative	LC50 /4h	21.7 mg/l (rat) (Vapour) 5000 ppm (rat) (Gas)
<b>101-68-8 4,4'-methylenediphenyl diisocyanate</b>		
Oral	LD50	2200 mg/kg (mouse) > 2000 mg/kg (rat) (84/449/EWG, B.1)
Dermal	LD50	> 9400 mg/kg (rabbit) (OECD 402)
Inhalative	LC50 /4h	> 0.56 mg/l (rat) (OECD 403) 368 mg/m <sup>3</sup> (rat) (OECD 403)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.

- **Subacute to chronic toxicity:**

<b>101-68-8 4,4'-methylenediphenyl diisocyanate</b>		
Inhalative	LOAEL	1 mg/m <sup>3</sup> (rat) (OECD 453, 2a, 6h/d)
	NOAEL	0.2 mg/m <sup>3</sup> (rat) (OECD 453, 2a, 6h/d)

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

- **Sensitisation**

Sensitization possible through skin contact.

May cause sensitisation by inhalation.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

- **Carcinogenicity**

<b>101-68-8 4,4'-methylenediphenyl diisocyanate</b>		
Inhalative	LOAEL (carcinogenicity)	6 mg/m <sup>3</sup> (rat) (OECD 453, 2a, 6h/day)

- **Reproductive toxicity/Fertility** Not determined

- **Reproductive toxicity/Teratogenicity**

<b>101-68-8 4,4'-methylenediphenyl diisocyanate</b>		
Inhalative	NOAEL (developmental toxicity)	4000 mg/l (rat) (OECD 414, 20d, 6h/day)
	NOAEL (teratogenicity)	12000 mg/l (rat) (OECD 414, 20d, 6h/day)
	NOAEL (maternally)	4000 mg/l (rat) (OECD 414, 20d, 6h/day)

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

<b>1330-20-7 xylene, mixture of isomers</b>		
EC50	> 175 mg/l (activated slugde)	
EC50/48h	3.82 mg/l (daphnia magna)	
EC50/72h	4.7 mg/l (Pseudokirchneriella subcapitata)	
LC50/96h	7.6 mg/l (oncorhynchus mykiss)	
NOEC	> 1.3 mg/l (oncorhynchus mykiss) (56 d)	

(Contd. on page 8)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

(Contd. of page 7)

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

EC50	> 1000 mg/l (daphnia magna) (24h, OECD 202)
EC50/3h	> 100 mg/l (activated slugde) (OECD 209)
EC50/72h	> 1640 mg/l (scenedesmus subspicatus) (OECD 201)
LC50/96h	> 1000 mg/l (danio rerio) (OECD 203)
NOEC	> 1000 mg/l (Eisenia fetida) (14d, OECD 207)
	> 10 mg/l (daphnia magna) (21d, OECD 202)

· **Persistence and degradability****1330-20-7 xylene, mixture of isomers**

Biodegradation 87.8 % (-) (28d)

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

Biodegradation 0 % (activated slugde) (28d, OECD 302 C)

· **Behaviour in environmental systems:**· **Bioaccumulative potential****1330-20-7 xylene, mixture of isomers**

BCF 6 - 23.4 (-)

log Pow &gt; 3 (-)

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

BCF 200 (Cyprinus carpio) (OECD 305 E, 28 d)

· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:** Do not allow product to reach ground water, water course or sewage system.· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.**13 Disposal considerations**· **Waste treatment methods**· **Recommendation** Disposal must be made according to official regulations.· **European waste catalogue**

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

08 04 10 waste adhesives and sealants other than those mentioned in 08 04 09

· **Uncleaned packaging:**· **Recommendation:** Disposal must be made according to official regulations.**14 Transport information**· **UN-Number**· **ADR, ADN, IMDG, IATA** Void· **UN proper shipping name**· **ADR, ADN, IMDG, IATA** Void

(Contd. on page 9)

GB



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

Trade name: CARSYSTEM UNIFLEX-PU

(Contd. of page 8)

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|--|--|
| · <b>Transport hazard class(es)</b>  |  |
| · <b>ADR, ADN, IMDG, IATA</b>  |  |
| · <b>Class</b>   | Void   |
| · <b>Packing group</b>   |  |
| · <b>ADR, IMDG, IATA</b>   | Void   |
| · <b>Special precautions for user</b>  | Not applicable.                                      |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                                      |
| · <b>Transport/Additional information:</b>                                       | Not dangerous according to the above specifications. |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Information about limitation of use:**  
Employment restrictions concerning juveniles must be observed.  
Employment restrictions concerning pregnant and lactating women must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
  - H226 Flammable liquid and vapour.
  - H304 May be fatal if swallowed and enters airways.
  - 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 through prolonged or repeated exposure.
- **Relevant hazard statements**
  - R10 Flammable.
  - R20 Harmful by inhalation.
  - R20/21 Harmful by inhalation and in contact with skin.
  - R36/37/38 Irritating to eyes, respiratory system and skin.
  - R38 Irritating to 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.
- **Department issuing MSDS:** Abteilung Labor
- **Contact:** Frau S. Schaller

(Contd. on page 10)

GB

**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 03.01.2013

V - 2

Revision: 02.02.2012

**Trade name: CARSYSTEM UNIFLEX-PU**

(Contd. of page 9)

**· Abbreviations and acronyms:**

*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*

*ICAO: International Civil Aviation Organization*

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*VOC: Volatile Organic Compounds (USA, EU)*

*DNEL: Derived No-Effect Level (REACH)*

*PNEC: Predicted No-Effect Concentration (REACH)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

**· \* Data compared to the previous version altered.**