

PT SAFE PLUS HM/LC

Revision date: 23.02.2022

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

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Further trade names

1-K PUR Windscreen adhesive

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

1K-PU-Adhesives, sealants

Uses advised against

No information available.

1.3. Details of the supplier of the safety data sheet

Company name:	PMA/TOOLS AG	
Street:	Siemensring 42	
Place:	D-47877 Willich - Germany	
Telephone:	+49 2154 922230	Telefax: +49 2154 922255
e-mail:	info@pma-tools.de	
Contact person:	Michael Münter	
e-mail:	msds@pma-tools.de	(Please DO NOT use for requesting Safety Data Sheets.)
Internet:	www.pma-tools.de	
Responsible Department:	Laboratory	

1.4. Emergency telephone number:

Telephone number of the company in case of emergencies (24 h):
+49 (0) 700 / 24 112 112 (PMR)
+1 872 5888271 (PMR)

Emergency information services / official advisory body:
<UK> National Poisons Information Service (24 h): 0870 600 6266 (UK only)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Resp. Sens. 1; H334

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation****Hazard components for labelling**

4,4'-methylenediphenyl diisocyanate

Signal word: Danger**Pictograms:****Hazard statements**

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statementsP261 Avoid breathing vapour.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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Special labelling of certain mixtures

EUH204 Contains isocyanates. May produce an allergic reaction.
As from 24 August 2023 adequate training is required before industrial or professional use.

Additional advice on labelling

Further information: <https://www.feica.eu/PUinfo>

2.3. Other hazards

Persons already sensitised to diisocyanates may develop allergic reactions when using this product.
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures**Chemical characterization**

1K-PU-Adhesives, sealants

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
101-68-8	4,4'-methylenediphenyl diisocyanate			0,1 - < 1 %
	202-966-0	615-005-00-9	01-2119457014-47	
	Carc. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1B, STOT SE 3, STOT RE 2; H351 H332 H315 H319 H334 H317 H335 H373			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures**General information**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

After inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

Warning: Symptoms / delayed effects.

After contact with skin

Wash with plenty of soap and water. After cleaning apply high-fat content skin care cream. Change contaminated, saturated clothing. In case of skin reactions, consult a physician.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Call a physician immediately.

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

Respiratory tract: Irritation to respiratory tract, Cough, Dyspnoea

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

May cause sensitization by skin contact.

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

Treat symptomatically.

SECTION 5: Firefighting measures

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5.1. Extinguishing media**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.
Water, Carbon dioxide (CO₂), Foam, Dry extinguishing powder.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Gases/vapours, toxic

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
Wear personal protection equipment (refer to section 8).

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.
Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

See section 8.

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

Wash hands before breaks and after work.
When using do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Provide adequate ventilation as well as local exhaustion at critical locations.
Recommended storage temperature: 5 - 35 °C

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
-	Isocyanates, all (as -NCO) Except methyl isocyanate	-	0.02		TWA (8 h)	WEL
		-	0.07		STEL (15 min)	WEL

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DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
101-68-8	4,4'-methylenediphenyl diisocyanate		
Worker DNEL, acute	dermal	systemic	50 mg/kg bw/day
Worker DNEL, acute	inhalation	systemic	0,1 mg/kg bw/day
Worker DNEL, acute	dermal	local	28,7 mg/cm ²
Worker DNEL, acute	inhalation	local	0,1 mg/m ³
Worker DNEL, long-term	inhalation	systemic	0,05 mg/m ³
Worker DNEL, long-term	inhalation	local	0,05 mg/m ³
Consumer DNEL, acute	dermal	systemic	25 mg/kg bw/day
Consumer DNEL, acute	inhalation	systemic	0,05 mg/m ³
Consumer DNEL, acute	oral	systemic	20 mg/kg bw/day
Consumer DNEL, acute	dermal	local	17,2 mg/cm ²
Consumer DNEL, acute	inhalation	local	0,05 mg/m ³
Consumer DNEL, long-term	inhalation	systemic	0,025 mg/m ³
Consumer DNEL, long-term	inhalation	local	0,025 mg/m ³

PNEC values

CAS No	Substance	
Environmental compartment	Value	
101-68-8	4,4'-methylenediphenyl diisocyanate	
Freshwater	1 mg/l	
Marine water	0,1 mg/l	
Micro-organisms in sewage treatment plants (STP)	1 mg/l	
Soil	1 mg/kg	

8.2. Exposure controls**Appropriate engineering controls**

Use only outdoors or in a well-ventilated area. If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Eye/face protection

Wear eye protection/face protection. (EN 166).

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Breakthrough times and swelling properties of the material must be taken into

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consideration.

Wear suitable gloves. (EN 374).

Recommended material: NBR (Nitrile rubber)

Thickness of the glove material: $\geq 0,4$ mmBreakthrough time (maximum wearing time): INDEX No. 2, > 30 Min. / INDEX No. 6, > 480 Min.

Replace when worn.

Skin protection

Use personal protection equipment.

When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. (89/686/EWG).

Recommended protective clothing articles: compliant EN 14605 / EN 13982.

Respiratory protection

In case of dangerous gases, vapours or dusts self-contained breathing apparatus or suitable masks and filters need to be advised. In case of inadequate ventilation wear respiratory protection.

Suitable respiratory protection apparatus: particle filter ABEK-P2 (EN 14387).

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	solid (Paste)	
Colour:	black	
Odour:	characteristic	
pH-Value:		No data available

Changes in the physical state

Melting point/freezing point:		No data available
Boiling point or initial boiling point and boiling range:		No data available
Flash point:		No data available
Sustaining combustion:		Not sustaining combustion

Flammability

Solid:		No data available
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Explosive properties

No data available

Lower explosion limits:		No data available
Upper explosion limits:		No data available

Self-ignition temperature

Solid:		No data available
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Vapour pressure:		No data available
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Density (at 20 °C):		1,25 g/cm ³
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Water solubility:		No data available
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Solubility in other solvents

No data available / not applicable

Partition coefficient n-octanol/water:		No data available
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Viscosity / dynamic:		No data available
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Viscosity / kinematic:		No data available
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Relative vapour density:		No data available
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Evaporation rate:		No data available
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9.2. Other information

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No data available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reacts with : Water, Alcohols, Amines

Reacts with : Humidity (Danger of bursting container. Formation of: Carbon dioxide (CO₂)).**10.2. Chemical stability**

The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

See 10.1 Reactivity

10.4. Conditions to avoid

Humidity

10.5. Incompatible materials

See 10.1 Reactivity

10.6. Hazardous decomposition products

Exothermal decomposition with formation of: Isocyanate

Reacts with : Humidity (Danger of bursting container. Formation of: Carbon dioxide (CO₂)).**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute toxicity**

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]. The ecotoxicological properties of this mixture are determined by the ecotoxicological properties of the single components (see section 3).

Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

ATEmix calculated

ATE (oral) 200,0 mg/kg; ATE (dermal) 940,0 mg/kg

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
101-68-8	4,4'-methylenediphenyl diisocyanate				
	oral	LD50 mg/kg	>2.000	Rat	
	dermal	LD50 mg/kg	>9.400	Rabbit	OECD 402
	inhalation vapour	ATE	11 mg/l		
	inhalation dust/mist	LC50 mg/l	>2,24	Rat	OECD 403

Irritation and corrosivity

Irritant

Hazardous ingredients: 4,4'-methylenediphenyl diisocyanate

Exposure time: 4 h / Species: Rabbit / Method: OECD 404

Sensitising effects

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

Hazardous ingredients: 4,4'-methylenediphenyl diisocyanate / Species: Guinea pig / Method: OECD 406

Carcinogenic/mutagenic/toxic effects for reproduction

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Carcinogenicity:

Hazardous ingredients: 4,4'-methylenediphenyl diisocyanate

Result: carcinogenic

Species: Rat (male-female) / Exposure route: Inhalation Aerosol / Exposure time: 2 y (6 h/d) / Method: OECD 453 (Combined Chronic Toxicity / Carcinogenicity Studies).

Germ cell mutagenicity:

Result: negative.

Reproductive toxicity:

No data available

STOT-single exposure

No data available

STOT-repeated exposure

Hazardous ingredients:

Result: NOAEL 0,0002 mg/L

Exposure route: Inhalation: Aerosols / Exposure time: main: 2y; satellite: 1 (y6 h/d; 5 d/w) / Species: Rat /

Method: OECD 453

Aspiration hazard

No data available

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information**12.1. Toxicity**

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP] The ecotoxicological properties of this mixture are determined by the ecotoxicological properties of the single components (see section 3).

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
101-68-8	4,4'-methylenediphenyl diisocyanate					
	Acute fish toxicity	LC50 >1000 mg/l	96 h	Brachydanio rerio (zebra-fish)		OECD 203
	Acute algae toxicity	ErC50 >1640 mg/l	72 h	Scenedesmus subspicatus		OECD 201
	Crustacea toxicity	NOEC 10 mg/l	21 d	Daphnia magna (Big water flea)		OECD 211
	Acute bacteria toxicity	(EC50 100 mg/l)	3 h	activated sludge		OECD 209

12.2. Persistence and degradability

There are no data available on the mixture itself.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
101-68-8	4,4'-methylenediphenyl diisocyanate			
	Aerobic biological treatment - OECD 301F	0%	28	
	Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

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There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
101-68-8	4,4'-methylenediphenyl diisocyanate	4,51

BCF

CAS No	Chemical name	BCF	Species	Source
101-68-8	4,4'-methylenediphenyl diisocyanate	92-200	Cyprinus carpio (Common Carp)	OECD 305

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment. Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains.

Consult the appropriate authorities about waste disposal. Dispose of waste according to applicable legislation.

The waste key according to the European Waste Catalogue (EWC number) refers to the real wastes origin and therefore is not product- but use-oriented.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Recommendation: 08 04 09 Adhesives, sealants

List of Wastes Code - residues/unused products

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other hazardous substances; hazardous waste

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number:**

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

14.4. Packing group:

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)**14.1. UN number:**

No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name:

No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es):

No dangerous good in sense of this transport regulation.

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14.4. Packing group: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: No dangerous good in sense of this transport regulation.

14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.

14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.

14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 56

2010/75/EU (VOC): 0,3 %

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning. Causes allergic hypersensitivity reactions.

Additional information

Berufsgenossenschaftliche Informationen (BGI): BGI 524 (M 044) Isocyanate

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,4,8,9,10,11,12,13,16.

Abbreviations and acronyms

ADN: Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways).

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

ATE: Acute Toxicity Estimate.

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AwSV: Anlagenverordnung wassergefährdender Stoffe (Regulation on facilities handling substances dangerous to water).

BGI: Berufsgenossenschaftliche Informationen (trade association information).

BGR: Berufsgenossenschaftliche Regeln (trade association regulation).

CAS: Chemical Abstracts Service.

CEN: Comité Européen de Normalisation European (Committee for Standardization).

CLP: Classification, Labelling and Packaging of substances and mixtures (REGULATION (EC) No 1272/2008).

DIN: Deutsches Institut für Normung (German institute for standardization).

DMEL: Derived Minimum Effect Level.

DNEL: Derived No Effect Level.

EC: European Community.

EC50: Half maximal effective concentration.

ECHA: European Chemicals Agency.

EG: Europäische Gemeinschaft (European Community).

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

EN: European Norms.

GHS: Globally Harmonized System of Classification and Labelling of Chemicals.

IATA-DGR: International Air Transport Association - Dangerous Goods Regulations.

IBC: Intermediate Bulk Container.

IC50 / ErC50: Inhibitory concentration, 50 %.

ICAO-TI: International Civil Aviation Organization - Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Code for Dangerous Goods.

ISO: International Organization for Standardization.

IUPAC: International Union for Pure and Applied Chemistry.

LC50: Lethal concentration, 50 %.

LD50: Lethal dose, 50 %.

log Kow (Pow): Partition coefficient n-octanol/water.

LQ: Limited Quantities.

MARPOL: International Convention for the Prevention of Marine Pollution from Ships.

OECD: Organisation for Economic Co-operation and Development.

PBT: persistent, bioaccumulative and toxic.

PNEC: Predicted No Effect Concentration.

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006).

RID: Règlement concernant le transport International ferroviaire de marchandises Dangereuses (Regulation concerning the International Carriage of Dangerous Goods by Rail).

SVHC: Substances of Very High Concern.

STOT - RE: Specific Target Organ Toxicity - Repeated Exposure.

STOT - SE: Specific Target Organ Toxicity - Single Exposure.

TRGS: Technische Regel für Gefahrstoffe (technical guideline for the handling of hazardous materials).

UN: Untited Nations.

VOC: Volatile organic compounds.

vPvB: very persistent and very bioaccumulative.

WGK: Wassergefährdungsklasse (water hazard class).

Relevant H and EUH statements (number and full text)

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.

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H373 May cause damage to organs through prolonged or repeated exposure.
EUH204 Contains isocyanates. May produce an allergic reaction.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)