

SECTION 1: SUBSTANCE/MIXTURE IDENTIFICATION AND MANUFACTURER/SUPPLIER IDENTIFICATION

1.1. Product identification

POLYURETHANE SEALANT PU UK

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

One component, elastic adhesive / sealant for applications in automotive industry.

*Identified uses	Industrial	Professional	Consumer
Preparation of industrial adhesives and sealants	SU: 10 ERC: 2 PROC: 3, 4, 5, 8a, 8b, 9 PC:1	-	-
Industrial uses of adhesives and sealants	SU: 17, 19 ERC: 5, 8b PROC: 10, 8a, 8b PC: 1	SU: 17, 19 ERC: 5, 8b PROC: 10, 8a, 8b PC: 1	-
How to apply, chemical, industrial laboratory	PROC: 15 PC: 1,21	-	-

1.3. Data of the safety data sheet supplier

Przedsiębiorstwo RANAL Sp. z o.o.

Ul. Łódzka 3
PL 42-240 Rudniki k. Częstochowy, PL
Tel.: +48 34 329 45 03
Fax: +48 34 320 12 16
Registration number: 000029202

Person responsible for the safety data sheet:
ranal@ranal.pl

1.4. Emergency telephone

+48 34 329-45-03 (7:30am - 03:30pm)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

The mixture was classified as dangerous according to current Regulation EC 1272/2008 (CLP) (and following amendments and annexes). The product requires safety data sheet according to Regulation EC 1907/2006 and following amendments. All the other additional information concerning health and/or environmental hazards to be found in sections 11 and 12 of this Material Safety Data Sheet.

Classification 1272/2008/EC:

*Respiratory sensitization, category 1, H334, May cause allergy or asthma symptoms or breathing difficulties if inhaled.

2.2. Label elements

*Warning label according to Regulation (CE) 1272/2008 (CLP) together with following changes and adjustments.

Contains:

Diphenylmethane diisocyanate, isomers and homologues.

Hazard pictograms:



Signal word: **Danger.**

Risk index:

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

EUH204 Contains isocyanates. May produce an allergic reaction.

Safety index:

*P284 In case of insufficient ventilation use individual respiratory protection measures.

P304+P341 IF INHALED: In case of breathing difficulties take the victim outside to the fresh air and ensure comfortable position for breathing.

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

2.3. Other hazards

*Based on available data, the product does not contain more than 0,1% of PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable.

3.2. Mixtures

Product identification: POLYURETHANE SEALANT PU UK.

*

Identification		Chemical name/ Classification		Concentration
CAS:	1330-20-7	Xylene (benzene <0,01%)		*8 - 8,4%
EC:	215-535-7	Regulation 1272/2008	Flam. Liq. 3, H226, Acute Tox. 4, H312, Acute Tox. 4, H332, Asp. Tox. 1, H304, STOT RE 2, H373, Eye Irrit. 2, H319, Skin Irrit. 2, H315, STOT SE 3, H335, *Aquatic Chronic 3, *H412 * Qualification note according to Annex VI to the CLP Regulation: C.	
Index:	601-022-00-9			
Reg.no	01-2119488216-32-XXXX			
CAS:	141-78-6	Ethyl acetate		1 - 1,5%
EC:	205-500-4	Regulation 1272/2008	Flam. Liq. 2, H225, Eye Irrit. 2, H319, STOT SE 3, H336, EUH066	
Index:	607-022-00-5			
Reg.no	01-2119475103-46			
CAS:	9016-87-9	Diphenylmethane diisocyanate, isomers and homologues		0,8 - 0,9%
EC:	-	Regulation 1272/2008	Carc. 2, H351, Acute Tox. 4, H332, STOT RE 2, H373, Eye Irrit. 2, H319, Skin Irrit. 2, H315, STOT SE 3, H335, Resp. Sens. 1, H334, Skin Sens. 1, H317	
Index:	-			
Reg.no	-			
CAS:	101-68-8	Diphenyl methane-4,4'-diisocyanate		0,6 - 0,7%
EC:	202-966-0	Regulation 1272/2008	Carc. 2, H351, Acute Tox. 4, H332, STOT RE 2, H373, Eye Irrit. 2, H319, Skin Irrit. 2, H315, STOT SE 3, H335, Resp. Sens. 1, H334, Skin Sens. 1, H317. * Qualification note according to Annex VI to the CLP Regulation: 2 C.	
Index:	615-005-00-9			
Reg.no	01-2119457014-47-XXXX			
CAS:	7664-38-2	Phosphoric acid		0 - 0,05%
EC:	231-633-2	Regulation 1272/2008	Skin Corr. 1B, H314, *Eye Dam., *H318. * Qualification note according to Annex VI to the CLP Regulation: B.	
Index:	015-011-00-6			
Reg.no	01-2119485924-24			

Full text of hazard statements (H) provided in section 16 of the Sheet.

* A UVCB substance for which the following product identifiers also apply:

REACTION MASS OF ETHYLBENZENE AND XYLENE:

(CE number 905-588-0; REACH number 01-2119486136-34 / 01-2119488216-32);

REACTION MASS OF ETHYLBENZENE AND M-XYLENE AND p-XYLENE:

(CE number 905-562-9; REACH number 01-2119488216-32 / 01-2119555267-33).

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

*Eyes:

Remove contact lenses, if present. Immediately rinse wide opened eyes with plenty of water for at least 15 minutes. If symptoms persist, consult a doctor.

*Skin:

Take off contaminated clothing. Wash skin immediately with a shower. Immediately call a doctor. Wash contaminated clothing before using it again.

* Alimentary tract:

Immediately call a doctor. Do not induce vomiting. Do not administer anything if not recommended by a doctor.

*Airways:

Take the victim outside to the fresh air. If the victim is not breathing, resuscitate immediately. Immediately call a doctor.

4.2. Most important symptoms both acute and delayed

Specific information on symptoms and effects caused by the product is not known.

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

None.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

*Recommended extinguishing media:

Standard extinguishing media: carbon dioxide, foam, extinguishing powders and water mist.

*Not recommended extinguishing media:

None.

5.2. Special hazards arising from the substance or mixture

Fire exposure hazards:

*Avoid breathing breakdown products.

5.3. Advice for firefighters

General indications:

Use water jets to cool the containers to avoid breakdown of the product and release of potentially hazardous substances.

Fire fighters should be equipped with full set of protective clothing. Collect fire sewage to prevent the leakage into sewage system.

Dispose of contaminated water according to current regulations.

Protective equipment:

Suitable protective clothes intended for fire fighting, that is cylinder air apparatus with compressed air and open circuit (EN 137), fire resistant clothes (EN469), fire resistant gloves (EN659) and high footwear for fire fighters (HO A29 or A30).

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency measures**

* Stop the leakage if there is no danger. Use adequate protective measures (including personal protective measures as provided in section 8 of the sheet), to prevent contamination of skin, eyes and personal clothes. these guidelines apply to people who are involved in the marketing of the product, as well as in case of emergency.

6.2. Environmental precautions

* Prevent leakage into sewage system, ground and surface waters.

6.3. Methods and materials for containment and cleaning up

* Pump out released product and place it in a suitable container. Check compatibility of the material of containers as mentioned in section 10 of the Sheet. Collect the residues using a sorption substance.

Use ventilation in contaminated area. Disposal of contaminated material should be performed according to recommendations given in section 13.

6.4. Reference to other sections

Personal protection measures – see section 8 of the Sheet.

Disposal considerations – see section 13 of the Sheet.

SECTION 7: HANDLING AND STORAGE OF SUBSTANCES AND MIXTURES**7.1. Precautions for safe handling**

Keep away from heat sources, sparks and open flames; do not smoke, do not use matches or a lighter. Vapours may ignite causing an explosion, so avoid accumulation of vapours: open windows and door, ensure cross ventilation. Without suitable ventilation vapours may accumulate over the ground and – if the fire starts – they may catch fire even from a distance, causing the risk of return of the fire.

Avoid accumulation of electrostatic charges. When moving the product from large volume packages, ensure continuity of the earthing circuit and use antistatic footwear. Strong movement and strong fluid flow in piping and devices can cause the formation and concentration of electrostatic charges. Prohibited use of compressed air during transport to prevent fire and explosion. Open the containers carefully as they may be under pressure. Do not smoke, eat or drink while using the product. Avoid release of the product to the environment.

7.2. Conditions for safe storage including any incompatibilities

Store only in original container. Store the containers tightly sealed in a well ventilated room, protecting them from direct sunlight. Store in a cool and well aired place, away from heat sources, open flames, sparks and other ignition sources. Store the containers away from incompatible materials, acting according to recommendations provided in section 10 of the Sheet.

Storage class TRGS 510 (Germany): 10.

7.3. Special end use(s)

No data available.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION MEASURES

8.1. Control parameters*

CZE	Česká Republika	Nařízení vlády č. 246/2018 Sb. Nařízení vlády, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, ve znění pozdějších předpisů
DEU	Deutschland	TRGS 900 - Seite 1 von 69 (Fassung 29.03.2019)- Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 – INRS
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition, published 2018)
GRC	Ελλάδα	ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ - ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 152 - 21 Αυγούστου 2018
HRV	Hrvatska	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 91/18)
ITA	Italia	DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017
NLD	Nederland	Regeling van de Staatssecretaris van Sociale Zaken en Werkgelegenheid van 13 juli 2018, 2018-0000118517 tot wijziging van de Arbeidsomstandighedenregeling in verband met de implementatie van Richtlijn 2017/164 in Bijlage XIII
POL	Polska	ROZPORZĄDZENIE MINISTRA RODZINY, PRACY I POLITYKI SPOŁECZNEJ z dnia 12 czerwca 2018 r
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República, 1.ª série - N.º 111 - 11 de junho de 2018
SVN	Slovenija	Uradni list Republike Slovenije 04.12.2018 - Uradnem listu RS št. 78 -PRAVILNIK o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
SWE	Sverige	Hygieniska gränsvärden, AFS 2018:1
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

XYLENE (*)

* Threshold values

Type	Country	MPC / 8 h		MPIC / 15 min		
		mg/m ³	ppm	mg/m ³	ppm	
*TLV	CZE	200		400		SKIN
AGW	DEU	440	100	880	200	SKIN
MAK	DEU	440	100	880	200	SKIN
VLA	ESP	221	50	442	100	SKIN
VLEP	FRA	221	50	442	100	SKIN
WEL	GBR	220	50	441	100	
TLV	GRC	435	100	650	150	
*GVI/KGVI	HRV	221	50	442	100	SKIN
TLV	ITA	221	50	442	100	SKIN
OEL	NLD	210		442		SKIN
*NDS/NDSch	POL	100				
*MAK	SWN	221	50			SKIN
NGV/KGV	SWE	221	50	442	100	SKIN
OEL	EU	221	50	442	100	SKIN
TLV-ACGIH		434	100	651	150	

*** Predicted no effect concentration – PNEC**

Relevant value in freshwater	*0,32	mg/l
Relevant value in marine water	*0,32	mg/l
Relevant value for freshwater sediment	12,46	mg/kg
Relevant value for marine water sediment	12,46	mg/kg
Relevant value for water, intermittent release	*0,32	mg/l
Relevant value for STP microorganisms	6,58	mg/l
Relevant value for land compartment	2,31	mg/kg

*** Health – Derived no-effect level – DNEL / DMEL**

Way of exposure	Effect on consumers			Chronic systemic	Effect on workers		
	Acute Local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local
Oral				12,5 mg/kg/d			
Inhalation				65,3 mg/m ³	442 mg/kg		221 mg/m ³
Dermal				125 mg/kg/d		212 mg/kg/d	

POLYURETHANE SEALANT PU UK

ETHYL ACETATE

* Threshold value

Type	Country	MPC / 8 h		MPIC / 15 min.	
		mg/m ³	ppm	mg/m ³	ppm
TLV	CZE	700	194,6	900	250,2
AGW	DEU	730	200	1460	400
MAK	DEU	750	200	1500	400
VLA	ESP	734	200	1468	400
VLEP	FRA	1400	400		
WEL	GBR	734	200	1468	400
TLV	GRC	734	200	1468	400
GVI/KGVI	HRV	734	200	1468	400
VLEP	ITA	734	200	1468	400
TGG	NLD	734		1468	
NDS/NDSch	POL	734		1468	
VLE	PRT	734	200	1468	400
MV	SVN	734	200	1468	400
NGV/KGV	SWE	550	150	1100	300
OEL	EU	734	200	1468	400
TLV-ACGIH		1441	400		

Predicted no effect concentration – PNEC

Relevant value in freshwater	0,26	mg/l
Relevant value in marine water	0,026	mg/l
Relevant value for freshwater sediment	1,25	mg/kg
Relevant value for marine water sediment	0,125	mg/kg
Relevant value for water, intermittent release	1,65	mg/l
Relevant value for STP microorganisms	650	mg/l
Relevant value for land compartment	0,24	mg/kg

Health – Derived no-effect level - DNEL / DMEL

Way of exposure	Effect on consumers			Effect on workers		Acute systemic	Chronic local	Chronic systemic
	Acute Local	Acute systemic	Chronic local	Chronic systemic	Acute local			
Oral			VND	4,5 mg/kg				
Inhalation	734 mg/m ³	734 mg/m ³	367 mg/m ³	367 mg/m ³	1468 mg/m ³	1468 mg/m ³	734 mg/m ³	734 mg/m ³
Dermal			VND	37 mg/kg			VND	63 mg/kg

DIPHENYL METHANEDIISOCYANATE, ISOMERS AND HOMOLOGUES

* Threshold values

Type	Country	MPC / 8 h		MPIC / 15 min	
		mg/m ³	ppm	mg/m ³	ppm
TLV-ACGIH			0,005		

DIPHENYL METHANE-4,4'- DIISOCYANATE

* Threshold values

Type	Country	MPC / 8 h		MPIC / 15 min	
		mg/m ³	ppm	mg/m ³	ppm
TLV	CZE	0,05		0,1	
AGW	DEU	0,05		0,05	
MAK	DEU	0,05		0,05	RESP
MAK	DEU	0,05		0,05	SKIN
VLA	ESP	0,052	0,005		
VLEP	FRA	0,1	0,01	0,2	0,02
TLV	GRC	0,2		0,2	
NDS	POL	0,05		0,2	
MAK	SWE	0,03	0,002	0,05 (C)	0,005 (C)
TLV-ACGIH		0,051	0,005		

Predicted no effect concentration – PNEC

Relevant value in freshwater	1	mg/l
Relevant value in marine water	0,1	mg/l
Relevant value for water, intermittent release	10	mg/l
Relevant value for STP microorganisms	1	mg/l
Relevant value for land compartment	1	mg/kg

POLYURETHANE SEALANT PU UK

Health – Derived no-effect level – DNEL / DMEL

Way of exposure	Effect on consumers				Effect on workers			
	Acute Local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation	0,05 mg/m ³	0,05 mg/m ³	0,025 mg/m ³	0,025 mg/m ³	0,1 mg/m ³		0,05 mg/m ³	

2,2- DIMORPHOLINODIETHYLEETHER

Predicted no effect concentration – PNEC

Relevant value in freshwater	0,1 mg/l
Relevant value in marine water	0,01 mg/l
Relevant value for freshwater sediment	8,2 mg/kg
Relevant value for marine water sediment	0,82 mg/kg
Relevant value for water, intermittent release	1 mg/l
Relevant value for STP microorganisms	100 mg/l
Relevant value for land compartment	1,58 mg/kg

Health – Derived no-effect level – DNEL / DMEL

Way of exposure	Effect on consumers				Effect on workers			
	Acute Local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	0,5 mg/kg/d				
Inhalation			VND	1,8 mg/m ³			VND	7,28 mg/m ³
Dermal			VND	0,5 mg/kg/d			VND	1 mg/kg/d

PHOSPHORIC ACID

* Threshold values

Type	Country	MPC / 8 h		MPIC / 15 min		
		mg/m ³	ppm	mg/m ³	ppm	
TLV	CZE	1		2		
AGW	DEU	2		4 (C)		RESP.
MAK	DEU	2		4		RESP.
VLA	ESP	1		2		
VLEP	FRA	1	0,2	2	0,5	
WEL	GBR	1		2		
TLV	GRC	1		3		
GVI/KGVI	HRV	1		2		
TLV	ITA	1		2		
OEL	NLD	1		2		
NDS/NDSch	POL	1		2		
VLE	PRT	1		2		
NGV/KGV	SWE	1		2		
OEL	EU	1		2		
TLV-ACGIH		1		3		

Legend:
(C) = CEILING; INH = Inhalable fraction; RESPIR = Respirable fraction; TCHAW = Thoracic fraction.
VND = hazard identified, but no DNEL/PNEC available; NEA = no exposure predicted; NPI = no hazard identified.

8.2. Exposure control

* As the use of suitable technical equipment has to take priority over personal protective equipment, it necessary to make sure that there is appropriate ventilation in the place of work.

When choosing personal protective measures seek the advice of chemical substances supplier if necessary.

Personal protective equipment needs to be CE labeled as confirmation that it corresponds to all current legal regulations.

Hands protection:

Use working gloves of category III (standard EN 374). The type of use should be assessed for the final material selection. For splash protection or short-term contact, use protective gloves made of neoprene rubber (thickness 0,4 mm, penetration time <30 min.). If the exposure continues, use butyl rubber gloves (thickness 0,4 mm, breakthrough time >480 min.). Contaminated gloves should be disposed of.

Skin protection:

Use long-sleeved work clothing and protective footwear for professional purposes of Category (see Regulation 2016/425 and standard EN ISO 20344). After removing protective clothing, wash body with water and soap.

Eyes protection:

It is recommended to use tight protective glasses (see standard EN 166).

Respiratory protection:

If permissible threshold (e.g. TLV-TWA) of one or more components of the substance is exceeded, it is necessary to use A type

mask for organic vapours, class (1, 2 or 3). To be chosen depending on permissible concentration (1000, 5000 or 10000 ppm) (see standard EN 14387).

Environmental exposure control:

Measurements of emissions from ventilation equipment and work processes must be carried out in accordance with the regulations on environmental protection.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	paste
Colour	various
Odour	typical
Odour threshold	unavailable
pH	unavailable
Melting/freezing point	unavailable
Boiling point	unavailable
Boiling range	unavailable
Flash point	not applicable*
Evaporation rate	unavailable
Flammability (solid, gas)	non flammable*
Bottom ignition limit	unavailable
Top ignition limit	unavailable
Bottom explosion limit	unavailable
Top explosion limit	unavailable
Vapour pressure	unavailable
Vapour density	unavailable
Relative density	app. 1,27 kg/l*
Solubility (in water)	unavailable
n-octanol/water partition coefficient	unavailable
Autoignition point	250°C
Breakdown point	unavailable
Viscosity	60000-150000 cps*
Explosive properties	no data
Oxidizing properties	no data

9.2. Other information

VOC (Directive 2010/75/CE) 9,71% - 123,32 g/litre

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

*Under recommended conditions of use there are no special hazards concerning reactions with other substances.

Ethyl acetate:

It decomposes slowly into acetic acid and ethanol under the influence of light, air and water.

Phosphoric acid:

It decomposed under the temperatures over 200°C/392°F.

10.2. Chemical stability

Product stable under normal conditions of storage and use.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixtures with air.

*Ethyl acetate:

Risk of explosion in case of contact with: alkali metals, hydrides, oleum. It may react violently with: fluorine, strong oxidizing agents, sulfuryl chloride, potassium tert-butoxide. Forms explosive mixtures with: air.

*Phosphoric acid:

Risk of explosion in case of contact with: nitromethane. It may react in a dangerous way with: alkali, sodium borohydride.

10.4. Conditions to be avoided

*Avoid overheating. Take precaution measures against static electricity. Avoid any ignition source.

Ethyl acetate:

Avoid exposure to: light, heat sources, open flames.

10.5. Incompatible materials

*Ethyl acetate:

Incompatible with: acids, bases, strong oxidants, aluminum, nitrates, sulfuryl chloride. Incompatible materials: plastic materials.

Phosphoric acid:

Incompatible with: metals, strong alkalis, aldehydes, organic sulfides, peroxides.

10.6. Hazardous decomposition products

* Toxic gases and potentially hazardous vapours are released as a result of thermal decomposition.

Phosphoric acid:

May form: phosphoryl oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

* Metabolism, toxicokinetics, mechanism of action and other information:

None.

Information on possible routes of exposure:

None.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

None.

The effects of interaction:

None.

Acute toxicity:

LC50 (Inhalation) of the mixture:	>20 mg/l	
LD50 (Ingestion) of the mixture:	not classified (no significant component)	
LD50 (Dermal) of the mixture:	>2000 mg/kg	

Diphenylmethane diisocyanate, isomers and homologues:

LD50 (Ingestion)	>10000 mg/kg	<i>Rattus sp.</i>
LD50 (Dermal)	>9400 mg/kg	<i>Oryctolagus sp.</i>
LC50 (Inhalation)	1,5 mg/l/4h	<i>Rattus sp.</i>

Diphenylmethane -4,4'- diisocyanate:

LD50 (Ingestion)	>2000 mg/kg	<i>Rattus sp.</i>
LD50 (Dermal)	>9400 mg/kg	<i>Oryctolagus sp.</i>
LC50 (Inhalation)	1,5 mg/l/4h	<i>Rattus sp.</i>

Phosphoric acid:

LD50 (Ingestion)	1530 mg/kg	<i>Rattus sp.</i>
LD50 (Dermal)	2740 mg/kg	<i>Oryctolagus sp.</i>
LC50 (Inhalation)	> 0,85 mg/l/1h	<i>Rattus sp.</i>

Ethyl acetate:

LD50 (Ingestion)	5620 mg/kg	<i>Rattus sp.</i>
LD50 (Dermal)	>20000 mg/kg	<i>Oryctolagus sp.</i>
LC50 (Inhalation)	1600 mg/kg	<i>Oryctolagus sp.</i>

Xylene (*):

LD50 (Ingestion)	5627 mg/kg	<i>Mus sp.</i>
LD50 (Dermal)	>5000 mg/kg	<i>Oryctolagus sp.</i>
LC50 (Inhalation)	6700 ppm/4h	<i>Rattus sp.</i>

Caustic/irritating effect on skin:

Does not meet the classification criteria for this hazard class.

Serious eye damage / eye irritation:

Does not meet the classification criteria for this hazard class.

Respiratory or skin irritation:

Causes respiratory irritation.

Mutagenic effect on germ cells:
Does not meet the classification criteria for this hazard class.

Carcinogenic effect:
Does not meet the classification criteria for this hazard class.

Harmful effect on reproduction:
Does not meet the classification criteria for this hazard class.

Toxic effect on target organs – single exposure:
Does not meet the classification criteria for this hazard class.

Toxic effect on target organs – repeated exposure:
Does not meet the classification criteria for this hazard class.

Aspiration hazard:
Does not meet the classification criteria for this hazard class.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

* Diphenylmethane diisocyanate, isomers and homologues:
LC50 - Fish >1000 mg/l/96h *Danio rerio*
EC50 - Algae / aquatic plants >1640 mg/l/72h *Scenedesmus subspicatus*
NOEC chronic Crustacea >10 mg/l *Daphnia magna*

Diphenylmethane -4,4'- diisocyanate:
LC50 - Fish >1000 mg/l/96h *Danio rerio*
EC50 - Algae / aquatic plants >1640 mg/l/72h *Scenedesmus subspicatus*
NOEC chronic Crustacea >10 mg/l *Daphnia magna*
NOEC chronic Algae/Aquatic plants 1640 mg/l *Desmodesmus subspicatus*

Ethyl acetate:
LC50 - Fish >212 mg/l/96h
EC50 - Crustacea 260 mg/l/48h *Daphnia pulex*

Xylene (*):
LC50 - Fish 2,6 mg/l/96h *Oncorhynchus mykiss*
EC50 - Algae / aquatic plants 4,36 mg/l/72h *Pseudokirchneriella subcapitata*
NOEC chronic Fish >1,3 mg/l *Oncorhynchus mykiss*
NOEC chronic Crustacea 1,57 mg/l *Daphnia magna*

12.2. Persistence and degradability

* Diphenylmethane diisocyanate, isomers and homologues:
NOT easily degradable.

Phosphoric acid:
Solubility in water >850000 mg/l
Degradability: data not available

Ethyl acetate:
Solubility in water >10000 mg/l
Easily degradable.

Xylene (*):
Easily degradable.

12.3. Bioaccumulative potential

*Ethyl acetate:
n-octanol/water partition coefficient 0,68
BCF 30

12.4. Mobility in soil

*None.

12.5. Results of PBT and vPvB assessment

On the basis of available data – does not contain PBT or vPvB in quantities higher than 0,1%.

12.6. Other hazardous effects

*None.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

* If possible, forward for disposal. Product residues are special wastes classified as hazardous. Hazards of waste containing in part this product should be catalogued within the meaning of applicable regulations. Waste disposal should be handed over to a company with relevant waste management permits, as defined by national and possibly local regulations.

Contaminated container:

A contaminated container should be delivered for disposal according to national regulations on waste disposal.

SECTION 14: TRANSPORT INFORMATION

* The product is not classified as dangerous according to ADR (International Agreement concerning the International Carriage of Dangerous Goods by Road) and RID (Regulation for International Carriage of Dangerous Goods by Rail), IMDG (International Maritime Dangerous Goods Code), and IATA (International Air Transport Association).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(-es)

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazard

Not applicable.

14.6. Special precautions for users

Not applicable.

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

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

* Seveso category - Directive 2012/18/CE:

None.

Restrictions on the product or substances contained according to Annex XVII to the Regulation (CE) 1907/2006

Product: Point 3-40

Substances contained: Point 56 diphenylmethane-4,4'- diisocyanate, Reg. No: 01-2119457014-47-XXXX

Substances on Candidate List (Art. 59 REACH):

Based on available data, the product does not contain more than 0,1% of SVHC.

Substances candidating to authorization (Annex XIV REACH):

None.

Substances subject to export notification Reg. (WE) 649/2012:

None.

Substances subject to Rotterdam Convention:

None.

Substances subject to Stockholm Convention:

None.

Medical checks:

Workers exposed to this chemical need not be under constant medical observation if the results of the risk assessment indicate that there is only a moderate risk to the safety and health of workers, provided that the requirements set out in Regulation 98/24 / CE are met.

15.2. Chemical safety assessment

*Chemical safety assessment has been performed for the following contained substances:

Xylene (*).

Ethyl acetate.

Diphenylmethane diisocyanate, isomers and homologues.

Diphenylmethane -4,4'- diisocyanate.

SECTION 16: OTHER INFORMATION***Full text of hazard statements and h phrases mentioned in sections 2-15 of the Sheet:**

Flam. Liq. 2	Flammable liquid, category 2.
Flam. Liq. 3	Flammable liquid, category 3.
Carc. 2	Carcinogenicity, category 2.
Acute Tox. 4	Acute toxicity, category 4.
Asp. Tox. 1	Aspiration hazard, category 1.
STOT RE 2	Toxic effect on target organs – repeated exposure, category 2.
Skin Corr. 1B	Skin corrosion, category 1B.
Eye Irrit. 2	Eye irritation, category 2.
Skin Irrit. 2	Skin irritation, category 2.
STOT SE 3	Toxic effect on target organs - single exposure, category 3.
Resp. Sens. 1	Respiratory sensitization, category 1.
Skin Sens. 1	Skin sensitization, category 1.
Aquatic Chronic 3	Hazardous for aquatic life, chronic toxicity, category 3.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H351	Suspected of causing cancer.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long-lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH204	Contains isocyanates. May produce an allergic reaction.

***Explanation of abbreviations and acronyms used in Material Safety Data Sheet:**

- ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
- CAS NUMBER:	Number in Chemical Abstract Service.
- CE50:	Effective concentration for 50% of the research population.
- CE NUMBER:	Identification number in ESIS (European Inventory of Existing Chemical Substances).
- CLP:	EC regulation no 1272/2008.
- DNEL:	derived no-effect level.
- EmS:	Emergency Schedule.
- GHS:	Globally Harmonized System of Classification and Labelling of Chemicals.
- IATA DGR:	International Air Transport Association.
- IC50:	Immobilization concentration for 50% of the research population.
- IMDG:	International Maritime Dangerous Goods Code.
- IMO:	International Maritime Organisation.
- INDEX NUMBER:	Index number in Annex VI of the CLP text.
- LC50:	Lethal concentration for 50% of the research population.
- LD50:	Lethal dose for 50% of the research population.
- OEL:	Occupational exposure limit value.
- PBT:	persistent, bioaccumulative and toxic according to REACH.
- PEC:	Predicted environmental concentration.
- PEL:	Predicted exposure level.
- PNEC:	Predicted no-effect concentration.
- REACH:	Regulation (CE) no 1907/2006.
- RID:	Regulations for the international carriage of dangerous goods by rail.

- TLV: Threshold value.
- TLV WAR. PUŁAP.: Concentration that cannot be exceeded in the work environment at any time.
- TWA STEL: The limit of short-term occupational risk.
- TWA: Weighted average exposure limit.
- VOC: Volatile organic compound.
- vPvB: Very persistent and very bioaccumulative according to REACH.
- WGK: Wassergefährdungsklassen (Deutschland).

***GENERAL BIBLIOGRAPHY:**

1. Regulation (EC) 1907/2006 of the European Parliament (REACH)
 2. Regulation (EC) 1272/2008 of the European Parliament (CLP)
 3. Regulation (EU) 790/2009 of the European Parliament (I Atp.CLP)
 4. Regulation (EU) 2015/830 of the European Parliament
 5. Regulation (EU) 286/2011 of the European Parliament (II Atp.CLP)
 6. Regulation (EU) 618/2012 of the European Parliament (III Atp.CLP)
 7. Regulation (EU) 487/2013 of the European Parliament (IV Atp. CLP)
 8. Regulation (EU) 944/2013 of the European Parliament (V Atp. CLP)
 9. Regulation (EU) 605/2014 of the European Parliament (VI Atp. CLP)
 10. Regulation (EU) 2015/1221 of the European Parliament (VII Atp. CLP)
 11. Regulation (EU) 2016/918 of the European Parliament (VIII Atp. CLP)
 12. Regulation (EU) 2016/1179 (IX Atp. CLP)
 13. Regulation (EU) 2017/776 (X Atp. CLP)
 14. Regulation (EU) 2018/669 (XI Atp. CLP)
 15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
 16. Regulation (EU) 2019/521 (XII Atp. CLP)
- The Merck Index. - 10th Edition
 - Handling Chemical Safety
 - INRS - Fiche Toxicologique (toxicological sheet)
 - Patty - Industrial Hygiene and Toxicology
 - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
 - IFA GESTIS Website
 - ECHA Website
 - SDS data base for chemical products – Ministry of Health and ISS (Istituto Superiore di Sanità) – Italy

*** Information for users:**

Information included in this Safety Data Sheet is based on our knowledge as of the day of the latest issue of the Material Safety Data Sheet.

The user should verify if the information provided is correct and comprehensive in relation to the specific use of the product.

This document shall not be equated with any specific product warranty.

As the manufacturer has no direct control over the use of the product, the user is obliged to comply at his own discretion with the laws and regulations in force on hygiene and safety. The producer is not responsible for any improper use of the product. Provide adequate training to persons designated for the handling of chemical products.

Product classification is based on the calculation methods described in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.

The data for the assessment of chemical and physical properties are given in section 9.

Changes in the Sheet:

1.2, 2.1, 2.2, 2.3, 3.2, 4.1, 4.2, 5.1, 5.2, 6.1, 6.2, 6.3, 8.1, 8.2, 9.1, 9.2, 10.1, 10.3, 10.4, 10.5, 10.6, 11.1, 12.1, 12.2, 12.3, 12.4, 12.6, 13.1, 14, 15.1, 15.2, 16.

Sheet number: 031I4T2020V5.