SAFETY DATA SHEET

according to Commission Regulation (EU) 2020/878 as amended

RAWLPLUG ADHESIVE FOR THERMAL INSULATION BOARDS R-RPP-FIX

Creation date	03rd October 2010		
Revision date	26th July 2024	Version	2.2

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

1.1. Product identifier

RAWLPLUG ADHESIVE FOR THERMAL INSULATION BOARDS
R-RPP-FIX

Substance / mixture	mixture
UFI	MV1Y-J80M-300Q-WV7J

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

Mixture's intended use

In construction - a polyurethane adhesive designed for fixing EPS and XPS boards for thermal insulation of buildings in External Thermal Insulation Composite System (ETICS), and for fixing EPS and XPS boards to the surfaces of foundations and ground parts buildings.

Main intended use

PC-ADH-2	Adhesives and sealants - building and construction works (except cement based adhesives)

Mixture uses advised against

The product should not be used in ways other than those referred in Section 1.

1.3. Details of the supplier of the safety data sheet

Supplier

Name or trade name	Rawlplug S.A.
Address	Kwidzyńska 6 , Wrocław , 51-416 Poland
Phone	+48 (71) 32 60 100, 0 801 000 103
E-mail	info@rawlplug.com
Web address	www.rawlplug.com

Competent person responsible for the safety data sheet

Name	Rytm-L Sp. z o.o.
E-mail	chb_karty@rytm-l.pl

1.4. Emergency telephone number

European emergency number: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

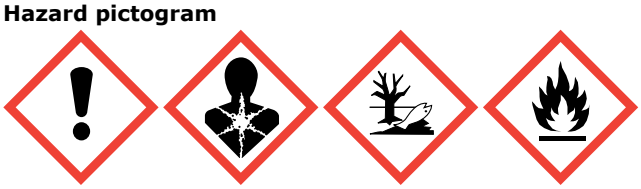
Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

Aerosol 1, H229, H222
Skin Irrit. 2, H315
Skin Sens. 1B, H317
Eye Irrit. 2, H319
Acute Tox. 4, H332
Resp. Sens. 1, H334
STOT SE 3, H335
Carc. 2, H351
Lact., H362
STOT RE 2, H373 (respiratory tract (inhalation))
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

2.2. Label elements

Hazard pictogram



Signal word

Danger

Hazardous substances

Polymeric diphenylmethane diisocyanate, Polymeric MDI
alkanes, C14-17, chloro
Tris(2-chloro-1-methylethyl) phosphate

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
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.
H362	May cause harm to breast-fed children.
H373	May cause damage to the respiratory tract (inhalation) through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe gazu/par.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
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.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50 °C.
P501	Dispose of contents/container to according to applicable regulations.

Supplemental information

EUH204	Contains isocyanates. May produce an allergic reaction.
EUH066	Repeated exposure may cause skin dryness or cracking.
	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.
	As from 24 August 2023 adequate training is required before industrial or professional use.

Requirements for child-resistant fastenings and tactile warning of danger

Container must carry a tactile warning of danger.

2.3. Other hazards

The mixture contains substances that meet the PBT or vPvB criteria in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH), as amended.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture.

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 9016-87-9	Polymeric diphenylmethane diisocyanate, Polymeric MDI	40-50	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Eye Irrit. 2, H319 Acute Tox. 4, H332 Resp. Sens. 1, H334 STOT SE 3, H335 Carc. 2, H351 STOT RE 2, H373 (respiratory tract (inhalation)) Specific concentration limit: Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335: C ≥ 5 % Resp. Sens. 1, H334: C ≥ 0.1 %	
Index: 603-019-00-8 CAS: 115-10-6 EC: 204-065-8 Registration number: 01-2119472128-37-xxxx	dimethyl ether	<11	Flam. Gas 1, H220 Press. Gas (liquefied gas), H280	2, 3
Index: 602-095-00-X CAS: 85535-85-9 EC: 287-477-0 Registration number: 01-2119519269-33-xxxx	alkanes, C14-17, chloro	<11	Lact., H362 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=10) EUH066	4, 5
CAS: 1244733-77-4 EC: 807-935-0 Registration number: 01-2119486772-26-xxxx	Tris(2-chloro-1-methylethyl) phosphate	<10	Acute Tox. 4, H302 Carc. 2, H351 Aquatic Chronic 3, H412	6
Index: 601-004-00-0 CAS: 106-97-8 EC: 203-448-7 Registration number: 01-2119474691-32-xxxx	butane	<4	Flam. Gas 1, H220 Press. Gas (liquefied gas), H280	1, 2
Index: 601-003-00-5 CAS: 74-98-6 EC: 200-827-9 Registration number: 01-2119486944-21-xxxx	propane	<3	Flam. Gas 1, H220 Press. Gas (liquefied gas), H280	2

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 601-004-00-0 CAS: 75-28-5 EC: 200-857-2 Registration number: 01-2119485395-27-xxxx	isobutane	<3	Flam. Gas 1, H220 Press. Gas (liquefied gas), H280	1, 2

Notes

1 Note C: 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.

2 Note U (Table 3): When put on the market gases have to be classified as "Gases under pressure", in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case. The following codes are assigned:

Press. Gas (Comp.)
Press. Gas (Liq.)
Press. Gas (Ref. Liq.)
Press. Gas (Diss.)

Aerosols shall not be classified as gases under pressure (See Annex I, Part 2, Section 2.3.2.1, Note 2).

3 A substance for which exposure limits are set.

4 Substance of very high concern - SVHC.

5 Persistent, bioaccumulative and toxic or very persistent and very bioaccumulative

6 Substance of unknown or variable composition, complex reaction products or biological materials - UVCB.

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet.

If inhaled

Remove person to fresh air and keep comfortable for breathing. In the event of issues, find medical advice.

If on skin

Remove contaminated clothes immediately. Wash with plenty of soap and water. Provide medical treatment if skin irritation persists.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed). Rinsing should continue at least for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Provide medical treatment, specialized if possible.

If swallowed

DO NOT INDUCE VOMITING! Rinse out the mouth with clean water. Provide medical treatment.

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

If inhaled

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

If on skin

May cause an allergic skin reaction. Possible irritation.

If in eyes

Causes serious eye irritation. Temporary feeling of burning and redness.

If swallowed

Not expected.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide, powder, water spray jet, water mist. Accommodate extinguishing components to the location of fire.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Trace amounts of cyanide may be formed. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Use a self-contained breathing apparatus and full-body protective clothing. Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Closed containers with the product near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not inhale gases and vapours. Use personal protective equipment for work. Remove all ignition sources; provide sufficient ventilation. Follow the instructions in the Sections 7 and 8.

6.2. Environmental precautions

Do not allow to enter drains. Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Uncured foam can be removed with a cloth and solvents, e.g. acetone. Collect in a waste container. Ventilate the room. Remove hardened foam mechanically. Hardening of the foam occurs when exposed to humidity. Dispose of the collected material according to the instructions in the section 13.

6.4. Reference to other sections

For information on safe handling, see section 7.
For information on personal protective equipment, see section 8.
For information on disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use personal protective equipment as per Section 8. Do not get in eyes, on skin. Do not inhale gases and vapours. Use only outdoors or in a well-ventilated area. Protect against sources of heating and ignition or direct sunlight. Do not eat, drink or smoke when using this product. Do not pierce or burn, even after use. Wash hands and exposed parts of the body thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store in originally closed containers in an upright position, in cold, dry and well ventilated areas designated for this purpose. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not expose to sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Recommended storage temperature is from +5 °C to +30 °C (optimally +20 °C). Protect against frost. Do not store together with food, drink and animal feed. Keep out of reach of children.

Content	Packaging type	Material of package
750 ml	can / tin	FE

Storage class	2B - Aerosols
Storage temperature	+5 - +30 °C

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

European Union **Commission Directive 2000/39/EC**

Substance name (component)	Type	Value
dimethyl ether (CAS: 115-10-6)	OEL 8 hours	1920 mg/m³
	OEL 8 hours	1000 ppm

DNEL

alkanes, C14-17, chloro					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Consumers (0)	Oral	0.58 mg/kg bw/day	Chronic effects systemic		
Consumers (0)	Dermal	28.75 mg/kg bw/day	Chronic effects systemic		
Workers	Dermal	47.9 mg/kg bw/day	Chronic effects systemic		
Consumers (0)	Inhalation	2 mg/m³	Chronic effects systemic		
Workers	Inhalation	6.7 mg/m³	Chronic effects systemic		

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers (0)	Inhalation	0.1 mg/m³	Acute effects local		
Workers (0)	Inhalation	0.05 mg/m³	Chronic effects local		
Consumers (0)	Inhalation	0.05 mg/m³	Acute effects local		
Consumers (0)	Inhalation	0.025 mg/m³	Chronic effects local		

Tris(2-chloro-1-methylethyl) phosphate					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Consumers	Inhalation	5.6 mg/m³	Acute effects systemic		
Consumers	Dermal	1.04 mg/kg bw/day	Chronic effects systemic		
Consumers	Inhalation	1.45 mg/m³	Chronic effects systemic		
Consumers	Oral	0.52 mg/kg bw/day	Chronic effects systemic		
Workers	Dermal	2.91 mg/kg bw/day	Chronic effects systemic		
Consumers	Oral	2 mg/kg bw/day	Acute effects systemic		
Workers	Inhalation	8.2 mg/m³	Chronic effects systemic		
Workers	Inhalation	22.6 mg/m³	Acute effects systemic		

PNEC

alkanes, C14-17, chloro			
Route of exposure	Value	Value determination	Source
Drinking water	0.001 mg/l		

alkanes, C14-17, chloro			
Route of exposure	Value	Value determination	Source
Marine water	0.0002 mg/l		
Microorganisms in sewage treatment	80 mg/l		
Freshwater sediment	2.6 mg/kg of dry substance of sediment		
Sea sediments	13 mg/kg of dry substance of sediment		
Soil (agricultural)	11.9 mg/kg of dry substance of soil		

Polymeric diphenylmethane diisocyanate, Polymeric MDI			
Route of exposure	Value	Value determination	Source
Drinking water	3.7 µg/l		
Marine water	0.37 µg/l		
Freshwater sediment	11.7 mg/kg of dry substance of sediment		
Sea sediments	1.17 mg/kg of dry substance of sediment		
Soil (agricultural)	2.33 mg/kg of dry substance of soil		
Water (intermittent release)	37 µg/l		

Tris(2-chloro-1-methylethyl) phosphate			
Route of exposure	Value	Value determination	Source
Water (intermittent release)	0.51 mg/l		
Marine water	0.032 mg/l		
Soil (agricultural)	0.34 mg/kg of dry substance		
Freshwater sediment	11.5 mg/kg of dry substance		
Sea sediments	1.15 mg/kg of dry substance		
Microorganisms in sewage treatment	7.84 mg/l		
Oral	11.6 mg/kg of food		
Drinking water	0.32 mg/l		
Microorganisms in sewage treatment	19.1 mg/l		

8.2. Exposure controls

Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

EN166 - Personal Eye Protection Standard. Protective goggles.

Skin protection

Hand protection: Protective gloves resistant to the product according to EN ISO 374-1. Use gloves of PVC or rubber (type of gloves to protect against chemicals should chosen depending on the concentration and quantity of the hazardous substance). For special applications, we recommend contacting the manufacturer of protective gloves in order to explain the resistance of the aforementioned gloves for chemicals. Contaminated skin should be washed thoroughly with water and soap.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Use a mask with a gas filter in a poorly ventilated environment (e.g. type A1 according to EN 14387).

Thermal hazard

not available

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

More information

Personal protective equipment should be selected in accordance with the relevant EN standards and in agreement with their supplier.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	yellow
color intensity	light
Odour	characteristic
Melting point/freezing point	not determined
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	<0 °C (DIN 51556)
Boiling point or initial boiling point and boiling range	-42.1 °C
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	>300 °C
Flammability	inflammable
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	non-inflammable
Lower and upper explosion limit	
bottom	1.5 %
upper	10.9 %
Flash point	-95 °C
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	>200 °C
Auto-ignition temperature	not applicable
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	>600 °C (EU Method A.15)
Decomposition temperature	data not available
pH	data not available
Kinematic viscosity	data not available
Solubility in water	insoluble
Partition coefficient n-octanol/water (log value)	data not available
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	reaguje z wodą
Vapour pressure	0.51 MPa at 20 °C

Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	<0.00001 mm Hg at 25 °C (Literatura)
Density and/or relative density	
Density	0.99 g/cm³ at 20 °C
Polymeric diphenylmethane diisocyanate, Polymeric MDI (CAS: 9016-87-9)	1.23 g/cm³ at 25 °C (Literatura)
Relative vapour density	data not available
Particle characteristics	data not available
Form	liquid, spray

9.2. Other information

not available

SECTION 10: Stability and reactivity

10.1. Reactivity

When used and stored in the standard way, the mixture is not reactive.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with substances containing an active hydrogen atom (amines, alcohols), reacts with water. Avoid strong acids and alkalis.

10.4. Conditions to avoid

Pressurised container: May burst if heated. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

10.6. Hazardous decomposition products

Not developed under normal uses.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time. No toxicological data is available for the mixture.

Acute toxicity

Based on available data the classification criteria are not met.

alkanes, C14-17, chloro						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD50		>4000 mg/kg		Rat	

butane						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Inhalation	LC50		658 mg/l	4 hours	Rat	

Polymeric diphenylmethane diisocyanate, Polymeric MDI						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD50		>2000 mg/kg		Rat (Rattus norvegicus)	F/M
Inhalation	LC50	OECD 403	431 mg/m³ of air	4 hours	Rat (Rattus norvegicus)	F/M
Dermal	LD50	OECD 402	>9400 mg/kg	24 hours	Rabbit	F/M

Tris(2-chloro-1-methylethyl) phosphate						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD50		632 mg/kg		Rat	F
Dermal	LD50	OECD 402	>2000 mg/kg		Rabbit	
Dermal	LD50	OECD 402	>2000 mg/kg		Rat	
Inhalation (dust/mist)	LC50	OECD 403	>7 mg/l	4 hours	Rat	F/M
Oral	LD50		>500-<2000 mg/kg		Rat (Rattus norvegicus)	M

Skin corrosion/irritation

Causes skin irritation.

Polymeric diphenylmethane diisocyanate, Polymeric MDI				
Route of exposure	Result	Method	Exposure time	Species
Dermal	Irritating	OECD 404		Rabbit

Serious eye damage/irritation

Causes serious eye irritation.

Polymeric diphenylmethane diisocyanate, Polymeric MDI				
Route of exposure	Result	Method	Exposure time	Species
Eye	No effect	OECD 405		Rabbit

Respiratory or skin sensitisation

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

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Route of exposure	Result	Method	Exposure time	Species	Sex
Skin	Sensitizing	OECD 429		Guinea-pig	
Inhalation	Sensitizing			Rat	

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Result	Method	Exposure time	Specific target organ	Species	Sex
Negative	EU B.13/14			Bacteria (Salmonella typhimurium)	
Negative	OECD 474	3 weeks (1 hour/day, 1 days/week)		Rat	M

Carcinogenicity

Suspected of causing cancer.

Tris(2-chloro-1-methylethyl) phosphate						
Route of exposure	Parameter	Value	Exposure time	Result	Species	Sex
Oral			2 years	Positive	Rat	F/M

Tris(2-chloro-1-methylethyl) phosphate						
Route of exposure	Parameter	Value	Exposure time	Result	Species	Sex
Oral			2 years	Positive	Mouse	F/M

Reproductive toxicity

May cause harm to breast-fed children.

Polymeric diphenylmethane diisocyanate, Polymeric MDI							
Effect	Parameter	Method	Value	Exposure time	Result	Species	Sex
	NOAEC	OECD 414	4 mg/m³ of air	10 days (6 hour/day)	Maternal toxicity	Rat	F

Toxicity for specific target organ - single exposure

May cause respiratory irritation.

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Route of exposure	Parameter	Value	Result	Species	Sex
Inhalation			Irritating		

Toxicity for specific target organ - repeated exposure

Może powodować uszkodzenie dróg oddechowych poprzez długotrwałe lub narażenie powtarzane w następstwie wdychania.

Polymeric diphenylmethane diisocyanate, Polymeric MDI								
Route of exposure	Parameter	Method	Value	Exposure time	Specific target organ	Result	Species	Sex
Inhalation (aerosols)		OECD 453	0.23 mg/m³ of air	2 years (17 hour/day, 5 days/week)	Lungs		Rat	F

Repeated dose toxicity

Tris(2-chloro-1-methylethyl) phosphate						
Route of exposure	Parameter	Result	Value	Exposure time	Species	Sex
Oral	LOAEL		52 mg/kg		Rat	

Aspiration hazard

Based on available data the classification criteria are not met.

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Route of exposure	Result	Exposure time	Species	Sex	Value determination
					Insufficient data

11.2. Information on other hazards

Endocrine disrupting properties: Based on available data, the criteria for classification are not met.

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic life with long lasting effects.

Acute toxicity

alkanes, C14-17, chloro					
Parameter	Method	Value	Exposure time	Species	Environment
EC50	OECD 202	0.006 mg/l	48 hours	Daphnia (Daphnia magna)	
LC50	OECD 203	>5000 mg/l	96 hours	Fish (Alburnus alburnus)	
EC50	OECD 201	>3.2 mg/l	72 hours	Algae (Selenastrum capricornutum)	

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Parameter	Method	Value	Exposure time	Species	Environment
LC50	OECD 203	>1000 mg/l	96 hours	Fish (Danio rerio)	Fresh water
EC50	OECD 202	3.7 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water
EC50	OECD 201	>100 mg/l	72 hours	Algae (Desmodesmus subspicatus)	Fresh water
EC50	OECD 209	>100 mg/l	3 hours	Microorganisms	Activated sludge
LC50	OECD 207	>1000 mg/kg of dry substance of soil	14 days	Invertebrates (Eisenia fetida)	
EC50	OECD 208	>1000 mg/kg of dry substance of soil	14 days	Higher plants (Avena sativa)	
EC50	OECD 208	>1000 mg/kg of dry substance of soil	14 days	Higher plants (Lactuca sativa)	

Tris(2-chloro-1-methylethyl) phosphate					
Parameter	Method	Value	Exposure time	Species	Environment
LC50		56.2 mg/l	96 hours	Fish (Danio rerio)	Fresh water
EC50		131 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water
EC50	OECD 201	82 mg/l	72 hours	Algae (Pseudokirchneriella subcapitata)	Fresh water
LC50		51 mg/l	96 hours	Fish (Pimephales promelas)	Fresh water
EC50		784 mg/l	3 hours	Microorganisms	Activated sludge
EC10		191 mg/l	3 hours	Microorganisms	Activated sludge

Chronic toxicity

alkanes, C14-17, chloro					
Parameter	Method	Value	Exposure time	Species	Environment
NOEC	OECD 202	0.01 mg/l	21 days	Daphnia (Daphnia magna)	
NOEC		0.22 mg/l	60 days	Crustaceans	

alkanes, C14-17, chloro					
Parameter	Method	Value	Exposure time	Species	Environment
LOEC		0.018 mg/l	21 days	Daphnia (Daphnia magna)	

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Parameter	Method	Value	Exposure time	Species	Environment
NOEC	OECD 211	≥10 mg/l	21 days	Daphnia (Daphnia magna)	Fresh water

Tris(2-chloro-1-methylethyl) phosphate					
Parameter	Method	Value	Exposure time	Species	Environment
NOEC	OECD 201	13 mg/l	72 hours	Algae (Pseudokirchneriella subcapitata)	Fresh water
NOEC	OECD 202	32 mg/l	21 days	Daphnia (Daphnia magna)	Fresh water

12.2. Persistence and degradability

not available

Half-life time

Polymeric diphenylmethane diisocyanate, Polymeric MDI			
Route of exposure	Value	Value determination	Source
Air	8 hours		
Drinking water	5 minutes		
Soil (agricultural)	24 hours		

Biodegradability

alkanes, C14-17, chloro					
Parameter	Method	Value	Exposure time	Environment	Result
					Biodegradable

Polymeric diphenylmethane diisocyanate, Polymeric MDI					
Parameter	Method	Value	Exposure time	Environment	Result
	OECD 302C	0 %	28 hours		Not biodegradable, Persistent

12.3. Bioaccumulative potential

Data not available.

alkanes, C14-17, chloro						
Parameter	Method	Value	Exposure time	Species	Environment	Temperature [°C]
BCF		<2000 l/kg				

Polymeric diphenylmethane diisocyanate, Polymeric MDI						
Parameter	Method	Value	Exposure time	Species	Environment	Temperature [°C]
BCF	OECD 305	200	28 days	Fish (Cyprinus carpio)	Fresh water	

12.4. Mobility in soil

Data not available.

Polymeric diphenylmethane diisocyanate, Polymeric MDI			
Parameter	Value	Environment	Temperature
Log Koc	4.5		20°C

12.5. Results of PBT and vPvB assessment

PBT:
alkanes, C14-C17, chloro [CAS: 85535-85-9]
vPvB:
alkanes, C14-C17, chloro [CAS: 85535-85-9]

12.6. Endocrine disrupting properties

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

The isocyanate reacts with water in the boundary layer to form CO and the solid, insoluble product with high melting point (polyurea). This reaction is strong intensifying in the presence of surface-active agents (e.g., liquid soaps) or water-soluble solvents. According to the experience so far the polyurea is not reactive and does not decompose. The impact of MDI on global warming, reducing the thickness of the layer ozonosphere in the stratosphere or in the accumulation of ozone in the troposphere is not expected.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

Waste type code

16 05 04* gases in pressure containers (including halons) containing hazardous substances

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

Packaging waste type code

15 01 01 paper and cardboard packaging

15 01 10* packaging containing residues of or contaminated by hazardous substances

(*) - Hazardous waste according to Directive 2008/98/EC on hazardous waste

SECTION 14: Transport information

14.1. UN number or ID number

UN 1950

14.2. UN proper shipping name

AEROSOLS

14.3. Transport hazard class(es)

2 Gases

14.4. Packing group

not relevant

14.5. Environmental hazards

No

14.6. Special precautions for user

Always transport closed containers in an upright position, protected against accidental displacement. Do not transport or store in the passenger compartment. Do not leave it in a hot vehicle (risk of explosion). Reference in the Sections 4 to 8.

14.7. Maritime transport in bulk according to IMO instruments

non-applicable

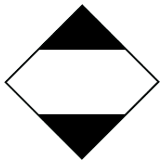
Additional information

Disable LQ.

Hazard identification No.	
UN number	1950
Classification code	5F
Safety signs	2.1+hazardous for the environment

Road transport - ADR

Limited quantities	1 L
Sign	



Tunnel restriction code	(D)

Air transport - ICAO/IATA

Packaging instructions passenger	203
Cargo packaging instructions	203

Marine transport - IMDG

EmS (emergency plan)	F-D, S-U
MFAG	620

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended.
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended.
Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
Annex XIV. List of substances subject to authorization - Regulation (EC) No. 1907/2006 - not applicable.
Annex XVII. Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles - Regulation (EC) No. 1907/2006 - dimethyl ether, propane, butane, isobutane [40], tris(2-chloro-1-methylethyl) phosphate [3], chloroalkanes, C14-C17 [3], diphenylmethane diisocyanate, isomers and homologues [74].
Candidate list of substances of very high concern (SVHC) for authorisation (Article 59) - Medium-chain chlorinated paraffins (MCCP) UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain length within the range from C14 to C17
Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013 - not applicable.
Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer - not applicable.
SEVESO III: Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC - dimethyl ether, propane, butane, isobutane - P2, alkanes, C14-C17, chloro - E1
Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste.
Directive (EU) 2018/852 of the European Parliament and of the Council of 30 May 2018 amending Directive 94/62/EC on packaging and packaging waste.
Decision 2000/532/EC establishing a list of wastes, as amended.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
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.
H362	May cause harm to breast-fed children.
H373	May cause damage to the respiratory tract (inhalation) through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Guidelines for safe handling used in the safety data sheet

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe gazu/par.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
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.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50 °C.
P501	Dispose of contents/container to according to applicable regulations.

A list of additional standard phrases used in the safety data sheet

EUH204	Contains isocyanates. May produce an allergic reaction.
EUH066	Repeated exposure may cause skin dryness or cracking.

Other important information about human health protection

The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC10	Concentration of a substance when it is affected 10% of the population
EC50	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC50	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD50	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEL	Lowest observed adverse effect level
log Kow	Octanol-water partition coefficient
NOAEC	No observed adverse effect concentration
NOEC	No observed effect concentration
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
Press. Gas (Comp.)	Gas under pressure: compressed gas
Press. Gas (Diss.)	Gas under pressure: dissolved gas

Press. Gas (Liq.)	Gas under pressure: liquefied gas
Press. Gas (Ref. Liq.)	Gas under pressure: refrigerated liquefied gas
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative

Acute Tox.	Acute toxicity
Aerosol	Aerosol
Aquatic Acute	Hazardous to the aquatic environment
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Gas	Flammable gas
Lact.	Lactation
Press. Gas	Gases under pressure
Resp. Sens.	Respiratory sensitization
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitization
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

The version 2.2 replaces the SDS version from 22.05.2023. Changes were made to sections 3, 9 and 15.

More information

Classification procedure - calculation method.

Statement

The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application. The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection.