

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

TitaniumPRO FIX ADHESIVE FOR GRAPHITE POLYSTYRENE THERMO-FIX GRAPHITE

Creation date 26th August 2022
Revision date Version 2.0

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

1.1. Product identifier TitaniumPRO FIX ADHESIVE FOR GRAPHITE POLYSTYRENE THERMO-FIX GRAPHITE
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

Distributor

Name or trade name Marcopol Sp. z o.o.
Address Oliwska 100, Chwaszczyno k/Gdyni, 80-209
Poland
Phone (+48 58) 55 40 555
Web address www.marcopol.pl

Manufacturer

Name or trade name Rytm-L Sp. z o.o.
Address Strefowa 14, Tychy, 43-100
Poland
Phone +48 32 324 00 00
E-mail rytm@rytm-l.pl

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, H222, H229
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

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

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2.2. Label elements

Hazard pictogram



Signal word

Danger

Hazardous substances

Diphenylmethane diisocyanate, isomers and homologues
alkanes, C14-17, chloro

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 through prolonged or repeated exposure if inhaled.
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 gas/vapour/aerosol.
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 not 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.
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.

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Requirements for child-resistant fastenings and tactile warning of danger

Container must carry a tactile warning of danger.

2.3. Other hazards

Mixture does contain any substance meet the criteria for PBT or vPvB 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	Diphenylmethane diisocyanate, isomers and homologues	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	<10	Lact., H362 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=10) EUH066	4, 5
CAS: 13674-84-5 EC: 237-158-7 Registration number: 01-2119486772-26-xxxx	tris(2-chloro-1-methylethyl) phosphate	<10	Acute Tox. 4, H302	
Index: 601-004-00-0 CAS: 106-97-8 EC: 203-448-7 Registration number: 01-2119474691-32-xxxx	butane	3,2	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	2,4	Flam. Gas 1, H220 Press. Gas (liquefied gas), H280	2

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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	2,4	Flam. Gas 1, H220 Press. Gas (liquefied gas), H280	1, 2	

Notes

- 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.
- 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).
- Substance with a Union workplace exposure limit.
- Substance of very high concern - SVHC.
- Persistent, bioaccumulative and toxic or very persistent and very bioaccumulative

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.

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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.

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European Union

Commission Directive 2000/39/EC

Substance name (component)	Type	Value
dimethyl ether (CAS: 115-10-6)	OEL 8 hours	1920 mg/m ³
	OEL 8 hours	1000 ppm

DNEL

alkanes, C14-17, chloro

Workers / consumers	Route of exposure	Value	Effect	Determining method
Consumers	Oral	0.58 mg/kg bw/day	Systemic chronic effects	
Consumers	Dermal	28.75 mg/kg bw/day	Systemic chronic effects	
Workers	Dermal	47.9 mg/kg bw/day	Systemic chronic effects	
Consumers	Inhalation	2 mg/m ³	Systemic chronic effects	
Workers	Inhalation	6.7 mg/m ³	Systemic chronic effects	

Diphenylmethane diisocyanate, isomers and homologues

Workers / consumers	Route of exposure	Value	Effect	Determining method
Workers	Inhalation	0.1 mg/m ³	Local acute effects	
Workers	Inhalation	0.05 mg/m ³	Local chronic effects	
Consumers	Inhalation	0.05 mg/m ³	Local acute effects	
Consumers	Inhalation	0.025 mg/m ³	Local chronic effects	

tris(2-chloro-1-methylethyl) phosphate

Workers / consumers	Route of exposure	Value	Effect	Determining method
Consumers	Dermal	4 mg/kg	Systemic acute effects	
Consumers	Inhalation	43 mg/m ³	Systemic acute effects	
Consumers	Dermal	1.04 mg/kg bw/day	Systemic chronic effects	
Consumers	Inhalation	0.52 mg/m ³	Systemic chronic effects	
Consumers	Oral	0.52 mg/kg bw/day	Systemic chronic effects	

PNEC

alkanes, C14-17, chloro

Route of exposure	Value	Determining method
Drinking water	0.001 mg/l	
Seawater	0.0002 mg/l	
Microorganisms in wastewater treatment plants	80 mg/l	
Freshwater sediment	13 mg/kg of dry substance of sediment	
Sea sediments	2.6 mg/kg of dry substance of sediment	
Soil (agricultural)	11.9 mg/kg of dry substance of soil	
Oral	10 mg/kg of food	

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Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Value	Determining method
Drinking water	3.7 µg/l	
Seawater	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	Determining method
Water (intermittent release)	0.51 mg/l	
Drinking water	0.64 mg/l	
Seawater	0.064 mg/l	
Soil (agricultural)	1.7 mg/kg of dry substance of soil	
Freshwater sediment	13.4 mg/kg of dry substance of sediment	
Sea sediments	1.34 mg/kg of dry substance of sediment	
Microorganisms in wastewater treatment plants	7.84 mg/l	
Oral	<11.6 mg/kg of food	

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 be 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

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Melting point/freezing point		not determined	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		<0 °C (DIN 51556)	
Boiling point or initial boiling point and boiling range		-42 °C	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		>300 °C	
Flammability		inflammable	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		niepalny	
Lower and upper explosion limit			
bottom		1,5 %	
upper		10,9 %	
Flash point		-80 °C	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		>200 °C	
Auto-ignition temperature		not applicable	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		>600 °C (EU Method A.15)	
Decomposition temperature		data not available	
pH		reacts with water	
Kinematic viscosity		data not available	
Solubility in water		insoluble	
Partition coefficient n-octanol/water (log value)		data not available	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		reaguje z wodą	
Vapour pressure		1200-7500 hPa at 20 °C	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		<0,00001 mm Hg at 25 °C (Literatura)	
Density and/or relative density			
Density		1,2 g/cm ³ at 20 °C	
Diphenylmethane diisocyanate, isomers and homologues (CAS: 9016-87-9)		1,23 g/cm ³ at 25 °C (Literatura)	
Relative vapour density		data not available	
Particle characteristics		data not available	
Form		liquid, aerosol	
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.

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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	Time of exposure	Species	Sex
Oral	LD ₅₀		>4000 mg/kg		Rat	

butane

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex
Inhalation	LC ₅₀		658 mg/l	4 hour	Rat	

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex
Oral	LD ₅₀		>2000 mg/kg		Rat (<i>Rattus norvegicus</i>)	F/M
Inhalation	LC ₅₀	OECD 403	431 mg/m ³ of air	4 hour	Rat (<i>Rattus norvegicus</i>)	F/M
Dermal	LD ₅₀	OECD 402	>9400 mg/kg	24 hour	Rabbit	F/M

tris(2-chloro-1-methylethyl) phosphate

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex
Oral	LD ₅₀		630-2000 mg/kg		Rat	
Oral	LD ₅₀		>2000 mg/kg		Rabbit	
Dermal	LD ₅₀		>2000 mg/kg		Rat	
Inhalation	LC ₅₀		>7 mg/l	4 hour	Rat	

Skin corrosion/irritation

Causes skin irritation.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Result	Method	Time of exposure	Species
Dermal	Irritating	OECD 404		Rabbit

Serious eye damage/irritation

Causes serious eye irritation.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Result	Method	Time of exposure	Species
Eye	No effect	OECD 405		Rabbit

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Respiratory or skin sensitisation

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

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Result	Method	Time of exposure	Species	Sex
Skin	Sensitizing	OECD 429		Guinea-pig	
Inhalation	Sensitizing			Rat	

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Diphenylmethane diisocyanate, isomers and homologues

Result	Method	Time of exposure	Specific target organ	Species	Sex
Negative	EU B.13/14			Bacteria (Salmonella typhimurium)	
Negative	OECD 474	3 week (1 hour/day, 1 days/week)		Rat	M

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

May cause harm to breast-fed children.

Diphenylmethane diisocyanate, isomers and homologues

Effect	Parameter	Method	Value	Time of exposure	Result	Species	Sex
	NOAEC	OECD 414	4 mg/m ³ of air	10 day (6 hour/day)	Maternal toxicity	Rat	F

Toxicity for specific target organ - single exposure

May cause respiratory irritation.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Parameter	Value	Result	Species	Sex
Inhalation			Irritating		

Toxicity for specific target organ - repeated exposure

May cause damage to the respiratory tract through prolonged or repeated exposure if inhaled.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Parameter	Method	Value	Time of exposure	Specific target organ	Result	Species	Sex
Inhalation (aerosols)		OECD 453	0.23 mg/m ³ of air	2 year (17 hour/day, 5 days/week)	Lungs		Rat	F

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Aspiration hazard

Based on available data the classification criteria are not met.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Result	Time of exposure	Species	Sex	Determining method
					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

Acute toxicity

Toxic to aquatic life with long lasting effects.

alkanes, C14-17, chloro

Parameter	Method	Value	Time of exposure	Species	Environment
EC ₅₀	OECD 202	0.006 mg/l	48 hour	Daphnia (Daphnia magna)	
LC ₅₀	OECD 203	>5000 mg/l	96 hour	Fishes	
EC ₅₀	OECD 201	>3.2 mg/l	72 hour	Algae	

Diphenylmethane diisocyanate, isomers and homologues

Parameter	Method	Value	Time of exposure	Species	Environment
LC ₅₀	OECD 203	>1000 mg/l	96 hour	Fishes (Danio rerio)	Freshwater
EC ₅₀	OECD 202	3.7 mg/l	48 hour	Daphnia (Daphnia magna)	Freshwater
EC ₅₀	OECD 201	>100 mg/l	72 hour	Algae (Desmodesmus subspicatus)	Freshwater
EC ₅₀	OECD 209	>100 mg/l	3 hour	Microorganisms	Activated sludge
LC ₅₀	OECD 207	>1000 mg/kg of dry substance of soil	14 day	Invertebrates (Eisenia fetida)	
EC ₅₀	OECD 208	>1000 mg/kg of dry substance of soil	14 day	Higher plants (Avena sativa)	
EC ₅₀	OECD 208	>1000 mg/kg of dry substance of soil	14 day	Higher plants (Lactuca sativa)	

tris(2-chloro-1-methylethyl) phosphate

Parameter	Method	Value	Time of exposure	Species	Environment
LC ₅₀		56.2 mg/l	96 hour	Fishes	Freshwater
EC ₅₀		131 mg/l	48 hour	Daphnia (Daphnia magna)	Freshwater
EC ₅₀		47 mg/l	96 hour	Algae	Freshwater
EC ₅₀		82 mg/l	72 hour	Algae	Freshwater

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Chronic toxicity

alkanes, C14-17, chloro

Parameter	Method	Value	Time of exposure	Species	Environment
NOEC	OECD 212	3.4 mg/l		Fishes	
NOEC	OECD 202	0.01 mg/l	21 day	Daphnia (Daphnia magna)	

Diphenylmethane diisocyanate, isomers and homologues

Parameter	Method	Value	Time of exposure	Species	Environment
NOEC	OECD 211	≥10 mg/l	21 day	Daphnia (Daphnia magna)	Freshwater

tris(2-chloro-1-methylethyl) phosphate

Parameter	Method	Value	Time of exposure	Species	Environment
NOEC		32 mg/l		Daphnia (Daphnia magna)	Freshwater

12.2. Persistence and degradability

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Value	Determining method
Air	8 hour	
Drinking water	5 min	
Soil (agricultural)	24 hour	

Biodegradability

alkanes, C14-17, chloro

Parameter	Method	Value	Time of exposure	Environment	Result
	OECD 301D	13-66 %	28 day		

Diphenylmethane diisocyanate, isomers and homologues

Parameter	Method	Value	Time of exposure	Environment	Result
	OECD 302C	0 %	28 hour		Not biodegradable, Persistent

not available

12.3. Bioaccumulative potential

Diphenylmethane diisocyanate, isomers and homologues

Parameter	Method	Value	Time of exposure	Species	Environment	Surrounding temperature [°C]
BCF	OECD 305	200	28 day	Fishes (Cyprinus carpio)	Freshwater	

Data not available.

12.4. Mobility in soil

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Diphenylmethane diisocyanate, isomers and homologues

Parameter	Value	Environment	Surrounding temperature
Log Koc	4.5		20°C

Data not available.

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 CO₂ 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

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14.6. Special precautions for user

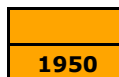
Always transport closed containers in an upright position, protected against accidental displacement. Do not transport or store in the passenger compartment. Do not leave it in a hot vehicle (risk of explosion). Reference in the Sections 4 to 8.

14.7. Maritime transport in bulk according to IMO instruments

non-applicable

Additional information

Hazard identification No.



UN number

5F

Classification code

2.1+hazardous for the environment

Safety signs

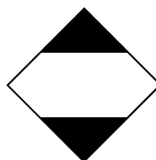


Road transport - ADR

Limited quantities

1 L

Sign



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 of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended.

15.2. Chemical safety assessment

An evaluation of chemical safety for ingredients: dimethyl ether; alkanes, C14-C17 chloro; tris(2-chloro-1-methylethyl)phosphate.

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.

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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 through prolonged or repeated exposure if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic 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.
P271	Use only outdoors or in a well-ventilated area.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C.
P501	Dispose of contents/container according to applicable regulations.
P260	Do not breathe gas/vapour/aerosol.
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.

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
CE ₅₀	Concentration of a substance when it is affected 50% of the population
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
DNEL	Derived no-effect level
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
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
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₅₀	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD ₅₀	Lethal dose of a substance in which it can be expected death of 50% of the population

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log Kow	Octanol-water partition coefficient
LZO	Volatile organic compounds
MARPOL	International Convention for the Prevention of Pollution from Ships
NOAEC	No observed adverse effect concentration
NOEC	No observed effect concentration
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted no-effect concentration
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
UE	European Union
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
vPvB	Very Persistent and very Bioaccumulative
WE	Identification code for each substance listed in EINECS
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)

Wersja 2.0 zastępuje wersję KCh z 10.02.2020. Zmian dokonano w sekcjach 1-16.

More information

Classification procedure - calculation method.

Statement

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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.