

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

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

1.1. Product identifier

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM
STYROFIX RPP-FIX-GRAPH

Substance / mixture

mixture

UFI

J22Y-J8DD-Q00Q-7JDP

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 graphite EPS boards for thermal insulation of buildings in External Thermal Insulation Composite System (ETICS), and for fixing AQUA EPS hydrophobic boards in thermal insulation system for the surfaces of foundations.

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

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

SAFETY DATA SHEET

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

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Creation date 29th November 2022
Revision date 13th July 2023 Version 1.1

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/dust/fumes.
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.

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

Requirements for child-resistant fastenings and tactile warning of danger

Container must carry a tactile warning of danger.

2.3. Other hazards

Mixture does not contain any substance that meets 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

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

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).
- A substance for which exposure limits are set.
- 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.

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

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.

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022		
Revision date	13th July 2023	Version	1.1

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	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 (0)	Dermal	47.9 mg/kg bw/day	Chronic effects systemic		
Consumers (0)	Inhalation	2 mg/m ³	Chronic effects systemic		
Workers (0)	Inhalation	6.7 mg/m ³	Chronic effects systemic		

Diphenylmethane diisocyanate, isomers and homologues

Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers (0)	Inhalation	0.1 mg/m ³	Acute effects local		
Workers (0)	Inhalation	0.05 mg/m ³	Chronic effects local		
Consumers (0)	Inhalation	0.05 mg/m ³	Acute effects local		
Consumers (0)	Inhalation	0.025 mg/m ³	Chronic effects local		

tris(2-chloro-1-methylethyl) phosphate

Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Consumers (0)	Dermal	4 mg/kg	Acute effects systemic		
Consumers (0)	Inhalation	43 mg/m ³	Acute effects systemic		
Consumers (0)	Dermal	1.04 mg/kg bw/day	Chronic effects systemic		
Consumers (0)	Inhalation	0.52 mg/m ³	Chronic effects systemic		
Consumers (0)	Oral	0.52 mg/kg bw/day	Chronic effects systemic		

PNEC

alkanes, C14-17, chloro

Route of exposure	Value	Value determination	Source
Drinking water	0.001 mg/l		
Marine water	0.0002 mg/l		
Microorganisms in sewage treatment	80 mg/l		
Freshwater sediment	13 mg/kg of dry substance of sediment		
Sea sediments	2.6 mg/kg of dry substance of sediment		

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date 29th November 2022

Revision date 13th July 2023

Version

1.1

alkanes, C14-17, chloro

Route of exposure	Value	Value determination	Source
Soil (agricultural)	11.9 mg/kg of dry substance of soil		
Oral	10 mg/kg of food		

Diphenylmethane diisocyanate, isomers and homologues

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		
Drinking water	0.64 mg/l		
Marine water	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 sewage treatment	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.

SAFETY DATA SHEET

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

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Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

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	grey
color intensity	light
Odour	characteristic
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)	non-inflammable
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, spray

9.2. Other information

not available

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date 29th November 2022
Revision date 13th July 2023 Version 1.1

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	LD ₅₀		>4000 mg/kg		Rat	

butane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Inhalation	LC ₅₀		658 mg/l	4 hours	Rat	

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Parameter	Method	Value	Exposure time	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 hours	Rat (<i>Rattus norvegicus</i>)	F/M
Dermal	LD ₅₀	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	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 hours	Rat	

Skin corrosion/irritation

Causes skin irritation.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Result	Method	Exposure time	Species
Dermal	Irritating	OECD 404		Rabbit

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date 29th November 2022

Revision date 13th July 2023

Version

1.1

Serious eye damage/irritation

Causes serious eye irritation.

Diphenylmethane diisocyanate, isomers and homologues

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.

Diphenylmethane diisocyanate, isomers and homologues

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.

Diphenylmethane diisocyanate, isomers and homologues

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.

Reproductive toxicity

May cause harm to breast-fed children.

Diphenylmethane diisocyanate, isomers and homologues

Effect	Parameter	Method	Value	Exposure time	Result	Species	Sex
	NOAEC	OECD 414	4 mg/m ³ of air	10 days (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	Exposure time	Specific target organ	Result	Species	Sex
Inhalation (aerosols)		OECD 453	0.23 mg/m ³ of air	2 years (17 hour/day, 5 days/week)	Lungs		Rat	F

Aspiration hazard

Based on available data the classification criteria are not met.

Diphenylmethane diisocyanate, isomers and homologues

Route of exposure	Result	Exposure time	Species	Sex	Value determination
					Insufficient data

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

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	Exposure time	Species	Environment
EC ₅₀	OECD 202	0.006 mg/l	48 hours	Daphnia (Daphnia magna)	
LC ₅₀	OECD 203	>5000 mg/l	96 hours	Fish	
EC ₅₀	OECD 201	>3.2 mg/l	72 hours	Algae	

Diphenylmethane diisocyanate, isomers and homologues

Parameter	Method	Value	Exposure time	Species	Environment
LC ₅₀	OECD 203	>1000 mg/l	96 hours	Fish (Danio rerio)	Fresh water
EC ₅₀	OECD 202	3.7 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water
EC ₅₀	OECD 201	>100 mg/l	72 hours	Algae (Desmodesmus subspicatus)	Fresh water
EC ₅₀	OECD 209	>100 mg/l	3 hours	Microorganisms	Activated sludge
LC ₅₀	OECD 207	>1000 mg/kg of dry substance of soil	14 days	Invertebrates (Eisenia fetida)	
EC ₅₀	OECD 208	>1000 mg/kg of dry substance of soil	14 days	Higher plants (Avena sativa)	
EC ₅₀	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
LC ₅₀		56.2 mg/l	96 hours	Fish	Fresh water
EC ₅₀		131 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water
EC ₅₀		47 mg/l	96 hours	Algae	Fresh water
EC ₅₀		82 mg/l	72 hours	Algae	Fresh water

Chronic toxicity

alkanes, C14-17, chloro

Parameter	Method	Value	Exposure time	Species	Environment
NOEC	OECD 212	3.4 mg/l		Fish	
NOEC	OECD 202	0.01 mg/l	21 days	Daphnia (Daphnia magna)	

Diphenylmethane diisocyanate, isomers and homologues

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

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date 29th November 2022

Revision date 13th July 2023

Version

1.1

tris(2-chloro-1-methylethyl) phosphate

Parameter	Method	Value	Exposure time	Species	Environment
NOEC		32 mg/l		Daphnia (Daphnia magna)	Fresh water

12.2. Persistence and degradability

Half-life time

Diphenylmethane diisocyanate, isomers and homologues

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
	OECD 301D	13-66 %	28 days		

Diphenylmethane diisocyanate, isomers and homologues

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

not available

12.3. Bioaccumulative potential

Diphenylmethane diisocyanate, isomers and homologues

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

Not available.

12.4. Mobility in soil

Diphenylmethane diisocyanate, isomers and homologues

Parameter	Value	Environment	Temperature
Log Koc	4.5		20°C

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

SAFETY DATA SHEET

RAWLPLUG®

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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

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

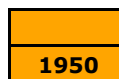
Disable LQ.

Hazard identification No.

UN number

Classification code

Safety signs



5F

2.1+dangerous for the environment



SAFETY DATA SHEET

RAWLPLUG®

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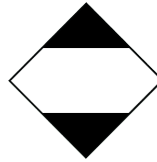
RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date 29th November 2022
Revision date 13th July 2023 Version 1.1

Road transport - ADR

Limited quantities
Sign

1 L



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).

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.
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.

SAFETY DATA SHEET



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

RAWLPLUG ADHESIVE FOR GRAPHITE STYROFOAM STYROFIX RPP-FIX-GRAPH

Creation date	29th November 2022	Version	1.1
Revision date	13th July 2023		

P251	Do not pierce or burn, even after use.
P260	Do not breathe gas/vapour.
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.

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
EC ₅₀	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
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
log K _{ow}	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

SAFETY DATA SHEET



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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.

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.