Safety Data Sheet

According to the Regulation (EC) №1907/2006

PROFESSIONAL PU FOAM.
PU FOAM ADHESIVE.

1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1. Product identifier	
Mixture name	Professional PU Foam. PU Foam Adhesive.
Trade name	TM Mouner: Mounting Foam 70, Mounting Foam 65, Fire-Resistant Foam, Winter Foam 65, Mounting Foam, «60 Seconds» Fast-Fix Adhesive Foam, Professional Adhesive Foam, Straw-Type Adhesive Foam. TM Smartech: All-Season Professional Mounting Foam, Winter Professional Mounting Foam, "60 Seconds" Fast-Fix Adhesive Foam, All-Season Adhesive Foam, All-Season Straw-Type Adhesive Foam, All-Season Straw-Type Mounting Foam.
1.2. Relevant identified uses of the substance or mixture and uses advised against	
Relevant identified uses	Insulating material for filling gaps and cracks, insulating window frames and doors. For professional and household use.
Uses advised against	Any other use.
1.3. Details of the supplier of the safety data sheet	
Manufacturer	PROKSI-UKRAYINA, LLC
Street address/P.O. Box	Dnipropetrovsk region, Dnipro district, Stari Kodaky village, Aeroport Street, building 37
Country ID/Postcode/Place	Ukraine, 52072
Telephone number	+30689027663
e-mail address of competent person for safety data sheet	proxy@proxy-ukraine.com
Responsible person	Pavlo Borysovych Sashchenko
National contact	
Website	https://proxy-ukraine.com https://mounter.eu
1.4. Emergency telephone number	
112	

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture		
2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)		2.1.2 Additional information
Aerosol 1	H222; H229	For full text of Hazard- and EU Hazard-statements: see SECTION 16.
Acute Tox. 4	H332	
Skin Irrit. 2	H315	
Eye Irrit. 2	H319	
Resp. Sens. 1	H334	
Skin. Sens. 1B	H317	
Carc. 2	H351	
STOT SE 3	H335	
STOT RE 2	H373	
Lact.	H362	
Aquatic Chronic 3	H413	

2.2. Label elements	
Labelling according to Regulation (EC) No 1272/2008 [CLP]	
Product identifier	POLYMERIC MDI, CAS№ 9016-87-9 Alkanes, C14-17, chloro, Index № 602-095-00-X
Hazard pictograms	
Signal word	Danger
Hazard statements	H222: Extremely flammable aerosol H229: Pressurised container: May burst if heated H332: H332: Harmful if inhaled H315: Causes skin irritation

	H319: Causes serious eye irritation H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled H317: May cause an allergic skin reaction H351: Suspected of causing cancer H335: May cause respiratory irritation H373: May cause damage to organs through prolonged or repeated exposure (respiratory system, inhalation) H362: May cause harm to breast-fed children H413: May cause long lasting harmful effects to aquatic life.
Precautionary statements	P102 Keep out of reach of children. P202 Do not handle until all safety precautions have been read and understood. 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. P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. P263 Avoid contact during pregnancy and while nursing. P280 Wear protective gloves/ protective clothing/eye protection/face protection. P501 Dispose of contents/ container in accordance with national regulation
Supplemental Hazard information (EU)	EUH204 'Contains isocyanates. May produce an allergic reaction'
2.3. Other hazards	
The substances in the mixture do not meet the criteria of Annex XIII to Regulation (EC) No 1907/2006 for classification as persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB). The substances in the mixture are not considered to have endocrine-disrupting properties for humans or the environment.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances Not applicable

3.2. Mixtures

Substance name	EC No.	CAS No.	Concentration, range %	Classification	Index No.	Reach reg No.
POLYMERIC MDI (Isocyanic acid, polymethylenepolyphenylene ester)	618-498-9	9016-87-9	30 - 50	Acute Tox. 4 H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Resp. Sens. 1 H334 Skin Sens. 1B H317 Carc. 2 H351 STOT SE 3 H335 STOT RE 2 H373 (respiratory system, inhalation) SLC Skin Irrit. 2 H315; Eye Irrit. 2 H319; STOT SE 3 H335 C ≥ 5% Resp. Sens. 1 H334 C ≥ 0,1 %	-	-
Alkanes, C14-17, chloro	287-477-0	85535-85-9	10 - 20	Lact. H362 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 EUH066 M (Acute) = 100 M (Chronic) = 10	602-095-00-X	01-2119519269-33-XXXX

	857-2	5		H220	004-00-0	
Propane	200-827-9	74-98-6	2,5 - 10	Flam. Gas 1A H220	601-003-00-5	-
Dimethyl ether	204-065-8	115-10-6	2,5 - 10	Flam. Gas 1A H220	603-019-00-8	-

4. FIRST AID MEASURES

4.1. Description of first aid measures	
General notes	If you feel unwell, seek medical attention (if possible, show Sections 2, 4, and 11 of the Safety Data Sheet).
In case of inhalation	Move the affected person to fresh air. If breathing is difficult, or if dizziness, drowsiness, or signs of allergic symptoms occur, seek emergency medical attention immediately.
In case of eye contact	Rinse eyes immediately with plenty of clean water for at least 15 minutes, keeping the eyelids open. If contact lenses are present, remove them after rinsing has started (if this can be done without risk). Do not rub the eyes. Be sure to consult an ophthalmologist.
In case of skin contact	Remove uncured foam immediately with a dry cloth or paper, then thoroughly wash the affected area with soap and water. Do not use solvents or thinners. Cured foam can be removed mechanically without damaging the skin. If an allergic reaction occurs, consult a doctor.
In case of ingestion	Rinse the mouth immediately with water, then drink a large amount of water to reduce gastrointestinal irritation. Do not induce vomiting unless directed by medical personnel. In case of difficulty swallowing or breathing, seek emergency medical attention immediately. In any case, consultation with an otolaryngologist and a gastroenterologist is recommended.
Self-protection of the first aider	Protective gloves.
4.2. Most important symptoms and effects, both acute and delayed	
In case of inhalation	The risk primarily arises during the application of uncured foam under conditions of insufficient ventilation or improper handling. Inhalation of aerosol particles or vapors of volatile components may cause respiratory tract irritation, temporary shortness of breath, coughing, or—in sensitive individuals—an allergic reaction. Once cured, the foam does not release active components and

	poses no hazard.
In case of eye contact	Redness, burning sensation, tearing, or temporary visual impairment may occur. In sensitive individuals, an allergic reaction is also possible.
In case of skin contact	Skin irritation, redness, and itching may occur. In sensitive individuals, allergic reactions such as rash or contact dermatitis may occur.
In case of ingestion	The likelihood of accidental ingestion is low due to the aerosol form. If uncured foam is ingested, nonspecific gastrointestinal symptoms (nausea, discomfort) may be observed. There is also a theoretical risk to infants during breastfeeding due to potential transfer of residual substances into breast milk.
Information to physician and first aider	Symptomatic treatment. Pay attention to possible signs of allergic reactions, including delayed effects. In the event of allergic reactions (itching, rash, swelling of the skin or face), the use of antihistamines is recommended. In case of accidental ingestion: Gastric lavage is not recommended due to the risk of foam formation or aspiration. If the substance enters the mouth or is swallowed, monitor respiratory function and lung condition due to potential delayed pulmonary edema or irritation. If aspiration into the respiratory tract is suspected, hospitalization and further monitoring are recommended.
First aid arsenal	Universal medical first aid kit with a set of medicines (according to consultation with the company's medical department).
4.3. Indication of any immediate medical attention and special treatment needed	
In case of ingestion or inhalation accompanied by significant allergic reactions, seek immediate medical attention. Provide the safety data sheet, label, or packaging to the attending medical personnel.	

5. FIREFIGHTING MEASURES

5.1. Extinguishing media	
Suitable extinguishing media	Foam, fire extinguishing powder, carbon dioxide (CO_2), fine water spray.
Unsuitable extinguishing media	Do not use a direct water jet, as it may disperse and spread the fire, heat the canister, and cause an explosion. Avoid simultaneous use of water and foam extinguishing agents, as

	water destroys the foam.
5.2. Special hazards arising from the substance or mixture	
Hazardous combustion products	In case of thermal decomposition, toxic gases may be released, such as carbon oxides (CO, CO_2), nitrogen oxides, hydrogen chloride, hydrogen cyanide, as well as other volatile organic compounds and acrid smoke.
5.3. Advice for firefighters	
Avoid inhalation of vapors and smoke. Use full fire-resistant protective clothing and self-contained breathing apparatus (SCBA). In case of a large fire involving significant amounts of product, evacuate personnel from the danger zone due to flammability and risk of detonation. Cool containers located in the fire-exposed area with water from a safe distance.	

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures	
6.1.1. For non-emergency personnel	Protective equipment: In case of large-scale aerosol release, wear appropriate protective equipment to avoid contamination of skin, eyes, and clothing: safety goggles, protective clothing, gloves, and a respirator. Emergency Procedures: Notify emergency response services. Eliminate potential sources of ignition. Avoid inhalation of vapors and contact with skin and eyes. Ensure proper ventilation.
6.1.2. For emergency responders	Do not attempt to take action without suitable protective equipment. Persons responding to an accidental release are advised to wear protective clothing, safety goggles, gloves, and a respirator. Emergency procedures: Evacuate unnecessary personnel. Eliminate all ignition sources if safe to do so. In case of fire, see Section 5.
6.2. Environmental precautions	
Avoid the spread of the material and prevent it from entering waterways, sewers, or drainage systems.	
6.3. Methods and material for containment and cleaning up	
6.3.1. For containment	In case of accidental release of the product from aerosol cans, isolate the hazardous area and restrict access to unauthorized personnel.

	Ensure that all sources of ignition are eliminated.
6.3.2. For cleaning up	Immediately collect uncured foam mechanically (using a spatula, cloth, or inert absorbent) before it hardens completely. Remove cured foam by mechanical means (e.g., scraping). Transfer the collected product and any contaminated materials into appropriate containers for recycling, recovery, or safe disposal. Clean any residues with water and detergent. Ventilate the area until all gases and vapors have dissipated. Use only spark-proof equipment and tools.
6.3.3. Other information	Ensure adequate ventilation, especially in enclosed spaces. Provide access to first aid supplies and emergency shower in the working area. Where possible, use antistatic or grounded equipment to prevent sparking. For large spills or emergency situations, it is recommended to involve specialized chemical spill response services.
6.4. Reference to other sections	
Information about personal protection - see Section 8. Information about waste disposal - see Section 13.	

7. HANDLING AND STORAGE

7.1. Precautions for safe handling	
7.1.1 Protective measures:	
General precautions for safe handling	Use the product only outdoors or in well-ventilated areas. Avoid contact with skin, eyes, and clothing. Do not inhale gases or vapors released from the aerosol can. Keep out of reach of children. Do not puncture or disassemble cans, even when empty.
Fire prevention measures	Do not spray near open flames, sparks, hot surfaces, or electrical appliances. Smoking is prohibited during spraying.
Measures to prevent aerosol and dust generation	Use only as directed and according to the polyurethane foam application instructions. Dispense the product with a controlled, steady pressure on the trigger of the appropriate device.

Environmental precautions	Avoid accidental release into the environment, except for the intended use.
7.1.2 Advice on general occupational hygiene	Eating, drinking, and smoking are prohibited during use.
7.2. Conditions for safe storage, including any incompatibilities	
7.2.1 Technical measures and storage conditions	Store in well-ventilated storage areas away from sources of heat, sparks, and open flames. Maintain storage temperature below 40°C. Use explosion-proof equipment and lighting in storage areas. Do not use open flames or spark-generating equipment in the storage zone. Ensure grounding of all metal containers and equipment to prevent static charge buildup.
7.2.2 Packaging materials	Original aerosol cans: 300–880 ml.
7.2.3 Requirements for storage rooms and vessels	Storage facilities must be equipped with ventilation, explosion-proof lighting, and fire extinguishing systems. Store cans upright in sturdy boxes or on racks, avoiding stacking that could damage the valves.
7.2.4 Further information on storage conditions	Regular inspection of containers for signs of damage is recommended. Avoid exposure to direct sunlight, excessive moisture, and mechanical damage to the packaging.
7.2.5 Incompatible materials	Do not store near acids or alkalis that may corrode the metal of the can.
7.2.6 Need for use of stabilizers or antioxidants	Generally not necessary.
7.3. Specific end use(s)	
Apart from the intended use as per section 1.2 no other specific uses are stipulated.	

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1 National occupational exposure limit values:

Limit value type (country of origin)	Substance name	CAS-No.	Monitoring procedures	Occupational exposure limit value	
				Long term mg/m^3	Short term mg/m^3
Germany (AGS, DFG)	Polymeric diphenylmethane diisocyanate	9016-87-9	Area Air Sampling	0,05	0,05

	Polymeric MDI				
Germany (AGS, DFG)	Chloroalkanes C14-C17 (chlorinated paraffins C14-C17)	85535-85-9	Area Air Sampling	6,0	48,0
Austria	iso-Butane	75-28-5	Area Air Sampling	1900	3800
Belgium				-	2370
Finland				1900	2400
Germany (AGS, DFG)				2400	9600
Austria	Propane	74-98-6	Area Air Sampling	1800	3600
Denmark				1800	3600
Finland				1500	2000
Germany (AGS, DFG)				1800	7200
Latvia				1800	-
Poland				1800	-
Romania				1400	1800
Austria	Dimethyl ether	115-10-6		1910	3820
Belgium				1920	-
Denmark				1885	3770
European Union				1920	-
Finland				2000	-
France				1920	-
Germany (AGS, DFG)				1900	15200
Hungary				1920	-
Italy				1920	-
Latvia				1920	-
Poland				1000	-
Romania				1920	-
Spain				1920	-
Sweden				950	1500

Biological exposure limits:

Not established.

8.1.2 Information on monitoring procedures

EN 689:2018 + A1:2019 – Workplace exposure – Measurement of exposure by inhalation to chemical agents – Strategy for testing compliance with occupational exposure limit values.

EN 482:2021 – Workplace exposure – Procedures for the determination of the concentration of chemical agents –

Basic performance requirements.								
8.1.3 DNEL values:								
4,4'-methylenediphenyl diisocyanate №CAS: 101-68-8								
	Workers				Consumers			
Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects
Oral	not applicable				not applicable	No hazard identified	not applicable	No hazard identified
Inhalation	0.1 mg/m³	No hazard identified	0.05 mg/m³	No hazard identified	0.05 mg/m³	No hazard identified	0.025 mg/m³	No hazard identified
Dermal	Medium hazard (no threshold derived)	No hazard identified	Medium hazard (no threshold derived)	No hazard identified	Medium hazard (no threshold derived)	No hazard identified	Medium hazard (no threshold derived)	No hazard identified
Eyes	medium hazard (no threshold derived)				medium hazard (no threshold derived)			
Alkanes, C14-17, chloro №CAS: 85535-85-9								
	Workers				Consumers			
Route of exposure	Acute effect local	Acute effects systemic	Route of exposure	Acute effect local	Acute effects systemic	Route of exposure	Acute effect local	Acute effects systemic
Oral	not applicable				not applicable	No hazard identified	not applicable	0.58 mg/kg bw/day
Inhalation	No hazard identified	No hazard identified	No hazard identified	6.7 mg/m³	No hazard identified	No hazard identified	No hazard identified	2 mg/m³
Dermal	No hazard identifie	No hazard identified	No hazard identified	47.9 mg/kg bw/day	No hazard identified	No hazard identified	No hazard identified	28.75 mg/kg bw/day

	d							
Eyes	Low hazard (no threshold derived)				Low hazard (no threshold derived)			

Propane CAS No. 74-98-6 – DNEL values not determined

Dimethyl ether CAS No. 115-10-6 – DNEL values not determined

Isobutane CAS No. 75-28-5 – DNEL values not determined

8.1.4 PNEC values

4,4'-methylenediphenyl diisocyanate №CAS: 101-68-8

Environmental protection target	Value
Fresh water	3,7 µg/L
Marine water	0,37 µg/L
Microorganisms in sewage treatment	No hazard identified
Freshwater sediments	11,7 mg/kg dw
Marine sediments	1.7 mg/kg dw
Air	No hazard identified
Soil	2,33 mg/kg dw
Food chain	No bioaccumulation potential

Alkanes, C14-17, chloro №CAS: 85535-85-9

Environmental protection target	Value
Fresh water	1 µg/L
Marine water	0,2 µg/L
Microorganisms in sewage treatment	80 mg/L
Freshwater sediments	13 mg/kg dw
Marine sediments	2,6 mg/kg dw
Air	No hazard identified
Soil	11,9 mg/kg dw
Food chain	10 mg/kg food

Dimethyl ether №CAS 115-10-6

Environmental protection target	Value
Fresh water	0,155 mg/L

Marine water	0,016 mg/L
Microorganisms in sewage treatment	160 mg/L
Freshwater sediments	0,681 mg/kg dw
Marine sediments	0,069 mg/kg dw
Air	No hazard identified
Soil	0.045 mg/kg dw
Food chain	No bioaccumulation potential
Propane CAS No. 74-98-6 – PNEC values not determined Isobutane CAS No. 75-28-5 – PNEC values not determined	
8.2. Exposure controls	
8.2.1. Appropriate engineering controls	
Technical measures to prevent exposure	Use only outdoors or in well-ventilated areas, or where adequate ventilation can be ensured.
8.2.2. Individual protection measures, such as personal protective equipment	
8.2.2.1 Eye/face protection:	Protective goggles with side protection (compliant with EN 166, EN ISO 16321-1:2022).
8.2.2.2 Skin protection	Protective gloves (compliant with EN ISO 374) with a coating thickness of 0.02mm. Recommended breakthrough time: more than 10 minutes (class 1 or higher). Standard protective work clothing.
8.2.2.3 Respiratory protection	Not required under adequate ventilation conditions. If substance concentrations in the air may exceed OELs/DNELs (e.g. in small, non-ventilated spaces), wear an appropriately selected respirator: a gas filter for organic vapors with a boiling point > 65 °C (EN 14387, type A) or a particle filter P2 (EN 143).
8.2.2.4 Thermal hazards	Not applicable.
8.2.3. Environmental exposure controls	
Measures to prevent exposure	Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties	
Physical state	Liquid. Aerosol.
Colour	Varies depending on dye.
Odour	Characteristic.
Melting point/freezing point	Not determined.
Boiling point or initial boiling point and boiling range	Not applicable.
Flammability	Extremely flammable aerosol.
Lower and upper explosion limit	Lower explosion limit (LEL): ~3.0% (gases). Upper explosion limit: ~9–16% (gases).
Flash point	Not applicable.
Auto-ignition temperature	Risk of aerosol can explosion due to propellant pressure at 50–60°C. Propellant auto-ignition: 350–420°C.
Decomposition temperature	Not applicable.
pH	Not applicable.
Kinematic viscosity (cSt = mm2/c, 25°C)	No data available.
Solubility	Insoluble.
Partition coefficient n-octanol/water (log value) (log Po/w)	Not applicable to mixtures.
Vapour pressure	6 bar (in the can).
Density and/or relative density	0,95
Relative vapour density	No data available.
Particle characteristics	Not applicable.
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	Extremely flammable aerosol, Category 1.
9.2.2. Other safety characteristics	The product is supplied as an aerosol — a liquid mixture under pressure in a metal container with a flammable propellant (propane/isobutane). Spraying produces a fine aerosol mist and may cause localised surface cooling.

	Pressure inside the can increases when heated; there is a risk of rupture at temperatures above +50°C.

10. STABILITY AND REACTIVITY

10.1 Reactivity	The mixture does not exhibit hazardous reactivity under normal conditions of transport, storage, and use.
10.2 Chemical stability	The mixture is stable under normal conditions of transport, storage, and use. Exposure to high temperatures may lead to explosion of the aerosol can.
10.3 Possibility of hazardous reactions	Hazardous reactions are unlikely under normal conditions of storage and use.
10.4 Conditions to avoid	Avoid exposure to high temperatures, direct sunlight, open flames, and sparks.
10.5 Incompatible materials	Not applicable for aerosol cans.
10.6 Hazardous decomposition products	Thermal decomposition may produce toxic gases such as carbon oxides (CO, CO_2), nitrogen oxides, hydrogen chloride, hydrogen cyanide, as well as other volatile organic compounds and acrid smoke.

11. TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Toxicokinetics, metabolism and distribution
Polymeric MDI has low systemic bioavailability due to the high reactivity of isocyanate groups, which rapidly form stable conjugates with glutathione and proteins at the site of contact. Following oral exposure, insoluble polymeric products are formed in the stomach, preventing absorption into the bloodstream. Dermal absorption is limited (<1%), although sensitising effects are possible. Metabolism involves conjugation with glutathione and proteins, without the formation of free methylenedianiline (MDA). Chlorinated alkanes C14–17 (MCCPs) are partially absorbed (up to 30% of the dose) following oral exposure, with most excreted in faeces. They are primarily distributed to the liver, kidneys, skin, and adipose tissue, with gradual elimination (half-life: 2 to 14 days). Due to high lipophilicity, retention in the body is observed, particularly in fat and skin. Metabolism occurs via glutathione conjugation, forming mercapturic acids. Dermal absorption is very low (~0.7%). Data on inhalation absorption are limited but likely also low. Detection of low MCCP levels in breast milk suggests possible partial excretion via lactation. Propane and isobutane have poor absorption via the respiratory tract (~10%) due to their low solubility (75 mg/L, 61 mg/L, 49 mg/L respectively) and high volatility, resulting in minimal uptake (propane: 0.09–0.1 µg/kg/min/ppm; isobutane: 0.04–0.06 µg/kg/min/ppm at 100 ppm). They are mainly distributed in lipid-rich tissues such as the brain and liver. Metabolism occurs in the liver via cytochrome P450 oxidation to the respective alcohols (propane → isopropanol and acetone; isobutane → tert-butanol). Over 90% is exhaled unchanged through the lungs due to rapid gas exchange, with less than 1% excreted in urine as CO_2. Dimethyl ether is a gas with inhalation as the primary route of exposure. It is rapidly absorbed via passive diffusion in the lungs and is evenly distributed across tissues, including the brain, liver, kidneys, and others, with slightly

higher accumulation in adipose tissue. It is rapidly eliminated from the body and has low bioaccumulation potential.					
Acute toxicity		The mixture meets the classification criteria for this hazard class: Acute Tox. 4, H332. Data are provided below.			
Substance name	Exposure route	Value	Exposure time period	Species	Method (as is, equivalent or similar)
POLYMERIC MDI	Oral	LD_{50} > 2000 mg/kg bw	Single dose	rat	Not specified Read-across
	Dermal	LD_{50} = 9400 mg/kg bw	Not specified	rabbit	Not specified Read-across
	Inhalation	LC_{50} = 431 mg/m^3	4 h	rat	OECD Guideline 403 Read-across
Alkanes, C14-17, chloro	Oral	LD_{50} > 10 ml/kg bw	Single dose	rat	Not specified
	Dermal	LD_{50} > 2,5 ml/kg bw	24 h	rat	Not specified Read-across
	Inhalation	> 48170 mg/m^3	1 h	rat	Not specified Read-across
Hydrocarbon mixture: propane and isobutane	Inhalation	LC_{50} = 539600 ppm	120 min	Mouse	Not specified
Dimethyl ether	Inhalation	LC_{50} = 164000 ppm	4 h	rat	OECD Guideline 403
Skin corrosion/irritation		The mixture meets the classification criteria for this hazard class: Skin Irrit. 2, H315. Data are provided below.			
Substance name	Relevance	Result		Species	Method (as is, equivalent or similar)
POLYMERIC MDI	Yes	Duration: 4 h Time point: 24/48/72 h . Irritation parameter: edema score		rabbit	OECD Guideline 404 Read-across

		Score: 1,33 Max. score: 4 Fully reversible within 8 days Upon contact with the skin, MDI rapidly reacts with proteins and moisture, forming an insoluble mass that limits penetration. Only mild and reversible signs of irritation are observed (erythema, edema, desquamation). All substances in this category are classified as Skin Irrit. 2, H315.		
Alkanes, C14-17, chloro	No	Exposure time: 4 h Time point: 24/48/72 h Irritation parameter: erythema score Score: 1,3 Max. score: 4 Irritation parameter: edema score Score: 0,3 Max. score: 4.	rabbit	OECD Guideline 404
Liquefied gases: propane, isobutane, dimethyl ether	No	Direct contact of liquefied gases with the skin may cause frostbite, as they are extremely cold liquids.	-	-
Serious eye damage/irritation		The mixture meets the classification criteria for this hazard class: Eye Irrit. 2, H319. Data are provided below.		
Substance name	Relevance	Result	Species	Method (as is, equivalent or similar)
POLYMERIC MDI	Yes	1. Irritation parameter: corneal opacity score Time point: 24/48/72 h Score: 0,05. Max. score: 4. Fully reversible within 2 days 2. Irritation parameter: iris score. Time point: 24/48/72 h Score: 0. Max. score: 2	rabbit	OECD Guideline 405 Read-across

		3. Irritation parameter: conjunctivae score Time point: 24/48/72 h Score: 0,61. Max. score: 3 Fully reversible within 8 days 4. Irritation parameter: chemosis score Time point: 24/48/72 h Score: 0,56. Max. score: 4 Fully reversible within 8 days		
Alkanes, C14-17, chloro	No	1. Irritation parameter: corneal opacity score Time point: 7 days Score: 0. Max. score: 80. 2. Irritation parameter: iris score. Time point: 7 days Score: 0. Max. Score: 80. 3. Irritation parameter: conjunctivae score Time point: 1-2 h Score: 3,3. Max. score: 20 4. Irritation parameter: maximum mean score Time point: 24/48/72 h Score: 3,3. Max. score: 110.	rabbit	Not specified
Liquefied gases: propane, isobutane, dimethyl ether	No	Direct contact of liquefied gases with mucous membranes may cause frostbite and cryogenic burns, as they are extremely cold liquids.	-	-
Respiratory or skin sensitization		The mixture meets the classification criteria for this hazard class: Resp. Sens. 1, H334; Skin Sens. 1B, H317. Data are provided below.		
Substance name	Relevance	Result	Species	Method (as is, equivalent or similar)
POLYMERIC MDI	Yes	All MDI-category substances are potentially sensitising due to the presence of reactive NCO groups capable of forming protein–hapten	guinea pig	OECD Guideline 406 Read-across.

		complexes that trigger an immune response. However, rapid binding to skin proteins limits penetration. This is consistent with negative results in the Buehler test and a low incidence of contact allergy in humans.		
POLYMERIC MDI	Yes	MDI-category substances are classified as respiratory sensitisers.	guinea pig	Not specified. Read-across.
Alkanes, C14-17, chloro	No	No skin sensitisation reactions were observed	guinea pig	Draft RAR (EU, 2008)
Reliable data for propane, isobutane, and dimethyl ether are not available.				
Germ cell mutagenicity		Based on available data, the classification criteria are not met. Data are provided below.		
Substance name	Relevance	Result	Species	Method (as is, equivalent or similar)
POLYMERIC MDI	No	Negative	S. typhimurium	in vitro EU method B.13/14 Read-across
	No	Negative	rat	in vivo OECD Guideline 489 Read-across
Alkanes, C14-17, chloro	No	Negative	S. typhimurium	in vitro OECD Guideline 471
	No	Negative	rat	in vivo OECD Guideline 475
Propane/Isobutane	No	Negative	S. typhimurium	in vitro OECD Guideline 471 Read-across
	No	Negative	rat	in vivo OECD Guideline

				474
Dimethyl ether	No	Negative	S. typhimurium	in vitro OECD Guideline 471
	No	Negative	Drosophila melanogaster	in vivo OECD Guideline 477
Carcinogenicity		The mixture meets the classification criteria for this hazard class: Carc. 2, H351. Data are provided below.		
POLYMERIC MDI	Yes	NOAEC = 0,7 mg/m^3 air Dose-dependent impairment of lung function, increased lung mass, inflammation with lymphocytic infiltration, delayed clearance, fibrosis, alveolar epithelial proliferation, and isolated cases of bronchiolo-alveolar adenoma were observed. A carcinogenic potential is present.	rat	Directive 87/302/EEC, Part B, Read-across
Alkanes, C14-17, chloro	Yes	LOAEL = 125 mg/kg bw/day Carcinogenic activity was observed in the liver of both sexes and in the thyroid gland of females. However, the data are insufficient for classification as a carcinogen	Mouse	OECD Guideline 451
Propane/isobutane	No	Simple chemical structures without reactive groups and conclusions that C1-C4 alkanes are non-genotoxic provide strong evidence that none of these substances exhibit significant carcinogenic activity.	-	-
Dimethyl ether	No	No evidence of carcinogenicity. NOAEC = 47106 mg/m³	rat	OECD Guideline 453
Reproductive toxicity		The mixture meets the classification criteria for this hazard class: Lact., H362. Data are provided below.		
Substance name	Relevance	Result	Species	Method (as is, equivalent or

				similar)
POLYMERIC MDI	No	NOAEC (fertility) = 0,3 ppm Dose-dependent changes were observed in the respiratory system; however, no effects on reproductive organs or other systemic effects were detected.	rat	OECD Guideline 416
	No	NOAEC (develop.) = 3 mg/m³ A slight increase in the incidence of skeletal variations (asymmetric sternebrae) was observed.	rat	OECD Guideline 414
Alkanes, C14-17, chloro	Yes	Harmonized classification: Lact., H362. Increased offspring mortality during the lactation period due to internal hemorrhages. These effects were caused by decreased vitamin K levels in the milk of dams, resulting from toxic effects on vitamin K absorption in the gastrointestinal tract and direct transfer of MCCPs into breast milk. NOAEL (develop.) = 47 mg/kg bw/day	rat	Not specified
Propane/isobutane	No	NOAEC (fertility) = 7,131 mg/m³ NOAEC (developmental) = 21394 mg/m³ Ambiguous effects on fertility and increased post-implantation losses. No effects on gestation length, number of live and dead fetuses, or fetal anomalies were observed.	rat	OECD Guideline 422
Dimethyl ether	No	NOAEC (P0, F1) > 16 000 ppm No systemic toxicity, reproductive or developmental effects were observed.	rat	OECD Guideline 422
	No	NOAEC = 40000 ppm Decreased fetal weight.	rat	OECD Guideline 414
STOT-single exposure		The mixture meets the classification criteria for this hazard class: STOT SE 3, H335. Results from read-across acute inhalation toxicity studies for MDI monomer indicate marked respiratory irritation with fatal outcomes associated with lower respiratory tract irritation (alveolar edema).		
STOT-repeated exposure		The mixture meets the classification criteria for this hazard class: STOT		

		RE 2, H373 (respiratory organs, inhalation). Data are provided below.			
Substance name	Exposure route	Value	Exposure time period	Species	Method (as is, equivalent or similar)
POLYMERIC MDI	Inhalation	LOAEC = 0.23 mg/m^3 Dose-dependent impairment of lung function, characterized by obstructive-restrictive dysfunction with diffusion impairment, increased lung weight, inflammatory response, delayed pulmonary clearance, interstitial and peribronchiolar fibrosis, alveolar bronchiolization, preneoplastic proliferation of alveolar epithelium, as well as bronchiolo-alveolar adenoma.	2 years	rat	Directive 87/302/EEC, Part B, p. 37.
Alkanes, C14-17, chloro	Oral	NOAEL = 23 mg/kg bw/day	90 days	rat	OECD Guideline 408
Propane/isobutane	Inhalation	NOAEL = 19678 mg/m^3	2 weeks	rat	OECD Guideline 422
Dimethyl ether	Inhalation	NOAEC = 47106 mg/m^3	2 years	rat	OECD Guideline 452
Aspiration hazard		Based on available data, the classification criteria are not met.			
Adverse health effects and symptoms associated with exposure					
In case of inhalation		The risk mainly arises during the application of uncured foam under conditions of inadequate ventilation or improper work practices. Inhalation of aerosol particles or vapors of volatile components may cause respiratory irritation, temporary dyspnea, coughing, or allergic reactions in sensitive individuals. Once cured, the foam does not release active components and does not pose a hazard.			
In case of eye contact		Redness, burning sensation, lacrimation, or temporary visual impairment, and may also cause an allergic reaction in sensitive individuals.			

In case of skin contact	Possible skin irritation, redness, and itching. In sensitive individuals, allergic reactions such as rash and contact dermatitis may occur.
In case of ingestion	The likelihood of accidental ingestion is low due to the aerosol form. Ingestion of uncured foam may cause nonspecific gastrointestinal symptoms such as nausea and discomfort. There is also a theoretical risk for infants during breastfeeding due to the potential transfer of residual substances into breast milk.
11.2. Information on other hazards	
11.2.1. Endocrine disrupting properties	Chemical substances in the mixture are not considered to have endocrine-disrupting properties with respect to humans as do not meet the criteria set out in section A of Regulation (EU) No 2017/2100.
11.2.2. Other information	None.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

The mixture meets the classification criteria for the hazard class Aquatic Chronic 4, H413.

The mounting polyurethane foam contains from 10 to 20% chlorinated alkanes C14–17 (MCCP, CAS No. 85535-85-9), which are considered significantly hazardous to the aquatic environment. However, in the cured foam, MCCPs are chemically bound within the polyurethane matrix and are not released into the aquatic environment; they are not bioavailable, as confirmed by test results.

A detailed justification of the hazard classification for this class is provided in Section 16.

The data for the mixture as a whole and its components presented below are used to support and justify the hazard classification of the chemical substances and the product.

Substance name	Aquatic toxicity	Effect dose	Exposure time	Species	Method
Polyurethane foam prepolymer containing 30% MCCP	Acute toxicity to aquatic invertebrates	No adverse effects observed (LC_{50} not determined)	48 h	Daphnia magna	BMG Test No. A10-00856 (acute toxicity for Daphnia)
	Toxicity to aquatic algae and cyanobacteria	No adverse effects observed (LC_{50} not determined)	-	Desmodesmus subspicatus	Test BMG No. A10-00857 (freshwater algae growth inhibition)
	Aquatic environment	No dissolved MCCP detected in the medium LOD < 0.2 µg/L	28 days	-	NOACK protocol, Test No. 140306HW_CLW15930 (leaching test)

POLYMERIC MDI	Acute toxicity to fish	LL_{50} > 100 mg/L	96 h	Danio rerio	OECD Guideline 203 Read-across
	Acute toxicity to aquatic invertebrates	EL_{50} = 9 mg/L	48 h	Daphnia magna	OECD Guideline 202 Read-across
	Long-term toxicity to aquatic invertebrates	NOEC = 10 mg/L	21 days	Daphnia magna	OECD Guideline 211 Read-across
	Toxicity to aquatic algae and cyanobacteria	EL_{50} > 100 mg/L	72 h	Desemodesmus subspicatus	OECD Guideline 201 Read-across
	Toxicity to microorganisms	LC_{50} > 1000 mg/L	3 h	Activated sludge	OECD Guideline 209 Read-across
Alkanes, C14-17, chloro	Acute toxicity to fish	LC_{50} > 5000 mg/L	96 h	Alburnus alburnus	OECD Guideline 203
	Long-term toxicity to fish	NOEC = 4.5 mg/L	60 days	Oncorhynchus mykiss	OECD Guideline 204
	Acute toxicity to aquatic invertebrates	EL_{50} = 0.0077 mg/L	48 h	Daphnia magna	OECD Guideline 202
	Long-term toxicity to aquatic invertebrates	NOEC = 0.01 mg/L	21 days	Daphnia magna	OECD Guideline 202
	Toxicity to aquatic algae and cyanobacteria	LC_{50} = 3,2 mg/L	96 h	Raphidocelis subcapitata	OECD Guideline 201
	Toxicity to microorganisms	NOEC = 800 mg/L	24 h	anaerobic bacteria from a domestic wastewater treatment plant	ETAD test tube fermentation method
Propane/isobutane	Acute toxicity to fish	LC_{50} = 53.141 mg/L	96 h	freshwater fish	(Q)SAR

	Long-term toxicity to fish	NOEC = 3.599 mg/L	30 days	freshwater fish	(Q)SAR
	Acute toxicity to aquatic invertebrates	LC_{50} = 29.662 mg/L	48 h	daphnids	(Q)SAR
	Long-term toxicity to aquatic invertebrates	NOEC = 1.95 mg/L	30 days	daphnids	(Q)SAR
	Toxicity to aquatic algae and cyanobacteria	EC_{50} = 20.586 mg/L	96 h	Green algae	(Q)SAR
Dimethyl ether	Acute toxicity to fish	LC_{50} > 4 g/L	96 h	Poecilia reticulata	NEN 6504
	Acute toxicity to aquatic invertebrates	EC_{50} > 4.4 g/L	48 h	Daphnia magna	NEN6501
	Toxicity to aquatic algae and cyanobacteria	EC_{50} = 154.917 mg/L	96 h	daphnids	(Q)SAR
	Toxicity to microorganisms	EC_{10} > 1600 mg/L	-	Pseudomonas putida	Robra test

12.2. Persistence and degradability

Abiotic Degradation

POLYMERIC MDI and Alkanes, C14–17, chloro in the composition of polyurethane foam rapidly and irreversibly polymerize upon contact with ambient moisture or substrate surfaces, forming an inert, insoluble, and stable polyurethane structure.

Hydrolysis of unreacted MDI (prior to polymerization) in aqueous media occurs within 5 minutes and it rapidly transforms in air (half-life approximately 8 hours) into inert polymeric compounds.

Alkanes, C14–17, chloro are highly stable in water and soil, with an estimated half-life exceeding 1,000,000 days, indicating a high resistance to hydrolysis. In air, they degrade slowly under the influence of hydroxyl radicals, with a half-life of approximately 1 day, but exhibit very low reactivity toward OH radicals, which limits their photochemical breakdown.

Propane is resistant to hydrolysis in water due to the absence of reactive functional groups, but it rapidly degrades in the atmosphere via reaction with hydroxyl radicals, with an estimated half-life of approximately 14 days, forming simpler compounds.

Isobutane is stable in water and does not undergo hydrolysis; however, in the atmosphere, it degrades under the influence of hydroxyl radicals with a half-life of approximately 6 days, leading to its rapid removal from the air.

Dimethyl ether is a gas under standard conditions, does not undergo hydrolysis, and remains stable in water and soil. At the same time, it degrades rapidly in the atmosphere due to reactions with hydroxyl radicals, with a half-life of about 5 days.

Biodegradation

After curing, the foam forms a stable polyurethane polymer that is chemically inert and virtually non-biodegradable under environmental conditions. The water solubility and bioavailability of the cured foam are very low, which limits the potential for microbial degradation.

MDI-category substances contain aromatic isocyanate groups that hydrolyze rapidly upon contact with water and polymerize to form an insoluble polyurethane structure. As a result, biodegradation is not a relevant transformation pathway for these substances.

Chlorinated alkanes C14–17, which are included in the formulation, become chemically bound during the curing process, forming a stable polymer matrix. According to the manufacturer's technology, complete incorporation into the polymer structure is expected, minimizing the risk of environmental release. In this bound state, the substance is considered non-biodegradable. In its free state, it exhibits high persistence in water and soil (half-life >1,000,000 days), and is also not biodegradable.

Propane/isobutane shows a low potential for rapid biodegradation in water or soil due to poor solubility and resistance to microbial metabolism.

Dimethyl ether does not undergo biodegradation in water or soil due to its volatile nature, low solubility, and lack of bioavailability in these media.

12.3. Bioaccumulative potential

MDI-category substances exhibit high reactivity with water, which prevents the application of standard bioaccumulation testing methods. Limited test data on fish (BCF = 200 for 4,4'-MDI over 28 days) and for pMDI do not provide conclusive evidence regarding their bioaccumulation potential. Given the rapid polymerization of MDI in aqueous environments, bioaccumulation is considered unlikely.

Chlorinated alkanes C14–17 have a potential for bioaccumulation (BCF = 1090); however, in cured polyurethane foam, they are fully chemically bound within the polymer matrix, rendering them non-bioavailable.

Propane and isobutane exhibit low bioaccumulation potential due to their high volatility and low water solubility, with BCF values <10, as they evaporate rapidly and do not accumulate in organisms.

Dimethyl ether is highly volatile, with low sorption and partitioning capacity in organisms, and therefore has a low potential for bioaccumulation in aquatic species.

12.4. Mobility in soil

After curing, the foam forms an insoluble polyurethane structure characterized by high stability and extremely low mobility in soil.

In cases where residual isocyanates are present, temporary migration in the upper soil layers may occur; however, due to their high volatility and/or rapid hydrolysis in the presence of moisture, their mobility is extremely limited.

Propane and isobutane exhibit high mobility in soil (Koc <10) due to their low solubility (49–75 mg/L) and high vapor pressure (2,438–8,532 hPa), and they rapidly volatilize from the surface.

Dimethyl ether has very high volatility, a low sorption coefficient (Koc ≈ 7.8), and a low octanol-water partition coefficient (log Kow ≈ 0.07). If released into soil, the substance quickly evaporates from the surface or diffuses into the atmosphere. As a result, it has very high mobility in soil, but its presence there is short-lived.

12.5. Results of PBT and vPvB assessment
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
12.6. Endocrine disrupting properties
The components of the mixture are not considered to have endocrine disrupting properties for the environment.
12.7. Other adverse effects
None.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods	
13.1.1 Product / Packaging disposal	Waste related to the use of the mixture mainly consists of nearly empty aerosol cans containing residual product. Empty aerosol cans and fully cured foam may be disposed of as household waste. However, where possible, empty, depressurized cans should be taken to appropriate collection and recycling facilities for this type of waste. Cured foam may be considered construction and demolition waste. Unused aerosol cans must be treated as hazardous waste and should be handed over to licensed waste collection and treatment facilities authorized to handle hazardous materials.
Waste codes / waste designations according to EWC:	The following codes may be applicable depending on the waste type and local regulations: 15 01 04 metallic packaging 17 06 03 other insulation materials consisting of or containing hazardous substances
13.1.2 Waste treatment -relevant information	Waste from the product and its packaging is not suitable for recycling and should be disposed of by controlled incineration in specialized facilities complying with environmental protection and safety requirements. During waste handling, appropriate personal protective equipment (PPE) must be used, including safety goggles, gloves, protective clothing, and respiratory protection.
13.1.3 Sewage disposal-relevant information	Do not discharge product residues into drains or water bodies.
13.1.4 Other disposal recommendations:	Do not puncture or heat the cans, even if empty, due to the risk of explosion.

14. TRANSPORT INFORMATION

The product is permitted for transport by road (ADR), rail (RID), sea (IMDG), and air (IATA-ICAO).	
14.1 UN number or ID number	ADR: 1950 RID: 1950 IMDG: 1950 IATA- ICAO: 1950
14.2 UN proper shipping name	ADR: AEROSOLS, flammable RID: AEROSOLS, flammable IMDG: AEROSOLS, flammable IATA- ICAO: AEROSOLS, flammable
14.3 Transport hazard class(es)	2 Classification code: 5F
14.4. Packing group	-
14.5. Environmental hazards	ADR/RID/IMDG/IATA- ICAO: not classified as environmentally hazardous. IMDG: Not a marine pollutant.
14.6. Special precautions for user	Special provisions: 190 327 344 625 Limited quantity: 1 L Excepted quantity: E0 Special packing provisions: PP87, RR6, L2, 203, Y203 Mixed packing provisions: MP9 Tunnel code: 2 (D) Special provisions for carriage: Packages: V14 Emergency schedules for marine pollutants: F-D, S-U ERG Code: 10L
14.7. Maritime transport in bulk according to IMO instruments	The product is not intended for bulk transport.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Directive 75/324/EEC
15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out for this mixture.

16. OTHER INFORMATION

16.1. Indication of changes
The SDS has been issued for the first time.

16.2. Abbreviations and acronyms	
Aerosol 1	Flammable aerosols and aerosols, Category 1
Flam. Gas 1A	Flammable gases, Category 1A
Acute Tox. 4	Acute toxicity, Category 4
Skin Irrit. 2	Skin irritation, Category 2
Eye Irrit. 2	Eye irritation, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, Category 1B
Carc. 2	Carcinogenicity, Category 2
STOT SE 3	Specific target organ toxicity – single exposure, Category 3
STOT RE 2	Specific target organ toxicity – repeated exposure, Category 2
Lact.	Effects on or via lactation (Toxic to reproduction– additional classification for effects during lactation)
Aquatic Acute 1	Hazardous to the aquatic environment (acute), Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment (long-term), Category 1
Aquatic Chronic 4	Hazardous to the aquatic environment (long-term), Category 4
PPE	Personal Protective Equipment
LD_{50}	Lethal Dose, 50%. Median dose causing death in 50% of the test population
LC_{50}	Lethal Concentration, 50%. Median concentration causing death in 50% of the test population
LL_{50}/ EL_{50}	LL_{50} – Lethal Loading, 50% / EL_{50} – Effective Loading, 50%. Median loading in aquatic studies causing 50% mortality or effect
EC_{50}	Effective Concentration, 50%. Concentration causing 50% of maximum observed effect such as inhibition of growth, reproduction, or activity
NOAEL	NOAEL – No Observed Adverse Effect Level. Highest tested dose at which no adverse effects are observed
NOEC/NOAEC	No Observed Effect Concentration / No Observed Adverse Effect Concentration
DNEL	Derived No-Effect Level. Safe exposure level for humans under REACH
PNEC	Predicted No-Effect Concentration. Concentration below which no adverse effects are

	expected in the environment
PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent and very Bioaccumulative substance
BCF	Bioconcentration Factor
LOD	Limit of Detection
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
IMDG	International Maritime Dangerous Goods Code
IATA-ICAO	Dangerous Goods Regulations of the International Air Transport Association / International Civil Aviation Organization
MARPOL	International Convention for the Prevention of Pollution from Ships
Kow	n-Octanol/Water Partition Coefficient

16.3. Key literature references and sources for data

ECHA database on registered substances

ECHA Classification and Labelling (C&L) Inventory

GESTIS database on occupational exposure limit values (OELs)

Safety Data Sheets (SDS) for the raw material components of the mixture

FEICA Information Note on the classification and labelling of moisture-curing one-component polyurethane foams containing medium-chain chlorinated paraffins (MCCP), 15 December 2020

16.4. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

The hazard classification of the mixture for all hazard classes, except for "Flammable aerosols" and "Hazardous to the aquatic environment", was carried out using the summation and additivity method based on the hazard classifications of the substances contained in the mixture and their concentrations.

Classification as "Flammable aerosol" was carried out according to Note 1 to section 2.3.2.2 of Annex I to Regulation (EC) No 1272/2008 (CLP), and point 1.11 (3) of Annex to Directive 75/324/EEC on aerosol dispensers.

The classification of the substance/mixture as hazardous to the aquatic environment was carried out using a weight of evidence approach.

Justification for classification under the hazard class "Hazardous to the aquatic environment", Category 4 .

The one-component polyurethane foam manufactured by our company contains 10-20% of alkanes, C14-17, chloro (MCCP, CAS No. 85535-85-9) in the prepolymer component. According to ecotoxicological test results available in the ECHA databases, this substance may pose a significant environmental hazard due to its high toxicity to aquatic organisms, persistence, low biodegradability, and potential for bioaccumulation

However, under actual conditions of use, these chlorinated alkanes are not present in free form. During industrial manufacturing, MCCPs are chemically bound within the polyurethane matrix due to temperature, pressure, and the reactive nature of isocyanate groups. Upon application, the foam rapidly and fully cures through reaction with

atmospheric moisture, forming an insoluble, inert polymer network in which the MCCPs are fully embedded and immobilised.

Based on this, the classification as Aquatic Chronic Category 4 is applied using a weight of evidence approach, taking into account both substance hazard properties and its transformation during use into a non-bioavailable polymer form.

A 28-day leaching study conducted by the German laboratory NOACK demonstrated that at a foam concentration of 1 mg/L in an aqueous medium, no MCCPs (C14-17 chlorinated alkanes) were detected—even under extreme conditions involving mechanical shredding, freezing, and prolonged water contact. The detection limit was below 0.2 µg/L, which is lower than the chronic ecotoxicity thresholds.

Additionally, a 48-hour acute aquatic toxicity test (on Daphnia and algae), performed by the independent Swiss laboratory BMG Engineering AG using foam samples containing up to 30% MCCP, showed no toxic effects—even in the uncured (fresh) state of the foam.

These findings support the conclusion that the cured and uncured forms of the polyurethane foam do not pose an environmental hazard under realistic use conditions.

According to Annex I, Part 4.1 of Regulation (EC) No 1272/2008 (CLP), the classification criteria for substances and mixtures hazardous to the aquatic environment allow for the use of test data on the mixture as a whole, as well as the consideration of the bioavailability of hazardous constituents in the final product.

Specifically, paragraph 4.1.3.3 provides that, where reliable and adequate data on aquatic toxicity are available for the mixture itself, such data may be used for classification in accordance with the same criteria as those applied to substances. Although paragraphs 4.1.1.3.2 and 4.1.2.10 formally refer to inorganic substances (such as metals) and certain special mixtures (e.g., alloys), the underlying regulatory logic may, by analogy, be extended to organic substances in a chemically bound form—particularly in cases where there is no actual release or bioavailability of the hazardous component. This rationale applies to the case of polyurethane foam containing chemically bound MCCP, where the presence of this substance does not result in an actual hazard to the aquatic environment, as confirmed by leaching and ecotoxicological testing.

Applying a weight of evidence approach, taking into account the available test results on the mixture as a whole, as well as guidance from FEICA, the classification of the polyurethane foam as hazardous to the aquatic environment (Aquatic Acute 1, H400; Aquatic Chronic 1, H410) is not considered justified.

However, following a precautionary approach and considering the presence of MCCP within the polymerised foam matrix, a conservative decision was made to classify the product as hazardous to the aquatic environment, long-term hazard, Category 4 (H413), in accordance with Annex I, section 4.1.2.4 of Regulation (EC) No 1272/2008 (CLP).

16.5. Relevant H-statements (number and full text)

H220: Extremely flammable gas.

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

16.6. Training advice

Read this Safety Data Sheet carefully before use.

16.7. Further information

The information contained in this Safety Data Sheet is based on the knowledge and experience available to the company at the time of publication. The user of this product is responsible for any consequences resulting from

use other than as specified in Section 1.

This information applies solely to the designated product and may not be valid if the product is used in combination with other materials or in any manufacturing process not expressly stated.