



Safety Data Sheet according to (EC) No 1907/2006 as amended

Page 1 of 19

UNIBOND WHITEQ GUNFOAM

SDS No. : 600540

V002.0

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

1.1. Product identifier

UNIBOND WHITEQ GUNFOAM

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

Intended use:

Foam, 1-component with propellant gas

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Adhesives

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

Fax-no.: +44 (1442) 278071

ua-productsafety.uk@henkel.com

1.4. Emergency telephone number

24 Hours Emergency Tel: +44 0 8701 906777 - For further general health & safety, technical and practical advice on this product, please call +44 (0) 1606 593933 or write to: Technical Services; Henkel Limited; Road 5; Winsford Industrial Estate; Winsford; Cheshire; CW7 3QY- Email: technical.services@henkel.co.uk

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Flammable aerosols	Category 1
H222 Extremely flammable aerosol.	
H229 Pressurized container: May burst if heated.	
Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Respiratory sensitizer	Category 1
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Carcinogenicity	Category 2
H351 Suspected of causing cancer.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation.	
Target organ: respiratory tract irritation	
Specific target organ toxicity - repeated exposure	Category 2
H373 May cause damage to organs through prolonged or repeated exposure.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

Diphenylmethane diisocyanate, isomers and homologues

Signal word:

Danger

Hazard statement:

- H222 Extremely flammable aerosol.
- H229 Pressurized container: May burst if heated.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statement:	P102 Keep out of reach of children.
Precautionary statement: Prevention	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 vapours. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/eye protection.
Precautionary statement: Storage	P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Precautionary statement: Disposal	P501 Dispose of contents/container in accordance with national regulation.

2.3. Other hazards

Information according to XVII. 56 REACH

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.

Solvents contained in the product evaporate during processing and their vapors can form explosive/highly inflammable air/vapor mixtures.

Pregnant women should absolutely avoid inhalation and skin contact.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General chemical description:

1-Component PU foam in pressurized can

Base substances of preparation:

Polyurethane prepolymer

With free 4,4'-methylenediphenyl diisocyanate (MDI)

Propellant gas base: dimethyl ether-isobutane/propane mixture

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
dimethyl ether 115-10-6	204-065-8 01-2119472128-37	10- 20 %	Flam. Gas 1 H220 Press. Gas H280
4,4'- methylenediphenyl diisocyanate 101-68-8	202-966-0 01-2119457014-47	5- < 10 %	Carc. 2 H351 Acute Tox. 4; Inhalation H332 STOT RE 2 H373 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Resp. Sens. 1 H334 Skin Sens. 1B H317
MDI homopolymer 25686-28-6	500-040-3 500-040-3 01-2119457013-49	1- < 5 %	Acute Tox. 4; Inhalation H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Resp. Sens. 1 H334 Skin Sens. 1 H317 STOT SE 3 H335 Carc. 2 H351 STOT RE 2; Inhalation H373
Isobutane 75-28-5	200-857-2 01-2119485395-27	1- < 5 %	Flam. Gas 1 H220 Press. Gas H280
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	01-2119486772-26	1- < 5 %	Acute Tox. 4; Oral H302
Propane 74-98-6	200-827-9 01-2119486944-21	1- < 5 %	Flam. Gas 1 H220 Press. Gas H280

**For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.**

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of adverse health effects seek medical advice.

Inhalation:

Move to fresh air, consult doctor if complaint persists.
Delayed effects possible after inhalation.

Skin contact:

Fresh foam : Wipe off affected skin area immediately with a soft cloth and then remove residues with vegetable oil; apply skin care product. Cured foam can be removed only mechanically.

Eye contact:

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remain (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

Ingestion:

Rinse mouth, do not induce vomiting, consult a doctor.

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

Causes serious eye irritation.

SKIN: Redness, inflammation.

May cause an allergic skin reaction.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

Danger of serious damage to health by prolonged exposure.

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

See section: Description of first aid measures

SECTION 5: Fire fighting measures**5.1. Extinguishing media****Suitable extinguishing media:**

carbon dioxide, foam, powder, water spray jet, fine water spray

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

In the event of fire, isocyanate vapors may be formed.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

Additional information:

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective equipment.

Ensure adequate ventilation.

Avoid contact with skin and eyes.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Remove mechanically.

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ventilate working rooms thoroughly. Avoid naked flames, sparking and sources of ignition. Switch off electrical devices. Do not smoke, do not weld. Do not empty waste into waste water drains.

During processing and drying after adhesion, ventilate well. Avoid all sources of fire such as stoves and ovens. Switch off all electrical devices such as parabolic heaters, hot plates, storage heaters etc. in good time for them to have cooled down before commencing work. Avoid all sparks, including those occurring at electrical switches and devices.

Transport by automobile: leave the container wrapped in a cloth in the trunk, never in the passenger area.

Avoid skin and eye contact.

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

Remove any dirt that gets onto the skin with vegetable oil; skin care.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container.

For pressurized can: protect from direct sunshine and temperatures above 50°C.

Storage at 5 to 25°C is recommended.

Store in a cool, dry place.

Ensure that storage and workrooms are adequately ventilated.

Avoid strictly temperatures below - 20 °C and above + 50 °C.

Protect from direct sunlight.

Do not store or use near heat, spark, open flame or other sources of ignition.

Do not store together with food or other consumables (coffee, tea, tobacco, etc.).

Do not store together with oxidants.

Do not store together with flammable solutions.

7.3. Specific end use(s)

Foam, 1-component with propellant gas

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Dimethyl ether 115-10-6 [DIMETHYLETHER]	500	958	Short Term Exposure Limit (STEL):		EH40 WEL
Dimethyl ether 115-10-6 [DIMETHYLETHER]	400	766	Time Weighted Average (TWA):		EH40 WEL
Dimethyl ether 115-10-6 [DIMETHYLETHER]	1.000	1.920	Time Weighted Average (TWA):	Indicative	ECTLV
4,4'-Methylenediphenyl diisocyanate 101-68-8 [ISOCYANATES, ALL (AS-NCO)]		0,07	Short Term Exposure Limit (STEL):		EH40 WEL
4,4'-Methylenediphenyl diisocyanate 101-68-8 [ISOCYANATES, ALL (AS-NCO)]		0,02	Time Weighted Average (TWA):		EH40 WEL
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6 [ISOCYANATES, ALL (AS-NCO)]		0,02	Time Weighted Average (TWA):		EH40 WEL
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6 [ISOCYANATES, ALL (AS-NCO)]		0,07	Short Term Exposure Limit (STEL):		EH40 WEL

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Dimethyl ether 115-10-6 [DIMETHYLETHER]	1.000	1.920	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Dimethyl ether 115-10-6 [DIMETHYLETHER]	1.000	1.920	Time Weighted Average (TWA):	Indicative	ECTLV
4,4'-Methylenediphenyl diisocyanate 101-68-8 [4,4'-METHYLENE-DIPHENYL DIISOCYANATE (AS-NCO)]	0,005		Time Weighted Average (TWA):		IR_OEL
Isobutane 75-28-5 [ISOBUTANE]	1.000		Short Term Exposure Limit (STEL):	15 minutes	IR_OEL
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6 [ISOCYANATES (ALL, AS-NCO)]		0,02	Time Weighted Average (TWA):		IR_OEL
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6 [ISOCYANATES (ALL, AS-NCO)]		0,07	Short Term Exposure Limit (STEL):	15 minutes	IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Dimethyl ether 115-10-6	aqua (freshwater)		0,155 mg/l				
Dimethyl ether 115-10-6	sediment (freshwater)				0,681 mg/kg		
Dimethyl ether 115-10-6	Soil				0,045 mg/kg		
Dimethyl ether 115-10-6	sewage treatment plant (STP)		160 mg/l				
Dimethyl ether 115-10-6	aqua (marine water)		0,016 mg/l				
Dimethyl ether 115-10-6	aqua (intermittent releases)		1,549 mg/l				
Dimethyl ether 115-10-6	sediment (marine water)				0,069 mg/kg		
4,4'- methylenediphenyl diisocyanate 101-68-8	aqua (freshwater)		1 mg/l				
4,4'- methylenediphenyl diisocyanate 101-68-8	aqua (marine water)		0,1 mg/l				
4,4'- methylenediphenyl diisocyanate 101-68-8	Soil				1 mg/kg		
4,4'- methylenediphenyl diisocyanate 101-68-8	sewage treatment plant (STP)		1 mg/l				
4,4'- methylenediphenyl diisocyanate 101-68-8	Air						no hazard identified
4,4'- methylenediphenyl diisocyanate 101-68-8	Predator						no potential for bioaccumulation
4,4'- methylenediphenyl diisocyanate 101-68-8	aqua (intermittent releases)		10 mg/l				
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	aqua (freshwater)		1 mg/l				
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	aqua (marine water)		0,1 mg/l				
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	Soil				1 mg/kg		
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	sewage treatment plant (STP)		1 mg/l				
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	aqua (intermittent releases)		10 mg/l				
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	sewage treatment plant (STP)		7,84 mg/l				
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	sediment (marine water)				1,34 mg/kg		
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	sediment (freshwater)				13,4 mg/kg		
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	Soil				1,7 mg/kg		
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	aqua (marine water)		0,064 mg/l				
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	aqua (freshwater)		0,64 mg/l				
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	aqua (intermittent releases)		0,51 mg/l				
Phosphorous oxychloride, reaction products	oral				11,6 mg/kg		

with propylene oxide 1244733-77-4						
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Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Dimethyl ether 115-10-6	Workers	inhalation	Long term exposure - systemic effects		1894 mg/m ³	
Dimethyl ether 115-10-6	General population	inhalation	Long term exposure - systemic effects		471 mg/m ³	
4,4'-methylenediphenyl diisocyanate 101-68-8	Workers	inhalation	Long term exposure - local effects		0,05 mg/m ³	no hazard identified
4,4'-methylenediphenyl diisocyanate 101-68-8	Workers	inhalation	Acute/short term exposure - local effects		0,1 mg/m ³	no hazard identified
4,4'-methylenediphenyl diisocyanate 101-68-8	General population	inhalation	Long term exposure - local effects		0,025 mg/m ³	no hazard identified
4,4'-methylenediphenyl diisocyanate 101-68-8	General population	inhalation	Acute/short term exposure - local effects		0,05 mg/m ³	no hazard identified
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	Workers	inhalation	Long term exposure - local effects		0,05 mg/m ³	
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	Workers	inhalation	Acute/short term exposure - local effects		0,1 mg/m ³	
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	General population	inhalation	Long term exposure - local effects		0,025 mg/m ³	
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6	General population	inhalation	Acute/short term exposure - local effects		0,05 mg/m ³	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	Workers	Inhalation	Acute/short term exposure - systemic effects		22,4 mg/m ³	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	Workers	Inhalation	Long term exposure - systemic effects		5,82 mg/m ³	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	Workers	dermal	Acute/short term exposure - systemic effects		8 mg/kg	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	Workers	dermal	Long term exposure - systemic effects		2,08 mg/kg	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	General population	dermal	Acute/short term exposure - systemic effects		4 mg/kg	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	General population	inhalation	Acute/short term exposure - systemic effects		11,2 mg/m ³	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	General population	dermal	Long term exposure - systemic effects		1,04 mg/kg	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	General population	inhalation	Long term exposure - systemic effects		1,46 mg/m ³	
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	General population	oral	Long term exposure - systemic effects		0,52 mg/kg	

Biological Exposure Indices:

Ingredient [Regulated substance]	Parameters	Biological specimen	Sampling time	Conc.	Basis of biol. exposure index	Remark	Additional Information
4,4'-Methylenediphenyl diisocyanate 101-68-8 [ISOCYANATES (APPLIESTO HDI, IPDI, TDI AND MDI)]	Isocyanate-derived diamine	Creatinine in urine	Sampling time: At the end of the period of exposure.		UKEH40BMG V		
4,4'-Methylenediphenyl diisocyanate, homopolymer 25686-28-6 [ISOCYANATES (APPLIESTO HDI, IPDI, TDI AND MDI)]	Isocyanate-derived diamine	Creatinine in urine	Sampling time: At the end of the period of exposure.		UKEH40BMG V		

8.2. Exposure controls:

Respiratory protection:

The product should only be used at workplaces with intensive ventilation/extraction. If intensive ventilation/extraction is not possible then self-contained independent respiratory protection should be worn.

Hand protection:

Use attached gloves. Perforation time < 5 minutes.

Eye protection:

Goggles which can be tightly sealed.
Protective eye equipment should conform to EN166.

Skin protection:

Suitable protective clothing
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions. Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	aerosol, pressurized can liquid white
Odor	ether-like
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Melting point	No data available / Not applicable
Solidification temperature	No data available / Not applicable
Initial boiling point	-42 °C (-43.6 °F)
Flash point	-104 °C (-155.2 °F)
Evaporation rate	No data available / Not applicable
Flammability	No data available / Not applicable
Explosive limits	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Relative vapour density:	No data available / Not applicable
Density (20 °C (68 °F))	1 g/cm ³
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Reacts slowly with water to liberate carbon dioxide gas.

Partition coefficient: n-octanol/water	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reaction with water, formation of CO₂
 Pressure build-up in closed containers.
 Reaction with water, alcohols, amines.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Temperatures over appr. 50 °C
 Humidity

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

At higher temperatures isocyanate may be released.
 Carbon dioxide is generated under contact with moisture, leading to pressure in the cans. Danger of cans bursting!

SECTION 11: Toxicological information**General toxicological information:**

Cross-reactions with other isocyanate compounds are possible.
 Persons suffering from allergic reactions to isocyanates should avoid contact with the product.

11.1. Information on toxicological effects**Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
4,4'-methylenediphenyl diisocyanate 101-68-8	LD50	> 2.000 mg/kg	rat	other guideline:
MDI homopolymer 25686-28-6	LD50	> 5.000 mg/kg	rat	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	LD50	632 mg/kg	rat	not specified

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
4,4'-methylenediphenyl diisocyanate 101-68-8	LD50	> 9.400 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
MDI homopolymer 25686-28-6	LD50	> 9.400 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)

Acute inhalative toxicity:

The toxicity of the product is due to its narcotic effect after inhalation.

In the event of protracted or repeated exposure, damage to health cannot be excluded.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
dimethyl ether 115-10-6	LC50	164000 ppm	gas	4 h	rat	not specified
Isobutane 75-28-5	LC50	260200 ppm	gas	4 h	mouse	not specified
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	LC50	> 7 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
Propane 74-98-6	LC50	> 800000 ppm	gas	15 min	rat	not specified

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
4,4'-methylenediphenyl diisocyanate 101-68-8	irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

No data available.

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
4,4'-methylenediphenyl diisocyanate 101-68-8	sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study/ Route of administration	Metabolic activation/ Exposure time	Species	Method
dimethyl ether 115-10-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
4,4'- methylenediphenyl diisocyanate 101-68-8	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
Isobutane 75-28-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Isobutane 75-28-5	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Propane 74-98-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Propane 74-98-6	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	negative	inhalation		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Isobutane 75-28-5	negative			Drosophila melanogaster	not specified
Isobutane 75-28-5	negative	inhalation: gas		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Propane 74-98-6	negative			Drosophila melanogaster	not specified
Propane 74-98-6	negative	inhalation: gas		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
4,4'- methylenediphenyl diisocyanate 101-68-8	carcinogenic	inhalation: aerosol	2 y 6 h/d	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity/ Carcinogenicity Studies)
MDI homopolymer 25686-28-6	carcinogenic	inhalation: aerosol	2 y 6 h/d	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity/ Carcinogenicity Studies)

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Isobutane 75-28-5	NOAEL P 21,4 mg/l NOAEL F1 21,4 mg/l	screening	inhalation: gas	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Propane 74-98-6	NOAEL P 21,6 mg/l NOAEL F1 21,6 mg/l	screening	inhalation: gas	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
dimethyl ether 115-10-6	NOAEL > 10000 ppm	inhalation	4 week 6 hours/day, 5 days/week	rat	not specified
4,4'-methylenediphenyl diisocyanate 101-68-8	NOAEL 0,0002 mg/l	inhalation: aerosol	main: 2 y; satellite: 1 y 6 h/d; 5 d/w	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
MDI homopolymer 25686-28-6		inhalation: aerosol	2 y (main); 1 y (satellite) 6 h/d; 5 d/w	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Isobutane 75-28-5		inhalation: gas	28 d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Propane 74-98-6		inhalation: gas	28 d 6 h/d, 7 d/w	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Aspiration hazard:

No data available.

SECTION 12: Ecological information

General ecological information:

Do not empty into drains, soil or bodies of water.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
dimethyl ether 115-10-6	LC50	> 4.000 mg/l	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'-methylenediphenyl diisocyanate 101-68-8	LC50	> 1.000 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
MDI homopolymer 25686-28-6	LC50	> 1.000 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	LC50	56,2 mg/l	96 h	Brachydanio rerio (new name: Danio rerio)	other guideline:

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
dimethyl ether 115-10-6	EC50	> 4.000 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
4,4'-methylenediphenyl diisocyanate 101-68-8	EC50	129,7 mg/l	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
MDI homopolymer 25686-28-6	EC50	129,7 mg/l	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	EC50	131 mg/l	48 h	Daphnia magna	not specified

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
4,4'-methylenediphenyl diisocyanate 101-68-8	NOEC	10 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
MDI homopolymer 25686-28-6	NOEC	10 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	NOEC	32 mg/l	21 d	Daphnia magna	OECD Guideline 202 (Daphnia sp. Chronic Immobilisation Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
dimethyl ether 115-10-6	EC50	> 1.000 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	EC50	> 1.640 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	NOELR	1.640 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
MDI homopolymer 25686-28-6	EC50	> 1.640 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
MDI homopolymer 25686-28-6	NOEC	1.640 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isobutane 75-28-5	EC50	7,71 mg/l	96 h		not specified
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	EC50	82 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	NOEC	13 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
dimethyl ether 115-10-6	EC10	> 1.600 mg/l	30 min	Pseudomonas putida	DIN 38412, part 27 (Bacterial oxygen consumption test)
4,4'- methylenediphenyl diisocyanate 101-68-8	EC50	> 100 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
MDI homopolymer 25686-28-6	EC50	> 100 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	EC 50	784 mg/l	3 h	activated sludge	ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
dimethyl ether 115-10-6	not readily biodegradable.	aerobic	5 %	28 d	EU Method C.4-A (Determination of the "Ready" Biodegradability Dissolved Organic Carbon (DOC) Die-Away Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
MDI homopolymer 25686-28-6	not readily biodegradable.	aerobic	> 0 - < 60 %	28 d	OECD 301 A - F
MDI homopolymer 25686-28-6	not inherently biodegradable	aerobic	0 %	28 d	OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II))
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	not readily biodegradable.	aerobic	14 %	28 day	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)

12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
4,4'-methylenediphenyl diisocyanate 101-68-8	92 - 200	28 d		Cyprinus carpio	OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test)
MDI homopolymer 25686-28-6	> 92 - 200	28 d		Cyprinus carpio	OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	0,8 - < 14	42 d		Cyprinus carpio	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
dimethyl ether 115-10-6	0,07	25 °C	QSAR (Quantitative Structure Activity Relationship)
4,4'-methylenediphenyl diisocyanate 101-68-8	4,51	22 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Isobutane 75-28-5	2,88	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	2,68	30 °C	EU Method A.8 (Partition Coefficient)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT/ vPvB
dimethyl ether 115-10-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
4,4'-methylenediphenyl diisocyanate 101-68-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
MDI homopolymer 25686-28-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Isobutane 75-28-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Phosphorous oxychloride, reaction products with propylene oxide 1244733-77-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Propane 74-98-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:

Use packages for recycling only when totally empty.

Waste code

160504 gases in pressure containers (including halons) containing dangerous substances

SECTION 14: Transport information

14.1. UN number

ADR	1950
RID	1950
ADN	1950
IMDG	1950
IATA	1950

14.2. UN proper shipping name

ADR	AEROSOLS
RID	AEROSOLS
ADN	AEROSOLS
IMDG	AEROSOLS
IATA	Aerosols, flammable

14.3. Transport hazard class(es)

ADR	2.1
RID	2.1
ADN	2.1
IMDG	2.1
IATA	2.1

14.4. Packing group

ADR
RID
ADN
IMDG
IATA

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable Tunnelcode: (D)
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

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

VOC content 17,9 %
(VOCV 814.018 VOC regulation
CH)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

- H220 Extremely flammable gas.
- 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.
- H373 May cause damage to organs through prolonged or repeated exposure.

Further information:

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