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

SDS No. : 528657
V002.0
Revision: 13.08.2018
printing date: 29.06.2021
Replaces version from:
26.07.2017

Sista PU Foam TR

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

1.1. Product identifier
Sista PU Foam TR

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 South Africa (PTY) Ltd.
Cnr Bosworth & Potgieter St
1449 Alberton

South Africa

Phone: +27 (116172400)

ua-productsafety_za@henkel.com

1.4. Emergency telephone number
0800 202 202

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Flammable aerosols	Category 1
H222 Extremely flammable aerosol.	
H229 Pressurised container: May burst if heated.	
Skin irritation	Category 2
H315 Causes skin irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
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.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation.	
Target organ: respiratory tract irritation	
Carcinogenicity	Category 2
H351 Suspected of causing cancer.	
Effects on or via lactation	
H362 May cause harm to breast-fed children.	
Specific target organ toxicity - repeated exposure	Category 2
H373 May cause damage to organs through prolonged or repeated exposure.	
Chronic hazards to the aquatic environment	Category 4
H413 May cause long lasting harmful effects to aquatic life.	

Classification (DPD):

F+ - Extremely flammable
R12 Extremely flammable.
Xn - Harmful
carcinogenic, category 3
R40 Limited evidence of a carcinogenic effect.
Xn - Harmful
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R20 Harmful by inhalation.
Xi - Irritant
R36/37/38 Irritating to eyes, respiratory system and skin.
Sensitizing
R42/43 May cause sensitization by inhalation and skin contact.
Dangerous for the environment
R53 May cause long-term adverse effects in the aquatic environment.
R64 May cause harm to breastfed babies.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:

Contains Diphenylmethane diisocyanate, isomers and homologues

Alkanes, C14-17, chloro

Signal word: Danger

Hazard statement:	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. 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 organs through prolonged or repeated exposure. H413 May cause long lasting harmful effects to aquatic life.
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 mist/vapours. P263 Avoid contact during pregnancy and while nursing. 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.

Label elements (DPD):

F+ - Extremely flammable Xn - Harmful

Risk phrases:

R12 Extremely flammable.
R40 Limited evidence of a carcinogenic effect.
R42/43 May cause sensitization by inhalation and skin contact.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R20 Harmful by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.
R64 May cause harm to breastfed babies.
R53 May cause long-term adverse effects in the aquatic environment.

Safety phrases:

S2 Keep out of the reach of children.
S23 Do not breathe vapour.
S24/25 Avoid contact with skin and eyes.
S29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S46 If swallowed, seek medical advice immediately and show this container or label.
S51 Use only in well-ventilated areas.

Additional labeling:

Contains isocyanates. See information supplied by the manufacturer.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of the reach of children

Contains:

Diphenylmethane diisocyanate, isomers and homologues

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:

4,4'-Methylenediphenyl diisocyanate (MDI)
Propellant gas base: dimethyl ether / isobutane / propane / n-butane mixture

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

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
4,4'- methylenediphenyl diisocyanate 101-68-8	202-966-0	10- 30 %	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
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9		10- 20 %	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. 1 H317
Alkanes, C14-17, chloro 85535-85-9	287-477-0	10- 20 %	Aquatic Acute 1 H400 Lact. H362 Aquatic Chronic 1 H410
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	227-534-9	5- < 15 %	STOT RE 2 H373 Carc. 2 H351 Acute Tox. 4; Inhalation H332 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Skin Sens. 1 H317 Resp. Sens. 1 H334
Dimethyl ether 115-10-6	204-065-8	5- < 10 %	Flam. Gas 1 H220 Press. Gas H280
Petroleum gases, liquefied 68476-85-7	270-704-2	5- < 10 %	Flam. Gas 1 H220 Press. Gas H280, H281
Isobutane 75-28-5	200-857-2	5- < 10 %	Flam. Gas 1 H220 Press. Gas
Polypropylene glycol 25322-69-4	500-039-8	1- < 5 %	Acute Tox. 4 H302

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.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
4,4'- methylenediphenyl diisocyanate 101-68-8	202-966-0	10 - 30 %	carcinogenic, category 3; R40 Xn - Harmful; R20, R48/20 Xi - Irritant; R36/37/38 R42/43
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9		10 - 20 %	carcinogenic, category 3; R40 Xn - Harmful; R20, R48/20 Xi - Irritant; R36/37/38 R42/43
Alkanes, C14-17, chloro 85535-85-9	287-477-0	10 - 20 %	R66 R64 N - Dangerous for the environment; R50/53
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	227-534-9	5 - < 15 %	carcinogenic, category 3; R40 Xn - Harmful; R20, R48/20 Xi - Irritant; R36/37/38 R42/43
Dimethyl ether 115-10-6	204-065-8	5 - < 10 %	F+ - Extremely flammable; R12
Petroleum gases, liquefied 68476-85-7	270-704-2	5 - < 10 %	F+ - Extremely flammable; R12
Isobutane 75-28-5	200-857-2	5 - < 10 %	F+ - Extremely flammable; R12
Polypropylene glycol 25322-69-4	500-039-8	1 - < 5 %	Xn - Harmful; R22

For full text of the R-Phrases indicated by codes 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

May cause an allergic skin reaction.

EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

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

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

See section: Description of first aid measures

SECTION 5: Firefighting 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 (NOx) 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.
Danger of slipping on spilled product.
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:
Do not eat, drink or smoke while working.
Wash hands before work breaks and after finishing work.
Remove any dirt that gets onto the skin with vegetable oil; skin care.

7.2. Conditions for safe storage, including any incompatibilities
For pressurized can: protect from direct sunshine and temperatures above 50°C.
< + 35 °C
> + 5 °C
Keep away from heat and direct sunlight.
Store in sealed original container.
Store in a cool, well-ventilated place.
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
South Africa

Ingredient [Regulated substance]	ppm	mg/m^3	Value type	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate 101-68-8 [ISOCYANATES, ALL (AS -NCO)]		0,07	Short Term Exposure Limit (STEL):		ZA CL(OEL)
4,4'-Methylenediphenyl diisocyanate 101-68-8 [ISOCYANATES, ALL (AS -NCO)]		0,02	Time Weighted Average (TWA):		ZA CL(OEL)
4,4'-Methylenediphenyl diisocyanate 101-68-8 [MDI 4,4'-METHYLENE-DIPHENYL DIISOCYANATE (MDI)]		0,02	Time Weighted Average (TWA):		ZA REL
4,4'-Methylenediphenyl diisocyanate 101-68-8 [MDI 4,4'-METHYLENE-DIPHENYL DIISOCYANATE (MDI)]		0,07	Short Term Exposure Limit (STEL):		ZA REL
4,4'-Methylenediphenyl diisocyanate 9016-87-9 [ISOCYANATES, ALL (AS -NCO)]		0,07	Short Term Exposure Limit (STEL):		ZA CL(OEL)
4,4'-Methylenediphenyl diisocyanate 9016-87-9 [ISOCYANATES, ALL (AS -NCO)]		0,02	Time Weighted Average (TWA):		ZA CL(OEL)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [ISOCYANATES, ALL (AS -NCO)]		0,07	Short Term Exposure Limit (STEL):		ZA CL(OEL)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [ISOCYANATES, ALL (AS -NCO)]		0,02	Time Weighted Average (TWA):		ZA CL(OEL)
Petroleum gases, liquefied 68476-85-7 [LIQUIFIED PETROLEUM GAS (LPG)]	1.250	2.250	Short Term Exposure Limit (STEL):		ZA REL
Petroleum gases, liquefied 68476-85-7 [LIQUIFIED PETROLEUM GAS (LPG)]	1.000	1.800	Time Weighted Average (TWA):		ZA REL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
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						
4,4'- methylenediphenyl diisocyanate 101-68-8	Predator						
4,4'- methylenediphenyl diisocyanate 101-68-8	Aquatic (intermit. releases)		10 mg/l				
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	aqua (freshwater)		1 mg/l				
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	aqua (marine water)		0,1 mg/l				
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Soil				1 mg/kg		
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	sewage treatment plant (STP)		1 mg/l				
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	aqua (intermittent releases)		10 mg/l				
Alkanes, C14-17, chloro 85535-85-9	aqua (freshwater)		1 µg/l				
Alkanes, C14-17, chloro 85535-85-9	aqua (marine water)		0,2 µg/l				
Alkanes, C14-17, chloro 85535-85-9	sewage treatment plant (STP)		80 mg/l				
Alkanes, C14-17, chloro 85535-85-9	sediment (freshwater)				5 mg/kg		
Alkanes, C14-17, chloro 85535-85-9	sediment (marine water)				1 mg/kg		
Alkanes, C14-17, chloro 85535-85-9	Soil				10 mg/kg		
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	aqua (marine water)		> 0,1 mg/l				
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	sewage treatment plant (STP)		> 1 mg/l				
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	aqua (intermittent releases)		10 mg/l				
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	aqua (freshwater)		> 1 mg/l				
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Soil				> 1 mg/kg		
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		1,549 mg/l				

	releases)						
Dimethyl ether 115-10-6	sediment (marine water)				0,069 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
4,4'- methylenediphenyl diisocyanate 101-68-8	Workers	inhalation	Long term exposure - local effects		0,05 mg/m3	
4,4'- methylenediphenyl diisocyanate 101-68-8	Workers	inhalation	Acute/short term exposure - local effects		0,1 mg/m3	
4,4'- methylenediphenyl diisocyanate 101-68-8	General population	inhalation	Long term exposure - local effects		0,025 mg/m3	
4,4'- methylenediphenyl diisocyanate 101-68-8	General population	inhalation	Acute/short term exposure - local effects		0,05 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Workers	dermal	Acute/short term exposure - systemic effects		50 mg/kg	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Workers	inhalation	Acute/short term exposure - systemic effects		0,1 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Workers	dermal	Acute/short term exposure - local effects		27,8 mg/kg	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Workers	inhalation	Acute/short term exposure - local effects		0,1 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Workers	inhalation	Long term exposure - systemic effects		0,05 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Workers	inhalation	Long term exposure - local effects		0,05 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	dermal	Acute/short term exposure - systemic effects		25 mg/kg	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	inhalation	Acute/short term exposure - systemic effects		0,05 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	dermal	Acute/short term exposure - local effects		17,2 mg/cm2	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	inhalation	Acute/short term exposure - local effects		0,05 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	inhalation	Long term exposure - systemic effects		0,025 mg/m3	
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	General population	inhalation	Long term exposure - local effects		0,025 mg/m3	
Alkanes, C14-17, chloro 85535-85-9	Workers	inhalation	Long term exposure - systemic effects		6,7 mg/m3	
Alkanes, C14-17, chloro 85535-85-9	Workers	dermal	Long term exposure - systemic effects		47,9 mg/kg	
Alkanes, C14-17, chloro 85535-85-9	General population	oral	Long term exposure - systemic effects		0,58 mg/kg	
Alkanes, C14-17, chloro 85535-85-9	General population	inhalation	Long term exposure - systemic effects		2,0 mg/m3	
Alkanes, C14-17, chloro 85535-85-9	General population	dermal	Long term exposure - systemic effects		28,75 mg/kg	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Workers	dermal	Acute/short term exposure - systemic effects		50 mg/kg	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Workers	inhalation	Acute/short term exposure -		0,1 mg/m3	

			systemic effects			
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Workers	dermal	Acute/short term exposure - local effects		28,7 mg/cm2	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Workers	inhalation	Acute/short term exposure - local effects		0,1 mg/m3	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Workers	inhalation	Long term exposure - systemic effects		0,05 mg/m3	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Workers	inhalation	Long term exposure - local effects		0,05 mg/m3	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	dermal	Acute/short term exposure - systemic effects		25 mg/kg	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	inhalation	Acute/short term exposure - systemic effects		0,05 mg/m3	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	oral	Acute/short term exposure - systemic effects		20 mg/kg	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	dermal	Acute/short term exposure - local effects		17,2 mg/cm2	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	inhalation	Acute/short term exposure - local effects		0,05 mg/m3	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	inhalation	Long term exposure - systemic effects		0,025 mg/m3	
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	General population	inhalation	Long term exposure - local effects		0,025 mg/m3	
Dimethyl ether 115-10-6	Workers	inhalation	Long term exposure - systemic effects		1894 mg/m3	
Dimethyl ether 115-10-6	General population	inhalation	Long term exposure - systemic effects		471 mg/m3	

Biological Exposure Indices:

None

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	pressurized can foam brownish
Odor	slightly
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	No data available / Not applicable
Flash point	-20 °C (-4 °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 (23 °C (73.4 °F))	1,2 g/cm3
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
Solid content	0 %

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

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

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:
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 10.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Alkanes, C14-17, chloro 85535-85-9	LD50	> 4.000 mg/kg	rat	not specified
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	LD50	> 2.000 mg/kg	rat	other guideline:
Polypropylene glycol 25322-69-4	LD50	1.000 - 2.000 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)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 9.400 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Alkanes, C14-17, chloro 85535-85-9	LD50		rat	not specified
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	LD50	> 9.400 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
Polypropylene glycol 25322-69-4	LD50	> 3.000 mg/kg	rabbit	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		4 h	rat	not specified
Isobutane 75-28-5	LC50	260200 ppm	gas	4 h	mouse	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)
Alkanes, C14-17, chloro 85535-85-9	slightly irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Polypropylene glycol 25322-69-4	not irritating	24 h	rabbit	EPA OPPTS 870.2500 (Acute Dermal Irritation)

Serious eye damage/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
Polypropylene glycol 25322-69-4	not irritating		rabbit	EU Method B.5 (Acute Toxicity: Eye Irritation / Corrosion)

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)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	sensitising	Respiratory sensitisation	guinea pig	not specified
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	not sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Polypropylene glycol 25322-69-4	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

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
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)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Dimethyl ether 115-10-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		not specified
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)
Polypropylene glycol 25322-69-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Polypropylene glycol 25322-69-4	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Polypropylene glycol 25322-69-4	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	negative	inhalation		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	negative	inhalation		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Isobutane 75-28-5	negative			Drosophila melanogaster	not specified

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)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	carcinogenic	inhalation: aerosol	2 y 6 h/d, 5 d/w	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
Polypropylene glycol 25322-69-4	NOAEL P >= 1.000 mg/kg NOAEL F1 >= 1.000 mg/kg	screening	oral: gavage	rat	OECD Guideline 421 (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
4,4'- methylenediphenyl diisocyanate 101-68-8		inhalation: aerosol	main: 2 y; satellite:1 y 6 h/d; 5 d/w	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	NOAEL 0,2 mg/m³	inhalation: aerosol	2 y 6 h per d, 5 d per week	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	NOAEL 0,2 mg/m³	inhalation: aerosol	2 y 6 h/d, 5 d/w	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Dimethyl ether 115-10-6	NOAEL > 10000 ppm	inhalation	4 week 6 hours/day, 5 days/week	rat	not specified
Isobutane 75-28-5		inhalation: gas	28 d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Polypropylene glycol 25322-69-4	NOAEL >= 1.000 mg/kg	oral: gavage	31 d daily	rat	OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

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
4,4'- methylenediphenyl diisocyanate 101-68-8	LC50	> 1.000 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LC50	> 1.000 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Alkanes, C14-17, chloro 85535-85-9	NOEC	> 1,6 mg/l	20 d	Oryzias latipes	OECD Guideline 210 (fish early lite stage toxicity test)
Alkanes, C14-17, chloro 85535-85-9	LC50	> 5.000 mg/l	96 h	Alburnus alburnus	OECD Guideline 203 (Fish, Acute Toxicity Test)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	LC50	> 1.000 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
Dimethyl ether 115-10-6	LC50	> 4.000 mg/l	96 h	Poecilia reticulata	OECD Guideline 203 (Fish, Acute Toxicity Test)
Polypropylene glycol 25322-69-4	LC50	> 100 mg/l	96 h	Pimephales promelas	not specified

Toxicity (Daphnia):

EC50 > 100 mg product/l.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
4,4'- methylenediphenyl diisocyanate 101-68-8	EC50	129,7 mg/l	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	EC50	> 1.000 mg/l	24 h	Daphnia sp.	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Alkanes, C14-17, chloro 85535-85-9	EC50	0,0059 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Dimethyl ether 115-10-6	EC50	> 4.000 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Polypropylene glycol 25322-69-4	EC50	> 100 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)
Alkanes, C14-17, chloro 85535-85-9	NOEC	0,01 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

EC50 > 100 mg product/l.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
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)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	EC50	> 1.640 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
Alkanes, C14-17, chloro 85535-85-9	ErC50	> 3,2 mg/l	72 h		OECD Guideline 201 (Alga, Growth Inhibition Test)
Alkanes, C14-17, chloro 85535-85-9	NOEC	0,1 mg/l	72 h		OECD Guideline 201 (Alga, Growth Inhibition Test)
Dimethyl ether 115-10-6	EC50	> 1.000 mg/l	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
Isobutane 75-28-5	EC50	7,71 mg/l	96 h		not specified

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
4,4'- methylenediphenyl diisocyanate 101-68-8	EC50	> 100 mg/l	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Alkanes, C14-17, chloro 85535-85-9	EC 50	> 2.000 mg/l	3 h		OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Dimethyl ether 115-10-6	EC10	> 1.600 mg/l	30 min	Pseudomonas putida	DIN 38412, part 27 (Bacterial oxygen consumption test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
4,4'- methylenediphenyl diisocyanate 101-68-8	not readily biodegradable.	aerobic	0 %	28 d	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Alkanes, C14-17, chloro 85535-85-9		aerobic	90 %	10 d	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
Dimethyl ether 115-10-6	not readily biodegradable.	aerobic	5 %	28 d	EU Method C.4-A (Determination of the "Ready" BiodegradabilityDissolved Organic Carbon (DOC) Die-Away 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)
Alkanes, C14-17, chloro 85535-85-9	1,09 - 349	35 d		Oncorhynchus mykiss	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
4,4'- methylenediphenyl diisocyanate 101-68-8	4,51	22 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	5,22		not specified
Dimethyl ether 115-10-6	0,07	25 °C	QSAR (Quantitative Structure Activity Relationship)
Isobutane 75-28-5	2,88	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT / vPvB
4,4'- methylenediphenyl diisocyanate 101-68-8	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Alkanes, C14-17, chloro 85535-85-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Dimethyl ether 115-10-6	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.

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 12,8 %

(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:

R12 Extremely flammable.
R20 Harmful by inhalation.
R22 Harmful if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R40 Limited evidence of a carcinogenic effect.
R42/43 May cause sensitization by inhalation and skin contact.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R64 May cause harm to breastfed babies.
R66 Repeated exposure may cause skin dryness or cracking.
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H281 Contains refrigerated gas; may cause cryogenic burns or injury.
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 organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Further information:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

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