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SDS No.: 528637 V003.0

Revision: 09.06.2023

printing date: 04.11.2023

Replaces version from: 02.03.2023

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

#### 1.1. Product identifier

PATTEX PU FOAM FIX&FILL

PATTEX PU FOAM FIX&FILL

# 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 Jebal Ali FZCO PO Box 61341 - Jebel Ali Dubai

Utd.Arab.Emir.

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website https://mysds.henkel.com/index.html#/appSelection or www.henkel-adhesives.com.

#### 1.4. Emergency telephone number

 $HAAD\ Poison\ and\ Drug\ Information\ Center\ UAE,\ TOLL\ FREE\ TEL.\ NUMBER\ 800-424$ 

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### **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.

Acute toxicity Category 4

H332 Harmful if inhaled. Effects on or via lactation

H362 May cause harm to breast-fed children.

Chronic hazards to the aquatic environment Category 4

H413 May cause long lasting harmful effects to aquatic life.

### 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 Pressurized container: May burst if heated.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation. H351 Suspected of causing cancer.

H362 May cause harm to breast-fed children.

H373 May cause damage to organs through prolonged or repeated exposure.

H413 May cause long lasting harmful effects to aquatic life.

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**Precautionary statement:** P102 Keep out of reach of children.

**Precautionary statement:** P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

**Prevention** 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.DEGREE.C/122.DEGREE.F.

**Precautionary statement:** 

**Disposal** 

P501 Dispose of contents/container in accordance with national regulation.

#### 2.3. Other hazards

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.

Information according to XVII. 56 REACH

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.

Following substances are present in a concentration  $\geq$  the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

alkanes, C14-17, chloro	PBT/vPvB
85535-85-9	

# **SECTION 3: Composition/information on ingredients**

#### 3.2. Mixtures

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

Hazardous components CAS-No.	EC Number	content	Classification
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9		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. 1 H317
4,4'- methylenediphenyl diisocyanate 101-68-8	202-966-0	10- 20 %	Carc. 2
alkanes, C14-17, chloro 85535-85-9	287-477-0	10- 20 %	Aquatic Acute 1 H400 Lact. H362 Aquatic Chronic 1 H410 ===== EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC) EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC)
dimethyl ether 115-10-6	204-065-8	5-< 10 %	Flam. Gas 1 A H220 Press. Gas Liquef. Gas H280
Petroleum gases, liquefied 68476-85-7	270-704-2	5-< 10 %	Flam. Gas 1A H220 Press. Gas H280, H281
Isobutane 75-28-5	200-857-2	5- < 10 %	Flam. Gas 1 A H220 Press. Gas Liquef. Gas H280
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	227-534-9	1-< 5%	STOT RE 2 H373 Carc. 2 H351 Acute Tox. 4; Inhalation H332 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315

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	Skin Sens. 1 H317
	Resp. Sens. 1 H334

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.

#### Eve 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.

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

SKIN: Redness, inflammation.

Causes serious eye irritation.

#### 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.

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#### **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.

Avoid contact with skin and eyes.

Ensure adequate ventilation.

Danger of slipping on spilled product.

### **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

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.

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.

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

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

Storage at 5 to 25°C is recommended.

Keep container tightly sealed.

Store in a cool, well-ventilated place.

Do not store together with oxidants.

Do not store together with flammable solutions.

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

#### 7.3. Specific end use(s)

Foam, 1-component with propellant gas

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# SECTION 8: Exposure controls/personal protection

# 8.1. Control parameters

# **Occupational Exposure Limits**

Valid for

Utd.Arab.Emir.

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate 101-68-8 [DIPHENYL METHANE DI ISOCYANATE [METHYLENE BISPHENYL ISOCYANATE (MDI)]]	0,005	0,051	Time Weighted Average (TWA):		AD TLV
4,4'-Methylenediphenyl diisocyanate 101-68-8 [DIPHENYL METHANE DI ISOCYANATE]	0,005	0,051	Time Weighted Average (TWA):		GCC TLV
4,4'-Methylenediphenyl diisocyanate 101-68-8 [DIPHENYLMETHANE DIISOCYANATE]	0,005	0,051	Time Weighted Average (TWA):		UAE OEL
Petroleum gases, liquefied 68476-85-7 [L.P.G (LIQUEFIED PETROLEUM GAS)]	1.000	1.800	Time Weighted Average (TWA):		AD TLV
Petroleum gases, liquefied 68476-85-7 [LPG ( LIQUIDIFIED PETROLEUM GAS )]	1.000		Time Weighted Average (TWA):		DB OEL
Petroleum gases, liquefied 68476-85-7 [L.P.G]	1.000	1.800	Time Weighted Average (TWA):		GCC TLV
Petroleum gases, liquefied 68476-85-7 [L.P.G.]	1.000	1.800	Time Weighted Average (TWA):		UAE OEL
Isobutane 75-28-5 [ALIPHATIC HYDROCARBON GASES ALKANE [C1-C4]]	800		Time Weighted Average (TWA):		AD TLV

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# **Occupational Exposure Limits**

Valid for Bharain

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate 101-68-8 [DIPHENYL METHANE DIISOCYANATE]	0,005	0,051	Time Weighted Average (TWA):		BH TLV
4,4'-Methylenediphenyl diisocyanate 101-68-8 [DIPHENYL METHANE DI ISOCYANATE]	0,005	0,051	Time Weighted Average (TWA):		GCC TLV
Petroleum gases, liquefied 68476-85-7 [L.P.G]	1.000	1.800	Time Weighted Average (TWA):		BH TLV
Petroleum gases, liquefied 68476-85-7 [L.P.G]	1.000	1.800	Time Weighted Average (TWA):		GCC TLV

# **Occupational Exposure Limits**

Valid for Egypt

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate 101-68-8 [METHYLENE BISPHENYL DIISOCYANATE (MDI)]	0,005	0,051	Time Weighted Average (TWA):		EG OEL
Petroleum gases, liquefied 68476-85-7 [Liquified petroleum gas]	1.000	1.800	Time Weighted Average (TWA):		EG OEL

# **Occupational Exposure Limits**

Valid for

Jordan

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	V 1	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate	0,02	0,2	Time Weighted Average		JO TLV
101-68-8			(TWA):		
[DIPHENYLMETHANE					
DIISOCYANATE]					

# **Occupational Exposure Limits**

Valid for

Kuwait

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit category / Remarks	Regulatory list
Petroleum gases, liquefied 68476-85-7 [L.P.G]	1.000	1.800	Time Weighted Average (TWA):		GCC TLV
Petroleum gases, liquefied 68476-85-7 [LIQUID PETROLUEM GAS (LPG)]	2.000		Harmful Concentration for risk to health and life:		KW OEL
Petroleum gases, liquefied 68476-85-7	1.000	1.800	Time Weighted Average (TWA):		KW OEL

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[LIQUID PETROLUEM GAS (LPG)]			

# **Occupational Exposure Limits**

Valid for Israel

Ingredient [Regulated substance]	ppm	mg/m <sup>3</sup>	Value type	Short term exposure limit	Regulatory list
				category / Remarks	
Diphenylmethane diisocyanate, isomers and homologs 9016-87-9 [ISOCYANATES]	0,005		Time Weighted Average (TWA):		IL OEL
Diphenylmethane diisocyanate, isomers and homologs 9016-87-9 [ISOCYANATES]	0,0025		Action level (AL):		IL OEL
Diphenylmethane diisocyanate, isomers and homologs 9016-87-9 [ISOCYANATES]	0,02		Short-term exposure limit (STEL):		IL OEL
4,4'-Methylenediphenyl diisocyanate 101-68-8 [METHYLENE BISPHENYL ISOCYANATE (MDI)]	0,005		Time Weighted Average (TWA):		IL OEL
Isobutane 75-28-5 [Butane, all isomers]	1.000		Short-term exposure limit (STEL):		IL OEL
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [ISOCYANATES]	0,0025		Action level (AL):		IL OEL
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [ISOCYANATES]	0,005		Time Weighted Average (TWA):		IL OEL
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1 [ISOCYANATES]	0,02		Short-term exposure limit (STEL):		IL OEL
2,2'-Methylenediphenyl diisocyanate 2536-05-2 [ISOCYANATES]	0,005		Time Weighted Average (TWA):		IL OEL
2,2'-Methylenediphenyl diisocyanate 2536-05-2 [ISOCYANATES]	0,02		Short-term exposure limit (STEL):		IL OEL
2,2'-Methylenediphenyl diisocyanate 2536-05-2 [ISOCYANATES]	0,0025		Action level (AL):		IL OEL

# **Occupational Exposure Limits**

Valid for Kenya

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Diphenylmethane diisocyanate, isomers and homologs 9016-87-9 [ISOCYANATES, ALL (AS-NCO)]		0,07	Short term OEL-CL:		KE OEL-CL
Diphenylmethane diisocyanate, isomers and homologs 9016-87-9 [ISOCYANATES, ALL (AS-NCO)]		0,02	Time-weighted average (TWA) OEL-CL:		KE OEL-CL
4,4'-Methylenediphenyl diisocyanate 101-68-8 [ISOCYANATES, ALL (AS-NCO)]		0,02	Time-weighted average (TWA) OEL-CL:		KE OEL-CL
4,4'-Methylenediphenyl diisocyanate 101-68-8		0,07	Short term OEL-CL:		KE OEL-CL

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[ISOCYANATES, ALL (AS-NCO)]				
4,4'-Methylenediphenyl diisocyanate		0,02	Time-weighted average	KE OEL-RL
101-68-8			(TWA) OEL-RL:	
[4,4'-METHYLENE-DIPHENYL				
DIISOCYANATE (MDI)]				
4,4'-Methylenediphenyl diisocyanate		0,07	Short-term OEL-RL:	KE OEL-RL
101-68-8				
[4,4'-METHYLENE-DIPHENYL				
DIISOCYANATE (MDI)]				
Petroleum gases, liquefied	1.250	2.250	Short-term OEL-RL:	KE OEL-RL
68476-85-7				
[LIQUIFIED PETROLEUM GAS (LPG)]				
Petroleum gases, liquefied	1.000	1.800	Time-weighted average	KE OEL-RL
68476-85-7			(TWA) OEL-RL:	
[LIQUIFIED PETROLEUM GAS (LPG)]				
o-(p-Isocyanatobenzyl)phenyl isocyanate		0,02	Time-weighted average	KE OEL-CL
5873-54-1			(TWA) OEL-CL:	
[ISOCYANATES, ALL (AS-NCO)]				
o-(p-Isocyanatobenzyl)phenyl isocyanate		0,07	Short term OEL-CL:	KE OEL-CL
5873-54-1				
[ISOCYANATES, ALL (AS-NCO)]				
2,2'-Methylenediphenyl diisocyanate		0,07	Short term OEL-CL:	KE OEL-CL
2536-05-2				
[ISOCYANATES, ALL (AS-NCO)]				
2,2'-Methylenediphenyl diisocyanate		0,02	Time-weighted average	KE OEL-CL
2536-05-2			(TWA) OEL-CL:	
[ISOCYANATES, ALL (AS-NCO)]				

#### **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:

Recommended are gloves made from Nitril rubber (Material thickness >0,1 mm, Perforation time < 30s). Gloves should be replaced after each short time contact or contamination. Available at laboratory specialized trade or at pharmacies / chemist's shops.

In the case of longer contact protective gloves made from nitrile rubber are recommended according to EN 374. material thickness > 0.4 mm

Perforation time > 10 minutes

In the case of longer and repeated contact please note that in practice the penetration times may be considerably shorter than those determined according to EN 374. The protective gloves must always be checked for their suitability for use at the specific workplace (e.g. mechanical and thermal stress, product compatibility, antistatic effects, etc.). The gloves must be replaced immediately at the first signs of wear and tear. The information provided by the manufacturers and given in the relevant trade association regulations for industrial safety must always be observed. We recommend that a hand care plan is drawn up in cooperation with a glove manufacturer and the trade association in accordance with the local operating conditions.

# 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.

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# **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

Appearance pressurized can

liquid brownish

Odor ether-like

Odour threshold No data available / Not applicable

pH Not applicable, Product is non-soluble (in water).

Initial boiling point  $-42 \, ^{\circ}\text{C} \, (-43.6 \, ^{\circ}\text{F})$ Flash point Not applicable

Decomposition temperature No data available / Not applicable

Vapour pressure 0,5 MPaReferring to liquefied propellant at 20 °C

(20 °C (68 °F))

Density 1 g/cm3

(20 °C (68 °F))

Bulk density

No data available / Not applicable

Viscosity

No data available / Not applicable

Viscosity (kinematic) > 20,5 mm2/s

(40 °C (104 °F); ) Explosive properties No data available / Not applicable

Solubility (qualitative) Not soluble, reacts with water to cure and release CO2.

(20 °C (68 °F); Solvent: Water)

Solidification temperature No data available / Not applicable Melting point Not applicable, Product is a liquid Flammability No data available / Not applicable

Auto-ignition temperature 350 °C (662 °F)

Explosive limits

lower 1,5%(V)

Partition coefficient: n-octanol/water No data available / Not applicable Evaporation rate No data available / Not applicable

Vapor density 1,7

(20 °C)

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  $^{\circ}\text{C}$ 

Humidity

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#### 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**

#### 11.1. Information on toxicological effects

### General toxicological information:

Cross-reactions with other isocyanate compounds are possible.

#### 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.

### Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 2.000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
4,4'- methylenediphenyl diisocyanate 101-68-8	LD50	> 2.000 mg/kg	oral		rat	other guideline:
alkanes, C14-17, chloro 85535-85-9	LD50	> 4.000 mg/kg	oral		rat	not specified
o-(p- Isocyanatobenzyl)phenyl isocyanate 5873-54-1	LD50	> 2.000 mg/kg	oral		rat	other guideline:

#### Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
dimethyl ether 115-10-6	LC50	164000 ppm	gas	4 h	rat	not specified
Petroleum gases, liquefied 68476-85-7	LC50	539600 ppm	gas	2 h	mouse	not specified
Isobutane 75-28-5	LC50	260200 ppm	gas	4 h	mouse	not specified

### Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 9.400 mg/kg	dermal		rat	OECD Guideline 402 (Acute Dermal Toxicity)
4,4'- methylenediphenyl diisocyanate 101-68-8	LD50	> 9.400 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
alkanes, C14-17, chloro 85535-85-9	LD50	> 2.800 mg/kg	dermal		rat	not specified
o-(p- Isocyanatobenzyl)phenyl isocyanate 5873-54-1	LD50	> 9.400 mg/kg	dermal		rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

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# Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
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)

# Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and	irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
homologues 9016-87-9				

# Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	sensitising	Skin sensitisati on	guinea pig	OECD Guideline 406 (Skin Sensitisation)
4,4'- methylenediphenyl diisocyanate 101-68-8	sensitising	Buehler test	guinea pig	OECD Guideline 406 (Skin Sensitisation)
4,4'- methylenediphenyl diisocyanate 101-68-8	sensitising	Respirator y sensitisati on	guinea pig	not specified
o-(p- Isocyanatobenzyl)phenyl isocyanate 5873-54-1	sensitising	Respirator y sensitisati on	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 lymphnod e assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

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# Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		EU Method B.13/14 (Mutagenicity)
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)
4,4'- methylenediphenyl diisocyanate 101-68-8	negative	inhalation		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
dimethyl ether 115-10-6	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
dimethyl ether 115-10-6	negative	inhalation: gas		Drosophila melanogaster	equivalent or similar to OECD Guideline 477 (Genetic Toxicology: Sex-linked Recessive Lethal Test in Dros. melanog.)
Petroleum gases, liquefied 68476-85-7	negative	inhalation: gas		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Isobutane 75-28-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Isobutane 75-28-5	negative	oral: feed		Drosophila melanogaster	not specified
	negative	inhalation: gas		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
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)
o-(p- Isocyanatobenzyl)phenyl isocyanate 5873-54-1	negative	inhalation		rat	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

# Carcinogenicity:

Hazardous components CAS-No.	Result	Species	Sex	Exposure timeFrequenc y of treatment	Route of application	Method
4,4'- methylenediphenyl diisocyanate 101-68-8	carcinogenic	rat	male/female	2 y 6 h/d	inhalation: aerosol	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
dimethyl ether 115-10-6	not carcinogenic	rat	male/female	2 y 6 h/d, 5 d/w	inhalation	equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
o-(p- Isocyanatobenzyl)phenyl isocyanate 5873-54-1	carcinogenic	rat	male/female	2 y 6 h/d, 5 d/w	inhalation: aerosol	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

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# Reproductive toxicity:

Hazardous substances CAS-No.	Result / Classification	Species	Exposure time	Species	Method
dimethyl ether 115-10-6	NOAEL P = 2.5 %	other inhalation: gas	2 y	rat	other guideline:
	NOAEL P = 1.6 %	screening inhalation: gas	M: 30 d / F: 51 d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Petroleum gases, liquefied 68476-85-7	NOAEL P = 10000 ppm	Fertility inhalation: gas	13 w	rat	not specified
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)

# Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	NOAEL=0,0002 mg/l	inhalation: aerosol	2 y6 h per d, 5 d per week	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
4,4'- methylenediphenyl diisocyanate 101-68-8	NOAEL=0,0002 mg/l	inhalation: aerosol	main: 2 y; satellite:1 y6 h/d; 5 d/w	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
dimethyl ether 115-10-6	NOAEL=47,106 mg/12.5 %	inhalation: gas	2 y6 h/d; 5 d/w	rat	equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies)
Petroleum gases, liquefied 68476-85-7	NOAEL=10000 ppm	inhalation: gas	14 w6 h/d, 5 d/w	rat	equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Isobutane 75-28-5	NOAEL=9000 ppm	inhalation: gas	28 d6 h/d, 7 d/w	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
o-(p- Isocyanatobenzyl)phenyl isocyanate 5873-54-1	NOAEL=0,2 mg/m³	inhalation: aerosol	2 y6 h/d, 5 d/w	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

# **SECTION 12: Ecological information**

# General ecological information:

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

# **Ecotoxicity**

Acute invertebrate toxicity: EC50 > 100 mg product/l.

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# Aquatic plant/algae toxicity:

EC50 > 100 mg product/l. Alga, Growth Inhibition test OECD 201.

# 12.1. Toxicity

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LC50	> 1.000 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	EC50	> 1.000 mg/l	Daphnia	24 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	EC50	> 1.640 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
Diphenylmethane diisocyanate, isomers and homologues	EC50	> 100 mg/l	Bacteria	3 h	activated sludge	OECD Guideline 209 (Activated Sludge, Respiration
9016-87-9 Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	NOEC	10 mg/l	chronic Daphnia	21 d	Daphnia magna	Inhibition Test) OECD 211 (Daphnia magna, Reproduction Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	LL50	> 100 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	EC50	> 100 mg/l	Daphnia	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
4,4'- methylenediphenyl diisocyanate 101-68-8	EL50	> 100 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
	NOELR	100 mg/l	Algae	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	EC50	> 1.000 mg/l	Bacteria	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
4,4'- methylenediphenyl diisocyanate 101-68-8	NOEC	10 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
alkanes, C14-17, chloro 85535-85-9	NOEC	3,4 mg/l	Fish	20 d	Oryzias latipes	OECD Guideline 212 (Fish, Short- term Toxicity Test on Embryo and Sac-Fry Stages)
	LC50	> 5.000 mg/l	Fish	96 h	Alburnus alburnus	OECD Guideline 203 (Fish, Acute Toxicity Test)
alkanes, C14-17, chloro 85535-85-9	EC50	0,0059 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
alkanes, C14-17, chloro 85535-85-9	EC50	> 3,2 mg/l	Algae	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
	NOEC	0,1 mg/l	Algae	72 h	not specified	OECD Guideline 201 (Alga, Growth Inhibition Test)
alkanes, C14-17, chloro 85535-85-9	EC50	> 2.000 mg/l	Bacteria	3 h	not specified	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

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				-		
alkanes, C14-17, chloro	NOEC	0,01 mg/l	chronic	21 d	Daphnia magna	OECD 211
85535-85-9			Daphnia			(Daphnia magna,
	] ]					Reproduction Test)
dimethyl ether	LC50	> 4.000 mg/l	Fish	96 h	Poecilia reticulata	OECD Guideline
115-10-6						203 (Fish, Acute
	Į Į		ļ			Toxicity Test)
dimethyl ether	EC50	> 4.000 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline
115-10-6						202 (Daphnia sp.
						Acute
						Immobilisation
						Test)
dimethyl ether	EC50	> 1.000 mg/l	Algae	72 h	not specified	OECD Guideline
115-10-6						201 (Alga, Growth
		00				Inhibition Test)
dimethyl ether	EC10	> 1.600 mg/l	Bacteria	30 min	Pseudomonas putida	DIN 38412, part 27
115-10-6						(Bacterial oxygen
		m		0.51	<b>.</b>	consumption test)
o-(p-Isocyanatobenzyl)phenyl	LC50	Toxicity > Water	Fish	96 h	Danio rerio	OECD Guideline
isocyanate		Solubility				203 (Fish, Acute
5873-54-1	EC50	TD 114 . XXI.4	D 1 :	24 h	D 1 '	Toxicity Test) OECD Guideline
o-(p-Isocyanatobenzyl)phenyl	ECSU	Toxicity > Water	Daphnia	24 n	Daphnia magna	
isocyanate 5873-54-1		Solubility				202 (Daphnia sp. Acute
38/3-34-1						Immobilisation
						Test)
o-(p-Isocyanatobenzyl)phenyl	EC50	Toxicity > Water	Algae	72 h	Desmodesmus subspicatus	OECD Guideline
isocyanate	ECSO	Solubility	Aigae	7211	(reported as Scenedesmus	201 (Alga, Growth
5873-54-1		Solubility			subspicatus)	Inhibition Test)
3673-34-1	NOELR	Toxicity > Water	Algae	72 h	Desmodesmus subspicatus	OECD Guideline
	NOLLK	Solubility	Aigac	/211	(reported as Scenedesmus	201 (Alga, Growth
		Boldonity			subspicatus)	Inhibition Test)
o-(p-Isocyanatobenzyl)phenyl	NOEC	Toxicity > Water	chronic	21 day	Daphnia magna	OECD 211
isocyanate	1.020	solubility	Daphnia	21 day	2 upu mugnu	(Daphnia magna,
5873-54-1		solubility	Zupiiiiu			Reproduction Test)
			<u> </u>	l		Transfer Test)

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# 12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	not inherently biodegradable	aerobic	0 %	OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II))
	not readily biodegradable.	not specified	0 %	OECD 301 A - F
4,4'- methylenediphenyl diisocyanate 101-68-8	not readily biodegradable.	aerobic	0 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
alkanes, C14-17, chloro 85535-85-9	not readily biodegradable.	aerobic	> 13 - 66 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
dimethyl ether 115-10-6	readily biodegradable	aerobic	> 60 %	OECD 301 A - F
Isobutane 75-28-5	readily biodegradable	aerobic	71,43 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	not inherently biodegradable	aerobic	0 %	OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II))

# 12.3. Bioaccumulative potential / 12.4. Mobility in soil

Ī	Hazardous components	LogPow	Bioconcentration	Exposure	Species	Temperature	Method
	CAS-No.		factor (BCF)	time			

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Diphenylmethane diisocyanate, isomers and homologues 9016-87-9		200		Cyprinus carpio		OECD Guideline 305 (Bioconcentration: Flow- through Fish Test)
4,4'- methylenediphenyl diisocyanate 101-68-8 4,4'- methylenediphenyl diisocyanate 101-68-8	4,51	92 - 200	28 d	Cyprinus carpio	22 °C	OECD Guideline 305 E (Bioaccumulation: Flow-through Fish Test) OECD Guideline 117 (Partition Coefficient (noctanol / water), HPLC Method)
alkanes, C14-17, chloro 85535-85-9		349	35 d	Oncorhynchus mykiss		OECD Guideline 305 (Bioconcentration: Flow- through Fish Test)
alkanes, C14-17, chloro 85535-85-9	7					other (measured)
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 (noctanol / water), Shake Flask Method)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1		200	28 day	Cyprinus carpio		OECD Guideline 305 E (Bioaccumulation: Flow- through Fish Test)
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	5,22					QSAR (Quantitative Structure Activity Relationship)

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#### 12.5. Results of PBT and vPvB assessment

Hazardous components 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.
alkanes, C14-17, chloro 85535-85-9	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.
o-(p-Isocyanatobenzyl)phenyl isocyanate 5873-54-1	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

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# **SECTION 14: Transport information**

## 14.1. UN number or ID 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.

## 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

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## **SECTION 15: Regulatory information**

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

No information available:

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009): Not applicable Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): Not applicable Persistent organic pollutants (Regulation (EU) 2019/1021): Not applicable

#### 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.

H281 Contains refrigerated gas; may cause cryogenic burns or injury.

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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