Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

RESYFLEX 151 ISO

Date of first edition: 4/30/2021

Safety Data Sheet dated 10/15/2021

version 6

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

1.1. Product identifier

Mixture identification:

Trade name: RESYFLEX 151 ISO

Trade code: FBIFC464-6

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

Recommended use: Adhesives, sealants

Uses advised against: Data not available.

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL France

25, avenue de l'Industrie - 69960 Corbas - France

Tel. +33 472 890 684

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Kerakoll Italy - +39-0536-816511

Ireland

Poison information centre: 01 809 2166 (Daily 8am-10pm)

In case of emergency call 999 or 112

Malta

In case of emergency call: +356 2395 2000 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Resp. Sens. 1 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Pictograms and Signal Words

Danger

Hazard statements

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

Precautionary statements

P102 Keep out of reach of children.

P260 Do not breathe vapours.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a doctor.

P501 Dispose of contents/container in accordance with applicable regulations.

Contains

4,4'-methylenediphenyl diisocyanate

Bis(2-(2-(1-methylethyl)-3-oxazolidinyl)ethyl) hexan-1,2-diylbiscarbamate

Hydroxyphenyl benzotriazole derivatives

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate

Special provisions according to Annex XVII of REACH and subsequent amendments:

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used

As from 24 August 2023 adequate training is required before industrial or professional use.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: RESYFLEX 151 ISO

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
2,5-4,9 %	Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	CAS:64742-48-9 EC:919-857-5	Asp. Tox. 1, H304; Flam. Liq. 3, H226; STOT SE 3, H336, EUH066	01-2119463258-33
< 1 %	4,4'-methylenediphenyl diisocyanate	CAS:101-68-8 EC:202-966-0 Index:615-005-00-9	Carc. 2, H351 STOT RE 2, H373 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Acute Tox. 4, H332 Specific Concentration Limits: C ≥ 5%: Eye Irrit. 2 H319 C ≥ 5%: Skin Irrit. 2 H315 C ≥ 0.1%: Resp. Sens. 1 H334 C ≥ 5%: STOT SE 3 H335	01-2119457014-47
< 1 %	Bis(2-(2-(1-methylethyl)-3-oxazolidinyl)ethyl) hexan-1,2-diylbiscarbamate	CAS:59719-67-4 EC:261-879-6	Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 2, H411	01-2119983487-19
< 0,5 %	Hydroxyphenyl benzotriazole derivatives	EC:400-830-7 Index:607-176-00-3	Aquatic Chronic 2, H411; Skin Sens. 1, H317	01-0000015075-76
< 0,5 %	xylene	CAS:95-47-6 EC:202-422-2 Index:601-022-00-9	Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315	
< 0,3 %	1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	CAS:1065336-91-5 EC:915-687-0	Skin Sens. 1, H317; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1	

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediatley and dispose off safely.

In case of eyes contact:

Wash immediately with water.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and label hazardous.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

N.A.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhaltion of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

Component	OEL Type	Country	Ceiling	Long Term mg/m3	Long Term ppm	Short Term mg/m3	Short Term ppm	Notes
Limestone	NATIONAL	BELGIUM		10.000				
	NATIONAL	HUNGARY		10.000				Inhalable aerosol
	NATIONAL	CHINA		8.000				Inhalable fraction
	NATIONAL	CHINA		4.000				Inhalable aerosol
	NATIONAL	KOREA, REPUBLIC OF		10.000				
	NATIONAL	JAPAN		2.000				Respirable dust
	NATIONAL	JAPAN		8.000				Total dust: Total dust comprises particles with a flow speed of 50 to 80 cm/sec at the entry of a particle sampler
	NATIONAL	SPAIN		10.000				Inhalable aerosol
	NATIONAL	SWITZERLAND		3.000				Respirable aerosol
	NATIONAL	UNITED STATES OF AMERICA		15.000				OSHA: Total dust
	NATIONAL	UNITED STATES OF AMERICA		5.000				OSHA: Respirable dust
	NATIONAL	UNITED STATES OF AMERICA		10.000				NIOSH: total dust, calcium carbonate
	NATIONAL	UNITED STATES OF AMERICA		5.000				NIOSH: Respirable aerosol, calcium carbonate
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND		10.000				Inhalable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND		4.000				Respirable aerosol
	NATIONAL	ITALY		10.000				Come particelle non altrimenti specificate PNOC
	NATIONAL	CROATIA		10.000				
	NATIONAL	FRANCE		10.000				
	NATIONAL	NETHERLANDS		10.000				
	NATIONAL	PORTUGAL		10.000				
di isononylphthalate	NATIONAL	DENMARK		3.000		6.000		
	NATIONAL	IRELAND		5.000				
	NATIONAL	NEW ZEALAND		5.000				
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN		5.000				

		AND NORTHERN IRELAND						
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	NATIONAL	GERMANY		300.000	50.000	600.000	100.000	DFG
	NATIONAL	POLAND		300.000		900.000		
	NATIONAL	SWITZERLAND		300.000	50.000	600.000	100.000	
4,4'-methylenediphenyl diisocyanate	NATIONAL	AUSTRALIA			1.000			
	NATIONAL	AUSTRIA		0.050	0.005	0.100	0.010	
	NATIONAL	BELGIUM		0.052	0.005			
	NATIONAL	CANADA			0.005			Ontario
	NATIONAL	CANADA	C				0.020	Ontario
	NATIONAL	CANADA		0.051	0.005			Quebec
	NATIONAL	DENMARK		0.050	0.005	0.100	0.010	
	NATIONAL	FRANCE		0.100	0.010	0.200	0.020	
	NATIONAL	GERMANY		0.050		0.050		AGS; long term and short term: inhalable aerosol and vapour
	NATIONAL	GERMANY	C			0.100		AGS; inhalable aerosol and vapour
	NATIONAL	GERMANY		0.050		0.050		DFG; long term and short term: inhalable fraction and vapour
	NATIONAL	GERMANY	C			0.100		DFG; inhalable fraction and vapour
	NATIONAL	HUNGARY		0.050		0.050		
	NATIONAL	IRELAND		0.020		0.070		long term and short term: as NCO
	NATIONAL	ISRAEL		0.051	0.005	0.210	0.020	
	NATIONAL	JAPAN		0.050				JSOH
	NATIONAL	CHINA		0.050		0.100		
	NATIONAL	POLAND		0.050				
	NATIONAL	POLAND	C			0.200		
	NATIONAL	ROMANIA				0.120		
	NATIONAL	SINGAPORE		0.051	0.005			
	NATIONAL	KOREA, REPUBLIC OF		0.055	0.005			
	NATIONAL	SPAIN		0.052	0.005			
	NATIONAL	SWEDEN		0.030	0.002	0.050	0.005	Short term: 5 minutes average value
	NATIONAL	UNITED STATES OF AMERICA		0.050	0.005			NIOSH
	NATIONAL	UNITED STATES OF AMERICA	C			0.200	0.020	NIOSH
	NATIONAL	UNITED STATES OF AMERICA				0.200	0.020	OSHA
	NATIONAL	ITALY		0.051	0.005			
	NATIONAL	ARGENTINA			0.050			

	NATIONAL	CZECHIA	0.050	0.050	0.100		
	NATIONAL	CHILE	0.045	0.004			
	NATIONAL	CROATIA	0.020		0.070		
	NATIONAL	ESTONIA	0.050	0.005	0.100	0.010	
	NATIONAL	FINLAND			0.035		
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	0.020		0.070		
	NATIONAL	GREECE	0.200	0.020	0.200	0.020	
	NATIONAL	ICELAND	0.050	0.005	0.100	0.010	
	NATIONAL	LITHUANIA	0.050	0.005			
	NATIONAL	MALAYSIA	0.051	0.005			
	NATIONAL	MEXICO		0.005			
	NATIONAL	NETHERLANDS	0.050	0.005	0.210	0.020	
	NATIONAL	PORTUGAL		0.005			
	NATIONAL	RUSSIAN FEDERATION			0.500		
	NATIONAL	SLOVAKIA	0.030	0.002			
	NATIONAL	SLOVENIA	0.050	0.005	0.050	0.005	
	NATIONAL	SOUTH AFRICA		0.005		0.020	
	NATIONAL	SOUTH AFRICA		0.005		0.020	
	NATIONAL	TAIWAN, PROVINCE OF CHINA	0.200	0.020			
	ACGIH	NNN		0.005			Resp sens
xylene	EU	NNN	221	50	442	100	Skin
	NATIONAL	AUSTRIA	221.000	50.000	442.000	100.000	
	NATIONAL	BELGIUM	221.000	50.000	442.000	100.000	
	NATIONAL	CANADA		100.000		150.000	Ontario
	NATIONAL	CANADA	434.000	100.000	651.000	150.000	Québec
	NATIONAL	DENMARK	109.000	25.000	442.000	100.000	
	NATIONAL	FINLAND	220.000	50.000	440.000	100.000	
	NATIONAL	FRANCE	221.000	50.000	442.000	100.000	
	NATIONAL	GERMANY	440.000	100.000	880.000	200.000	AGS
	NATIONAL	GERMANY	440.000	100.000	880.000	200.000	DFG
	NATIONAL	HUNGARY	221.000		442.000		
	NATIONAL	IRELAND	221.000	50.000	442.000	100.000	
	NATIONAL	ISRAEL	434.000	100.000	442.000	100.000	
	NATIONAL	ITALY	221.000	50.000	442.000	100.000	
	NATIONAL	JAPAN		100.000			MHLW
	NATIONAL	JAPAN	217.000	50.000			JSOH
	NATIONAL	LATVIA	221.000	50.000	442.000	100.000	
	NATIONAL	NEW ZEALAND	217.000	50.000			
	NATIONAL	CHINA		50.000		100.000	
	NATIONAL	POLAND		100.000			
	NATIONAL	ROMANIA	221.000	50.000	442.000	100.000	
	NATIONAL	SINGAPORE	434.000	100.000	651.000	150.000	

	NATIONAL	KOREA, REPUBLIC OF	435.000	100.000	655.000	150.000	
	NATIONAL	SPAIN	221.000	50.000	442.000	100.000	
	NATIONAL	SWEDEN	221.000	50.000	442.000	100.000	
	NATIONAL	SWITZERLAND	435.000	100.000	870.000	200.000	
	NATIONAL	NETHERLANDS	210.000		442.000		
	NATIONAL	TURKEY	221.000	50.000	442.000	100.000	
	NATIONAL	UNITED STATES OF AMERICA	435.000	100.000	655.000	150.000	NIOSH
	NATIONAL	UNITED STATES OF AMERICA	435.000	100.000			OSHA
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	220.000	50.000	441.000	100.000	
	NATIONAL	ARGENTINA		100.000		150.000	
	NATIONAL	BULGARIA	221.000	50.000	445.000	100.000	
	NATIONAL	CZECHIA	200.000		400.000		
	NATIONAL	CHILE	380.000	87.000	621.000	150.000	
	NATIONAL	CROATIA	221.000	50.000	442.000	100.000	
	NATIONAL	ESTONIA	200.000	50.000	450.000	100.000	
	NATIONAL	GREECE	435.000	100.000	650.000	150.000	
	NATIONAL	INDONESIA	434.000	100.000	651.000	150.000	
	NATIONAL	ICELAND	109.000	25.000	442.000	100.000	
	NATIONAL	LITHUANIA	221.000	50.000	442.000	100.000	
	NATIONAL	MEXICO		100.000		150.000	
	NATIONAL	NORWAY	108.000	25.000			
	NATIONAL	PORTUGAL		100.000		150.000	
	NATIONAL	RUSSIAN FEDERATION	50.000		150.000		
	NATIONAL	SLOVAKIA	221.000	50.000	442.000	100.000	
	NATIONAL	SLOVENIA	221.000	50.000	442.000	100.000	
	NATIONAL	SOUTH AFRICA	218.000	50.000	435.000	100.000	
	NATIONAL	TAIWAN, PROVINCE OF CHINA	434.000	100.000			
	ACGIH	NNN		100		150	A4, BEI - URT and eye irr, CNS impair
	EU	NNN	221	50	442	100	Skin
Aluminium oxide	NATIONAL	FRANCE	10.000				Respirable aerosol
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	10.000				Inhalable aerosol
	NATIONAL	UNITED KINGDOM	4.000				Respirable aerosol

		OF GREAT BRITAIN AND NORTHERN IRELAND					
	NATIONAL	AUSTRALIA	10.000				Inhalable dust containing no asbestos and < 1% crystalline silica
	NATIONAL	AUSTRIA	10.000		20.000		Long term: inhalable fraction; Short term: inhalable fraction, 60 minutes average value
	NATIONAL	AUSTRIA	5.000		10.000		Long term: respirable fraction; Short term: respirable fraction, 60 minutes average value
	NATIONAL	CANADA	10.000				
	NATIONAL	DENMARK	5.000		10.000		Calculated as Al; Long term and Short term: inhalable aerosol
	NATIONAL	DENMARK	2.000		4.000		Calculated as Al; Long term and Short term: respirable aerosol
	NATIONAL	GERMANY	4.000				Inhalable aerosol
	NATIONAL	GERMANY	1.500				Respirable aerosol
	NATIONAL	HUNGARY	6.000				Respirable aerosol
	NATIONAL	IRELAND	10.000				Inhalable fraction
	NATIONAL	IRELAND	4.000				Respirable fraction
	NATIONAL	LATVIA	6.000				
	NATIONAL	NEW ZEALAND	10.000				The value for inhalable dust containing no asbestos and less than 1% free silica
	NATIONAL	POLAND	2.500		16.000		Aluminium trioxide as Al fume; Long term: total dust fume
	NATIONAL	POLAND	1.200				Aluminium trioxide as Al fume; Long term: respirable dust
	NATIONAL	ROMANIA	2.000	0.500	5.000	1.200	Long term and short term: aerosol
	NATIONAL	SINGAPORE	10.000				
	NATIONAL	KOREA, REPUBLIC OF	10.000				
	NATIONAL	SPAIN	10.000				Inhalable aerosol
	NATIONAL	SPAIN	5.000				Respirable aerosol
	NATIONAL	SWEDEN	5.000				Inhalable aerosol
	NATIONAL	SWEDEN	2.000				Respirable aerosol
	NATIONAL	SWITZERLAND	3.000				Respirable aerosol
	NATIONAL	UNITED STATES OF AMERICA	15.000				OSHA; Total dust
	NATIONAL	UNITED STATES OF AMERICA	5.000				OSHA; Inhalable dust
4-isocyanatosulphonyltoluene	NATIONAL	AUSTRALIA	0.020		0.070		
	NATIONAL	CROATIA	0.020		0.070		
	NATIONAL	FINLAND			0.035		
	NATIONAL	UNITED	0.020		0.070		

		KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND						
	NATIONAL	IRELAND		0.020		0.070		
	NATIONAL	NEW ZEALAND		0.020		0.070		
	NATIONAL	SWITZERLAND		0.020		0.020		
o-(p-isocyanatobenzyl) phenyl isocyanate	NATIONAL	GERMANY		0.050				AGS
	NATIONAL	GERMANY	C			0.050		AGS
	NATIONAL	POLAND		0.030		0.090		
	NATIONAL	AUSTRALIA		0.020		0.070		
	NATIONAL	AUSTRIA		0.050	0.005	0.100	0.010	
	NATIONAL	CANADA			0.005			
	NATIONAL	CANADA	C				0.010	
	NATIONAL	CROATIA		0.020		0.070		
	NATIONAL	FINLAND				0.035		
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND		0.020		0.070		
	NATIONAL	IRELAND		0.020		0.070		
	NATIONAL	NORWAY			0.005		0.010	
	NATIONAL	NEW ZEALAND		0.020		0.070		
	NATIONAL	SLOVENIA		0.050		0.050		
	NATIONAL	SWITZERLAND		0.020		0.020		
Diiron trioxide	NATIONAL	AUSTRALIA		5.000				
	NATIONAL	AUSTRIA		5.000		10.000		long term and short term: respirable aerosol
	NATIONAL	BELGIUM		5.000	2.000			
	NATIONAL	CANADA		5.000				Ontario; respirable aerosol
	NATIONAL	CANADA		5.000				Québec
	NATIONAL	DENMARK		3.500		7.000		
	NATIONAL	FINLAND		5.000				Calculed as Fe; fume
	NATIONAL	HUNGARY		6.000				Respirable aerosol
	NATIONAL	IRELAND		5.000		10.000		
	NATIONAL	NEW ZEALAND		5.000				
	NATIONAL	POLAND		5.000		10.000		
	NATIONAL	ROMANIA		5.000		10.000		
	NATIONAL	SINGAPORE		5.000				
	NATIONAL	KOREA, REPUBLIC OF		5.000				
	NATIONAL	SPAIN		5.000				
	NATIONAL	SWEDEN		3.500				
	NATIONAL	SWITZERLAND		3.000				Respirable aerosol

	NATIONAL	UNITED STATES OF AMERICA		5.000				NIOSH; AS Fe, total particulate
	NATIONAL	UNITED STATES OF AMERICA		10.000				OSHA
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND		5.000		10.000		
	NATIONAL	ITALY		5.000				
	NATIONAL	ARGENTINA		5.000				
	NATIONAL	BULGARIA		5.000				
	NATIONAL	CROATIA		5.000				
	NATIONAL	ESTONIA		3.500				
	NATIONAL	FRANCE		5.000				
	NATIONAL	GERMANY		1.250				
	NATIONAL	GREECE		10.000		10.000		
	NATIONAL	INDONESIA		5.000				
	NATIONAL	ICELAND		3.500				
	NATIONAL	LITHUANIA		3.500				
	NATIONAL	MALAYSIA		5.000	2.000			
	NATIONAL	MEXICO		5.000				Respirable fraction
	NATIONAL	NORWAY		3.000				
	NATIONAL	PORTUGAL		5.000				
	NATIONAL	RUSSIAN FEDERATION		6.000				
	NATIONAL	SLOVAKIA		1.500				
	NATIONAL	SLOVENIA		6.000				
	NATIONAL	SOUTH AFRICA		5.000				Respirable particulate
	NATIONAL	SOUTH AFRICA		10.000				Inhalable particulate
	NATIONAL	TAIWAN, PROVINCE OF CHINA		10.000				
	NATIONAL	HUNGARY		6.000				
	ACGIH	NNN		5				(R), A4 - Pneumoconiosis
Triiron tetraoxide	NATIONAL	POLAND		2.500		5.000		Long term and short term: respirable fraction
	NATIONAL	POLAND		5.000		10.000		Long term and short term: inhalable fraction
benzoyl chloride	ACGIH	NNN	C				0.5	A4 - URT and eye irr

Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC Limit	Exposure Route	Exposure Frequency
4,4'-methylenediphenyl diisocyanate	101-68-8	1.000 mg/l	Freshwater	
		10.000 mg/l	Intermittent releases (freshwater)	
		100.000 µg/l	Marine water	
		1.000 mg/l	Microorganisms in sewage treatments	

		1.000 mg/kg	Soil
xylene	95-47-6	129.400 µg/l	Freshwater
		125.500 µg/l	Intermittent releases (freshwater)
		125440.000 ng/L	Marine water
		3.300 mg/l	Microorganisms in sewage treatments
		7.410 µg/kg	Freshwater sediments
		7.190 µg/kg	Marine water sediments
		1252.000 µg/kg	Soil
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	1065336-91-5	2.200 µg/l	Freshwater
		9.000 µg/l	Intermittent releases (freshwater)
		220.000 ng/L	Marine water
		1.000 mg/l	Microorganisms in sewage treatments
		1.050 mg/kg	Freshwater sediments
		110.000 µg/kg	Marine water sediments
		210.000 µg/kg	Soil

Derived No Effect Level (DNEL) values

Component	CAS-No.	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency
4,4'-methylenediphenyl diisocyanate	101-68-8		50.000 µg/m³	25.000 µg/m³	Human Inhalation	Long Term, local effects
			100.000 µg/m³	50.000 µg/m³	Human Inhalation	Short Term, local effects
Hydroxyphenyl benzotriazole derivatives			350.000 µg/m³	85.000 µg/m³	Human Inhalation	Long Term, systemic effects
			250.000 µg/kg	25.000 µg/kg	Human Dermal	Long Term, systemic effects
				25.000 µg/kg	Human Oral	Long Term, systemic effects
xylene	95-47-6		221.000 mg/m³	65.300 mg/m³	Human Inhalation	Long Term, systemic effects
			442.000 mg/m³	260.000 mg/m³	Human Inhalation	Short Term, systemic effects
			221.000 mg/m³	65.300 mg/m³	Human Inhalation	Long Term, local effects
			442.000 mg/m³	260.000 mg/m³	Human Inhalation	Short Term, local effects
			212.000 mg/kg	125.000 mg/kg	Human Dermal	Long Term, systemic effects
				5.000 mg/kg	Human Oral	Long Term, systemic effects
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	1065336-91-5		680.000 µg/m³	170.000 µg/m³	Human Inhalation	Long Term, systemic effects
			500.000 µg/kg	250.000 µg/kg	Human Dermal	Long Term, systemic effects

	50.000 µg/kg	Human Oral	Long Term, systemic effects

8.2. Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use adequate protective respiratory equipment.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State Liquid

Color: In compliance with the product description

Odour: Light

Odour threshold: N.A.

pH: Not Relevant

Kinematic viscosity: N.A.

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: 71 °C (160 °F)

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.40 g/cm3

Solubility in water: N.A.

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): N.A.

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Flammability: N.A.

Volatile Organic compounds - VOCs = 4.91 % ; 68.75 g/l

Particle characteristics:

Particle size: N.A.

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Evaporation rate: N.A. No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
b) skin corrosion/irritation	Not classified
	Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified
	Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	The product is classified: Resp. Sens. 1(H334)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	a) acute toxicity	LD50 Oral Rat > 5000.00 mg/kg	
		LC50 Inhalation Vapour Rat > 5000.00 mg/m3 8h	
		LD50 Skin Rabbit > 2000.00 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Rat Negative	Inhalation route
		Carcinogenicity Inhalation Rat Positive	
	g) reproductive toxicity	No Observed Adverse Effect Level Rat > 20000.00 mg/m3	
4,4'-methylenediphenyl diisocyanate	a) acute toxicity	LD50 Oral Rat > 2000.00000 mg/kg	
		LC50 Inhalation Rat = 0.49000 mg/l 4h	
		LD50 Skin Rabbit > 9400.00000 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No 24h	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative	
	f) carcinogenicity	Genotoxicity Rat Negative 6h	Inhalation of aerosol
Hydroxyphenyl benzotriazole derivatives	a) acute toxicity	LD50 Oral Rat > 5000.00000 mg/kg	
		LC50 Inhalation Rat > 5.80000 mg/l 96h	
		LD50 Skin Rat > 2000.00000 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 4h	

	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Hamster oral route
	g) reproductive toxicity	No Observed Effect Level Oral Rat < 2.00000 mg/kg	
xylene	a) acute toxicity	LD50 Oral Rat = 3523.00 ml/Kg	
		LC50 Inhalation Vapour Rat = 27124.00 mg/m3 4h	
		LD50 Skin Rabbit = 12126.00 mg/kg 24h	
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive 4h	
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes 1h	
	f) carcinogenicity	Genotoxicity Negative	Mouse subcutaneous route
	g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 500.00 mg/kg	ppm
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	a) acute toxicity	LD50 Oral Rat = 3230.00 mg/kg	
		LD50 Skin Rat > 3170.00 mg/kg	
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h	
	c) serious eye damage/irritation	Eye Irritant Rabbit No	
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Positive	
	f) carcinogenicity	Genotoxicity Negative	Mouse oral route
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 30.00 mg/kg	

11.2 Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	CAS: 64742-48-9 - EINECS: 919-857-5	a) Aquatic acute toxicity : LL50 Fish Oncorhynchus mykiss = 10.00 mg/L 96h
		a) Aquatic acute toxicity : EL50 Daphnia Daphnia magna = 4.50 mg/L 48h
		b) Aquatic chronic toxicity : NOELR Daphnia Daphnia magna = 2.60 mg/L - 21days
		a) Aquatic acute toxicity : NOELR Algae Pseudokirchnerella subcapitata = 0.50 mg/L 72h
4,4'-methylenediphenyl diisocyanate	CAS: 101-68-8 - EINECS: 202-	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 1000.00000 mg/L 96h OECD 203

	966-0 - INDEX: 615-005-00-9	
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 1000.00000 mg/L 24h OECD 202
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 10.00000 mg/L OECD 211 - 21days
		a) Aquatic acute toxicity : EC50 Algae Scenedesmus subspicatus = 1640.00000 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : EC5 Sludge activated sludge = 100.00000 mg/L 3h OECD 209
		d) Terrestrial toxicity : LC50 Worm Eisenia fetida = 1000.00000 mg/kg OECD 207 - 14days
		e) Plant toxicity : LC50 terrestrial plants = 1000.00000 mg/kg OECD 208 - 14days
Hydroxyphenyl benzotriazole derivatives	EINECS: 400-830-7 - INDEX: 607-176-00-3	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 2.80000 mg/L 96h
		a) Aquatic acute toxicity : LC50 freshwater invertebrates = 4.00000 mg/L
		b) Aquatic chronic toxicity : EC50 Daphnia Daphnia magna = 780.00000 µg/L OECD Guideline 211 (Daphnia magna Reproduction Test) - 21days
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 9.00000 mg/L 72h
		d) Terrestrial toxicity : LC50 Worm Eisenia foetida > 1000.00000 mg/kg ,,OECD Guideline 207 (Earthworm, Acute Toxicity Tests - 14days
xylene	CAS: 95-47-6 - EINECS: 202-422-2 - INDEX: 601-022-00-9	a) Aquatic acute toxicity : LC50 Fish freshwater fish = 2.60 mg/L 96h OECD 203
		b) Aquatic chronic toxicity : NOEC Fish Danio rerio = 0.71 mg/L OECD Guideline 210
		a) Aquatic acute toxicity : LC50 Daphnia Daphnia magna = 1.00 mg/L 24h OECD 202
		b) Aquatic chronic toxicity : NOEC Daphnia Ceriodaphnia dubia = 1.17 mg/L - 21days
		a) Aquatic acute toxicity : EC50 Algae freshwater algae = 2.20 mg/L 72h OECD 201
		a) Aquatic acute toxicity : EC50 microorganisms = 16.00 mg/L OECD 301F
		d) Terrestrial toxicity : NOEC soil macroorganisms = 88.80 mg/kg - 14days
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	CAS: 1065336-91-5 - EINECS: 915-687-0	a) Aquatic acute toxicity : LC50 Fish Danio rerio = 0.90 mg/L 96h OECD Guideline 203
		b) Aquatic chronic toxicity : NOEC Daphnia Daphnia magna = 1.00 mg/L OECD guideline 211
		a) Aquatic acute toxicity : EC50 Algae Desmodesmus subspicatus = 1.68 mg/L 72h OECD Guideline 201
		a) Aquatic acute toxicity : EC20 Sludge activated sludge >= 100.00 mg/L 3h OECD guideline 209

12.2. Persistence and degradability

Component	Persitence/Degradability:	Test	Value	Notes
4,4'-methylenediphenyl diisocyanate	Non-readily biodegradable	Oxygen consumption	0.000	OECD Guideline 302C
Hydroxyphenyl benzotriazole derivatives	Non-readily biodegradable		12.000	%; OECD 301B
xylene	Readily biodegradable	Biochemical oxigen demand	90.000	28days

1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Non-readily biodegradable	38.000	28days

12.3. Bioaccumulative potential

Component	Bioaccumulation	Test	Value	Notes
4,4'-methylenediphenyl diisocyanate	Bioaccumulative	BCF - Bioconcentrantion factor	200.000	OECD 305E
xylene	Bioaccumulative	BCF - Bioconcentrantion factor	25.900	
1-Methyl 1,2,2,6,6-pentamethylpiperidin-4-yl decanedioate bis(1,2,2,6,6-pentamethylpiperidin-4-yl) decanedioate	Not bioaccumulative			

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT/vPvB Ingredients are present

12.6 Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7 Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

A waste code according to European waste catalogue (EWC) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):

HP 13: Sensitising

SECTION 14: Transport information

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Technical name: N/A

IMDG-Technical name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A

IATA-Class: N/A

IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A

IATA-Packing group: N/A

IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID) :

ADR exempt: No

ADR-Label: N/A

ADR - Hazard identification number: N/A

ADR-Special Provisions: N/A

ADR-Transport category (Tunnel restriction code): N/A

ADR Limited Quantities: N/A

ADR Excepted Quantities: N/A

Air (IATA) :

IATA-Passenger Aircraft: N/A

IATA-Cargo Aircraft: N/A

IATA-Label: N/A

IATA-Subsidiary hazards: N/A

IATA-Erg: N/A

IATA-Special Provisioning: N/A

Sea (IMDG) :

IMDG-Stowage Code: N/A

IMDG-Stowage Note: N/A

IMDG-Subsidiary hazards: N/A

IMDG-Special Provisioning: N/A

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2020/878

Regulation (EC) nr 648/2004 (Detergents).

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3

Restrictions related to the substances contained: 40, 52, 56, 74, 75

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

Regulation (EU) 649/2012 (PIC regulation):

No Substance Listed

German Water Hazard Class.

NWG: Not hazardous for water

SVHC Substances:

No data available

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Code	Description
EUH066	Repeated exposure may cause skin dryness or cracking.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
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.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
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.
H411	Toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.1/1	Resp. Sens. 1	Respiratory Sensitisation, Category 1
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.6/2	Carc. 2	Carcinogenicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2

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

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
3.4.1/1	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community
CLP: Classification, Labeling, Packaging.
CMR: Carcinogenic, Mutagenic and Reprotoxic
COD: Chemical Oxygen Demand
COV: Volatile Organic Compound
CSA: Chemical Safety Assessment
CSR: Chemical Safety Report
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level.
DPD: Dangerous Preparations Directive
DSD: Dangerous Substances Directive
EC50: Half Maximal Effective Concentration
ECHA: European Chemicals Agency
EINECS: European Inventory of Existing Commercial Chemical Substances.
ES: Exposure Scenario
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
IRCCS: Scientific Institute for Research, Hospitalization and Health Care
KAFH: Keep Away From Heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration.
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 15. REGULATORY INFORMATION

Exposure Scenario
4,4'-methylenediphenyl diisocyanate

Exposure Scenario, 14/07/2021

Substance identity	
	4,4'-methylenediphenyl diisocyanate
CAS No.	101-68-8
INDEX No.	615-005-00-9
EINECS No.	202-966-0
Registration number	01-2119457014-47

Table of contents

1. ES 1 Widespread use by professional workers; Various products (PC9a, PC1)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks - Use in rigid foams, coatings, adhesives and sealants
Date - Version	14/07/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Adhesives, sealants (PC1)

Environment Contributing Scenario

CS1	ERC8c - ERC8f

Worker Contributing Scenario

CS2 Bulk transfers	PROC8a
CS3 Rolling, Brushing	PROC10
CS4 Roller, spreader, flow application	PROC11

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8c, ERC8f)

Environmental release categories	Widespread use leading to inclusion into/onto article (indoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8c, ERC8f)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site = 329 tonnes/day

Release type: Continuous release

Emission days: 365 days per year

Technical and organisational conditions and measures

Control measures to prevent releases

	Air - minimum efficiency of: = 0.15 % Soil - minimum efficiency of: = 0.005 %

Conditions and measures related to sewage treatment plant

STP type:
No specific measures identified.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10

1.2. CS2: Worker Contributing Scenario: Bulk transfers (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency = 365 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear a respirator conforming to EN140.
Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.
Use suitable eye protection.
Wear suitable coveralls to prevent exposure to the skin.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use

Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Frequency:

Use frequency = 365 days per year

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear a respirator conforming to EN140.
Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.
Use suitable eye protection.
Wear suitable coveralls to prevent exposure to the skin.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use

Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.2. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Exposure duration < 4 h/day

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear chemically resistant gloves (tested to EN374) in combination with ''basic'' employee training.
Use suitable eye protection.
Wear suitable coveralls to prevent exposure to the skin.
Wear a full face respirator conforming to EN136.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8c, ERC8f)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.00694 mg/L	EUSES	< 0.00694
marine water	= 0.000545 mg/L	EUSES	< 0.000545
soil	= 0.271 mg/kg dry weight	EUSES	< 0.271

1.3. CS2: Worker Contributing Scenario: Bulk transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, short-term	= 0.058 mg/m³	N/A	= 0.582
inhalative, long-term	= 0.029 mg/m³	N/A	= 0.582

1.3. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, short-term	= 0.034 mg/m³	N/A	= 0.328

inhalative, long-term	= 0.017 mg/m³	N/A	= 0.328

1.3. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, short-term	= 0.08 mg/m³	N/A	= 0.8

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure Scenario
Naphtha (petroleum), hydrotreated heavy

Exposure Scenario, 08/06/2021

Substance identity	
	Naphtha (petroleum), hydrotreated heavy
CAS No.	64742-48-9
INDEX No.	649-327-00-6
EINECS No.	265-150-3

Table of contents

1. ES 1 Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	12/05/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1	ERC8a - ERC8d

Worker Contributing Scenario

CS2 Equipment cleaning and maintenance - Rolling, Brushing - Material transfers	PROC8a - PROC10 - PROC11

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

1.2. CS2: Worker Contributing Scenario: Equipment cleaning and maintenance - Rolling, Brushing - Material transfers (PROC8a, PROC10, PROC11)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Roller application or brushing - Non industrial spraying (PROC8a, PROC10, PROC11)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Do not ingest.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.
Wear suitable face shield.
Wear an impervious suit.

Other conditions affecting worker exposure

Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.3 Exposure estimation and reference to its source

N/A

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.