

Safety data sheets Ferney Group BV

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

1.1. Product identifier

Productname	Kelfort ® Tix Expresse
Article number	1516420
Producttype	Mixture
Regulation	(EC) No. 1907/2006 and (EC) No. 1272/2008

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

Recommended use	Professional use, Consumer use
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Distributeur Ferney Group BV
Postbus 24
1700 AA Heerhugowaard - The Netherlands
T +31 (0)72-5765000 - F +31 (0)72-5765010
bedrijfsbureau@ferneygroup.nl - www.ferney.nl

1.4 Emergency telephone number

Noodtelefoon : +49(0)9366-907126 (ma-do 7.15-18.00 hour) or
: +31(0)88-7558000 (after worktime, exclusive use for doctors, pharmacists and government institutions)

Country	Organisation/ Company	Address	Emergency number	Comments
The Netherlands	National Poisons Information Center	House post number B.00.118 PO Box 85500 3508 GA Utrecht	+31 88 755 80 00	For the sole purpose of informing healthcare professionals in the event of acute poisoning

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Respiratory sensitisation, Category 1	H334
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 2	H351
Specific target organ toxicity – Single exposure, Category 3,	H335
Respiratory tract irritation	
Specific target organ toxicity – Repeated exposure, Category 2	H373
Hazardous to the aquatic environment – Chronic Hazard, Category 3	H412

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. May cause respiratory irritation. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Harmful to aquatic life with long lasting effects.

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2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

GHS08

Signal word (CLP)

: Danger

Contains

: Aromatic polyisocyanate-prepolymer; 4,4'-methylenediphenyl diisocyanate; diphenylmethane-2,4'-diisocyanate; polymethylene polyphenyl isocyanate

Hazard statements (CLP)

: H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H351 - Suspected of causing cancer.
H373 - May cause damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P260 - Do not breathe dusts or mists.
P280 - Wear protective gloves, eye protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Extra phrases

: 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.

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2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
4,4'-methylenediphenyl diisocyanate (101-68-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
diphenylmethane-2,4'-diisocyanate (5873-54-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
2,2'-methylenediphenyl diisocyanate (2536-05-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
diethylmethylbenzenediamine (68479-98-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
polymethylene polyphenyl isocyanate (9016-87-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Aromatic polyisocyanate-prepolymer	CAS-No.: 67815-87-6	≥ 50 – < 75	Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l/4h) Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 STOT RE 2, H373
polymethylene polyphenyl isocyanate substance with national workplace exposure limit(s) (GB)	CAS-No.: 9016-87-9	≥ 25 – < 50	Carc. 2, H351 Resp. Sens. 1, H334 Skin Sens. 1, H317 Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l/4h) STOT RE 2, H373 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
4,4'-methylenediphenyl diisocyanate substance with national workplace exposure limit(s) (GB)	CAS-No.: 101-68-8 EC-No.: 202-966-0 EC Index-No.: 615-005-00-9 REACH-no: 01-2119457014-47	≥ 1 – < 5	Carc. 2, H351 Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l/4h) STOT RE 2, H373 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317
diphenylmethane-2,4'-diisocyanate substance with national workplace exposure limit(s) (GB)	CAS-No.: 5873-54-1 EC-No.: 227-534-9 EC Index-No.: 615-005-00-9 REACH-no: 01-2119480143-45	≥ 1 – < 5	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
diethylmethylbenzenediamine	CAS-No.: 68479-98-1 EC-No.: 270-877-4 EC Index-No.: 612-130-00-0 REACH-no: 01-2119486805-25	≥ 0.1 – < 1	Acute Tox. 4 (Dermal), H312 (ATE=1100 mg/kg bodyweight) Acute Tox. 4 (Oral), H302 (ATE=738 mg/kg bodyweight) STOT RE 2, H373 Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,2'-methylenediphenyl diisocyanate substance with national workplace exposure limit(s) (GB)	CAS-No.: 2536-05-2 EC-No.: 219-799-4 EC Index-No.: 615-005-00-9	< 0.1	Carc. 2, H351 Resp. Sens. 1, H334 Skin Sens. 1, H317 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
4,4'-methylenediphenyl diisocyanate	CAS-No.: 101-68-8 EC-No.: 202-966-0 EC Index-No.: 615-005-00-9 REACH-no: 01-2119457014-47	(0.1 ≤ C ≤ 100) Resp. Sens. 1, H334 (5 ≤ C ≤ 100) Eye Irrit. 2, H319 (5 ≤ C ≤ 100) Skin Irrit. 2, H315 (5 ≤ C ≤ 100) STOT SE 3, H335
diphenylmethane-2,4'-diisocyanate	CAS-No.: 5873-54-1 EC-No.: 227-534-9 EC Index-No.: 615-005-00-9 REACH-no: 01-2119480143-45	(0.1 ≤ C ≤ 100) Resp. Sens. 1, H334 (5 ≤ C ≤ 100) Eye Irrit. 2, H319 (5 ≤ C ≤ 100) Skin Irrit. 2, H315 (5 ≤ C ≤ 100) STOT SE 3, H335
2,2'-methylenediphenyl diisocyanate	CAS-No.: 2536-05-2 EC-No.: 219-799-4 EC Index-No.: 615-005-00-9	(0.1 ≤ C < 100) Resp. Sens. 1, H334 (5 ≤ C < 100) Eye Irrit. 2, H319 (5 ≤ C < 100) Skin Irrit. 2, H315 (5 ≤ C < 100) STOT SE 3, H335

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: If swallowed, seek medical advice immediately and show this container or label.

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

Symptoms/effects	: May cause damage to organs.
Symptoms/effects after inhalation	: May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye irritation.

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

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Decomposes on exposure to temperature rise: formation of small quantities of hydrogen cyanide. Reacts violently with hot water: pressure rise and possible bursting of container.
Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity in case of fire : Reacts with water: release of toxic/harmful substances.
Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon monoxide. Carbon dioxide. formation of small quantities of hydrogen cyanide.

5.3. Advice for firefighters

Firefighting instructions : Cool closed containers exposed to fire with water spray.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information : Dilute toxic gases with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- | | |
|-----------------------------------|---|
| Additional hazards when processed | : Do not breathe vapours. |
| Precautions for safe handling | : Provide good ventilation in process area to prevent formation of vapour. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. |
| Hygiene measures | : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. |

7.2. Conditions for safe storage, including any incompatibilities

- | | |
|--------------------|--|
| Storage conditions | : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool. |
|--------------------|--|

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

4,4'-methylenediphenyl diisocyanate (101-68-8)

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA)	0.02 mg/m ³
WEL STEL (OEL STEL)	0.07 mg/m ³

diphenylmethane-2,4'-diisocyanate (5873-54-1)

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA)	0.02 mg/m ³
WEL STEL (OEL STEL)	0.07 mg/m ³

2,2'-methylenediphenyl diisocyanate (2536-05-2)

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA)	0.02 mg/m ³
WEL STEL (OEL STEL)	0.07 mg/m ³

polymethylene polyphenyl isocyanate (9016-87-9)

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA)	0.02 mg/m ³
WEL STEL (OEL STEL)	0.07 mg/m ³

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

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8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses. (EN 166)

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing. (EN 14605; EN13034)

Hand protection:

Protective gloves against chemicals (EN 374)

8.2.2.3. Respiratory protection

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection. Gas mask with filter type A

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: brown.
Odour	: characteristic.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: ≈ 368 °C Data apply to the main component
Flammability	: Not applicable
Explosive properties	: The product is not flammable.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: The product is not flammable
Auto-ignition temperature	: The product is not flammable
Decomposition temperature	: Substance or mixture is not classified as self-reactive
pH	: pH not determined (not soluble in water)
Viscosity, kinematic	: thixotropic
Viscosity, dynamic	: thixotropic
Solubility	: Water: not soluble
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: Insoluble in water
Vapour pressure	: 16 hPa Component with highest volatility
Vapour pressure at 50°C	: 35 hPa Component with highest volatility
Density	: 1.15 g/cm ³ ISO 1183-1
Relative density	: Not available
Relative vapour density at 20°C	: Not determined
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

VOC content : 0.4 – 0.5 %

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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Inhalation:dust,mist: Harmful if inhaled.

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ATE CLP (dust,mist)	1.594 mg/l/4h
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Aromatic polyisocyanate-prepolymer (67815-87-6)

LD50 dermal rabbit	> 9400 mg/kg
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4,4'-methylenediphenyl diisocyanate (101-68-8)

LD50 oral rat	> 2000 mg/kg bodyweight (Rat, Male / female, Read-across, Oral, 14 day(s))
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LD50 dermal rabbit	> 9400 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
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LC50 Inhalation - Rat (Dust/Mist)	0.49 mg/l/4h
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diphenylmethane-2,4'-diisocyanate (5873-54-1)

LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: other:84/449/EEC (Gazette of the European Community, No. L 251, of 19 Sept, 1984, page 96)
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LD50 dermal rabbit	> 9400 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
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diphenylmethane-2,4'-diisocyanate (5873-54-1)

LC50 Inhalation - Rat	387 mg/m ³ air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (aerosol))
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2,2'-methylenediphenyl diisocyanate (2536-05-2)

LD50 oral rat	> 5000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value, Oral, 15 day(s))
LD50 dermal rabbit	> 9400 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat	0.42 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value of similar product, Inhalation (aerosol), 14 day(s))

diethylmethylbenzenediamine (68479-98-1)

LD50 oral rat	738 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 2.45 mg/l (1 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))

polymethylene polyphenyl isocyanate (9016-87-9)

LD50 oral rat	> 10000 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Literature study, Dermal)
LC50 Inhalation - Rat	10 – 20 mg/l/4h
LC50 Inhalation - Rat (Dust/Mist)	0.49 mg/l/4h
LC50 Inhalation - Rat (Vapours)	0.387 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
 pH: pH not determined (not soluble in water)

4,4'-methylenediphenyl diisocyanate (101-68-8)

pH	7 (6.8E-3 g/l, 25 °C)
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diphenylmethane-2,4'-diisocyanate (5873-54-1)

pH	7 (Calculated, 7.5E-3 g/l, 25 °C)
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2,2'-methylenediphenyl diisocyanate (2536-05-2)

pH	No data available in the literature
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diethylmethylbenzenediamine (68479-98-1)

pH	8 (0.1 %)
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polymethylene polyphenyl isocyanate (9016-87-9)

pH	No data available in the literature
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Serious eye damage/irritation : Causes serious eye irritation.
 pH: pH not determined (not soluble in water)

4,4'-methylenediphenyl diisocyanate (101-68-8)

pH	7 (6.8E-3 g/l, 25 °C)
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diphenylmethane-2,4'-diisocyanate (5873-54-1)

pH	7 (Calculated, 7.5E-3 g/l, 25 °C)
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2,2'-methylenediphenyl diisocyanate (2536-05-2)

pH	No data available in the literature
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diethylmethylbenzenediamine (68479-98-1)

pH	8 (0.1 %)
----	-----------

polymethylene polyphenyl isocyanate (9016-87-9)

pH	No data available in the literature
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Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

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4,4'-methylenediphenyl diisocyanate (101-68-8)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
Aromatic polyisocyanate-prepolymer (67815-87-6)	
STOT-single exposure	May cause respiratory irritation.
4,4'-methylenediphenyl diisocyanate (101-68-8)	
STOT-single exposure	May cause respiratory irritation.
diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-single exposure	May cause respiratory irritation.
2,2'-methylenediphenyl diisocyanate (2536-05-2)	
STOT-single exposure	May cause respiratory irritation.
polymethylene polyphenyl isocyanate (9016-87-9)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aromatic polyisocyanate-prepolymer (67815-87-6)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
4,4'-methylenediphenyl diisocyanate (101-68-8)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
diphenylmethane-2,4'-diisocyanate (5873-54-1)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
2,2'-methylenediphenyl diisocyanate (2536-05-2)	
STOT-repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure (if inhaled).
diethylmethylbenzenediamine (68479-98-1)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
polymethylene polyphenyl isocyanate (9016-87-9)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (if inhaled).
Aspiration hazard	: Not classified

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Viscosity, kinematic	thixotropic
4,4'-methylenediphenyl diisocyanate (101-68-8)	
Viscosity, kinematic	Not applicable (solid)
diphenylmethane-2,4'-diisocyanate (5873-54-1)	
Viscosity, kinematic	No data available in the literature
2,2'-methylenediphenyl diisocyanate (2536-05-2)	
Viscosity, kinematic	No data available in the literature
diethylmethylbenzenediamine (68479-98-1)	
Viscosity, kinematic	No data available in the literature
polymethylene polyphenyl isocyanate (9016-87-9)	
Viscosity, kinematic	No data available in the literature

11.2. Information on other hazards

No additional information available

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.
Not rapidly degradable

diphenylmethane-2,4'-diisocyanate (5873-54-1)

LC50 - Fish [1]	> 1000 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)
NOEC (chronic)	≥ 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

2,2'-methylenediphenyl diisocyanate (2536-05-2)

LC50 - Fish [1]	> 1000 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Read-across, Nominal concentration)
EC50 - Crustacea [1]	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Read-across, GLP)
ErC50 algae	> 1640 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)
NOEC (chronic)	≥ 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

diethylmethylbenzenediamine (68479-98-1)

LC50 - Fish [1]	200 mg/l (DIN 38412-15, 48 h, Leuciscus idus, Static system, Fresh water, Experimental value, Nominal concentration)
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diethylmethylbenzenediamine (68479-98-1)

EC50 - Crustacea [1]	0.5 mg/l Test organisms (species): Daphnia magna
ErC50 algae	104 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

polymethylene polyphenyl isocyanate (9016-87-9)

LC50 - Other aquatic organisms [1]	> 1000 mg/l (96 h, Literature study)
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12.2. Persistence and degradability

4,4'-methylenediphenyl diisocyanate (101-68-8)

Persistence and degradability Not readily biodegradable in water.

diphenylmethane-2,4'-diisocyanate (5873-54-1)

Persistence and degradability Not readily biodegradable in water.

2,2'-methylenediphenyl diisocyanate (2536-05-2)

Persistence and degradability Not readily biodegradable in water.

diethylmethylbenzenediamine (68479-98-1)

Persistence and degradability Not biodegradable.

Chemical oxygen demand (COD) 2.37 g O₂/g substance

polymethylene polyphenyl isocyanate (9016-87-9)

Persistence and degradability not readily degradable in water.

12.3. Bioaccumulative potential

Kelfort Tix Expresse

Partition coefficient n-octanol/water (Log Pow) Insoluble in water

4,4'-methylenediphenyl diisocyanate (101-68-8)

BCF - Fish [1] 92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, GLP)

Partition coefficient n-octanol/water (Log Pow) 4.5 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

diphenylmethane-2,4'-diisocyanate (5873-54-1)

BCF - Fish [1] 92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)

Partition coefficient n-octanol/water (Log Pow) 4.5 (Read-across, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 22 °C)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

2,2'-methylenediphenyl diisocyanate (2536-05-2)

BCF - Fish [1] 92 – 200 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, GLP)

Partition coefficient n-octanol/water (Log Pow) 5.22 (QSAR, KOWWIN)

Bioaccumulative potential Low potential for bioaccumulation (BCF < 500).

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diethylmethylbenzenediamine (68479-98-1)

Partition coefficient n-octanol/water (Log Pow)	1.4 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

polymethylene polyphenyl isocyanate (9016-87-9)

BCF - Fish [1]	268 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	10 (Calculated, KOWWIN)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

4,4'-methylenediphenyl diisocyanate (101-68-8)

Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.5 – 5.5 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

diphenylmethane-2,4'-diisocyanate (5873-54-1)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.5 – 5.5 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

2,2'-methylenediphenyl diisocyanate (2536-05-2)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.53 – 5.472 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

diethylmethylbenzenediamine (68479-98-1)

Surface tension	50 mN/m (0.5 %)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.12 – 2.23 (log Koc, SRC PCKOCWIN v1.66, QSAR)
Ecology - soil	Low potential for adsorption in soil.

polymethylene polyphenyl isocyanate (9016-87-9)

Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	9.1 – 11 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Adsorbs into the soil.

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12.5. Results of PBT and vPvB assessment

Component

4,4'-methylenediphenyl diisocyanate (101-68-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
diphenylmethane-2,4'-diisocyanate (5873-54-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
2,2'-methylenediphenyl diisocyanate (2536-05-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component

diethylmethylbenzenediamine (68479-98-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
polymethylene polyphenyl isocyanate (9016-87-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation	: Collect all waste in suitable and labelled containers and dispose according to local legislation.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Do not discharge into drains or the environment.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
European List of Waste (LoW, EC 2000/532)	: 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances 15 01 10* - packaging containing residues of or contaminated by dangerous substances

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SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID /

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated for transport				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	Kelfort Tix Expresse ; Aromatic polyisocyanate- prepolymer ; diethylmethylbenzenedia mine ; polymethylene polyphenyl isocyanate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	Kelfort Tix Expresse ; diethylmethylbenzenedia mine	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
56.	4,4'-methylenediphenyl diisocyanate ; diphenylmethane-2,4'- diisocyanate ; 2,2'- methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI)
56(a)	4,4'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI) isomers: 4,4'-Methylenediphenyl diisocyanate
56(b)	diphenylmethane-2,4'- diisocyanate	Methylenediphenyl diisocyanate (MDI) isomers: 2,4'-Methylenediphenyl diisocyanate
56(c)	2,2'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI) isomers: 2,2'-Methylenediphenyl diisocyanate
74.	4,4'-methylenediphenyl diisocyanate ; diphenylmethane-2,4'- diisocyanate ; 2,2'- methylenediphenyl diisocyanate	Diisocyanates, $O = C = N - R - N = C = O$, with R an aliphatic or aromatic hydrocarbon unit of unspecified length

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

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PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

VOC Directive (2004/42)

VOC content : 0.4 – 0.5 %

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Indication of changes:
Physical and chemical properties.

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration

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Abbreviations and acronyms:

NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

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Full text of H- and EUH-statements:	
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
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.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

Full text of H- and EUH-statements:	
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

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

Acute Tox. 4 (Inhalation:dust,mist)	H332	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Resp. Sens. 1	H334	Calculation method
Skin Sens. 1	H317	Calculation method
Carc. 2	H351	Calculation method
STOT SE 3	H335	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Chronic 3	H412	Calculation method

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.