

Article No.: 972  
Print date: 27.12.2022  
Version: 2.0

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

### 1.1. Product identifier

Article No. (manufacturer/supplier) 972  
Trade name/designation BRILAFER Härter II  
2K Hammerschlaglack

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

### 1.3. Details of the supplier of the safety data sheet

**supplier (manufacturer/importer/downstream user/distributor)**  
Vismara Unternehmungen CH-5000 Aarau www.farbladen.ch

### Department responsible for information:

laboratory Manager  
E-mail (competent person) info@knuchel.ch

### 1.4. Emergency telephone number

Emergency telephone number 145 (+41 (0)44 251 51 51)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Flam. Liq. 3 / H226	Flammable liquids	Flammable liquid and vapour.
Acute Tox. 4 / H332	Acute toxicity (inhalative)	Harmful if inhaled.
Skin Irrit. 2 / H315	Skin corrosion/irritation	Causes skin irritation.
Eye Irrit. 2 / H319	Serious eye damage/eye irritation	Causes serious eye irritation.
Skin Sens. 1 / H317	Respiratory or skin sensitisation	May cause an allergic skin reaction.
STOT SE 3 / H335	STOT-single exposure	May cause respiratory irritation.
STOT RE 2 / H373	STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

### 2.2. Label elements

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

#### Hazard pictograms



Warning

#### Hazard statements

H226 Flammable liquid and vapour.  
H332 Harmful if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.  
H373 May cause damage to organs through prolonged or repeated exposure.

#### Precautionary statements

P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P103 Read carefully and follow all instructions.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P260 Do not breathe vapour.  
P261 Avoid breathing vapours.  
P264 Wash hands thoroughly after handling.

**Safety Data Sheet**  
**according to Regulation (EC) No. 1907/2006 (REACH)**  
**according to Regulation (EU) 2020/878**

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P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves and eye/face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use extinguishing powder or sand to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Keep locked up.
P501	Dispose of contents/container to industrial incineration plant.

**Hazard components for labelling**

hexamethylene-di-isocyanate  
 HDI-homopolymers  
 Xylene  
 m-tolylidene diisocyanate  
 Aromatic polyisocyanate

**Supplemental hazard information**

EUH204 Contains isocyanates. May produce an allergic reaction.

**Use restriction according to REACH annex XVII, no.:**

Restrictions on use

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

**2.3. Other hazards**

No information available.

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

**3.2. Mixtures**

**Description** polyisocyanate hardener, containing the following hazardous substances:

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

EC No. CAS No. Index No.	REACH No. Designation classification: // Remark	weight-%
500-060-2 28182-81-2	01-2119488934-20 HDI-homopolymers Acute Tox. 4 H332 / Skin Sens. 1 H317 / STOT SE 3 H335	25 - 40
203-603-9 108-65-6 607-195-00-7	01-2119475791-29 2-methoxy-1-methylethyl acetate Flam. Liq. 3 H226 Substance with a common (EC) occupational exposure limit value.	25 - 40
215-535-7 1330-20-7 601-022-00-9	01-2119488216-32 Xylene Acute Tox. 4 H312 / Acute Tox. 4 H332 / Skin Irrit. 2 H315 / Eye Irrit. 2 H319 / STOT SE 3 H335 / STOT RE 2 H373 / Asp. Tox. 1 H304 / Flam. Liq. 3 H226	10 - 15
500-120-8 53317-61-6	Aromatic polyisocyanate Eye Irrit. 2 H319 / Skin Sens. 1 H317	5 - 10
202-849-4 100-41-4 601-023-00-4	01-2119489370-35 ethylbenzene Flam. Liq. 2 H225 / Acute Tox. 4 H332 / STOT RE 2 H373 / Asp. Tox. 1 H304	1 - 5

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205-500-4 141-78-6 607-022-00-5 212-485-8 822-06-0 615-011-00-1	01-2119475103-46 Ethyl acetate Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 / EUH066 01-2119457571-37 hexamethylene-di-isocyanate Acute Tox. 3 H331 / Eye Irrit. 2 H319 / STOT SE 3 H335 / Skin Irrit. 2 H315 / Resp. Sens. 1 H334 / Skin Sens. 1 H317 Specific concentration limit (SCL): Resp. Sens. 1 H334 $\geq$ 0.5 / Skin Sens. 1 H317 $\geq$ 0.5 Acute toxicity estimate (ATE): ATE (inhalation, vapour): 0.12 mg/L	1 - 5    0.1 - 0.5
247-722-4 26471-62-5 615-006-00-4	01-2119454791-34 m-tolylidene diisocyanate Acute Tox. 2 H330 / Skin Irrit. 2 H315 / Eye Irrit. 2 H319 / Resp. Sens. 1 H334 / Skin Sens. 1 H317 / Carc. 2 H351 / STOT SE 3 H335 / Aquatic Chronic 3 H412 Specific concentration limit (SCL): Resp. Sens. 1 H334 $\geq$ 0.1 Acute toxicity estimate (ATE): ATE (inhalation, vapour): 0.10 mg/L	0.01 - 0.05

## Additional information

Full text of classification: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

#### In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

#### Following skin contact

Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

#### After eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately.

#### Following ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately. Keep victim calm. Do NOT induce vomiting.

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

In all cases of doubt, or when symptoms persist, seek medical advice.

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

First Aid, decontamination, treatment of symptoms.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

alcohol resistant foam, carbon dioxide, Powder, spray mist, (water)

#### Unsuitable extinguishing media

strong water jet

### 5.2. Special hazards arising from the substance or mixture

Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

### 5.3. Advice for firefighters

Provide a conveniently located respiratory protective device. Cool closed containers that are near the source of the fire. Do not allow water used to extinguish fire to enter drains, ground or waterways.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

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Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

## 6.2. Environmental precautions

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

## 6.3. Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Use appropriate container to avoid environmental contamination. Fouled surfaces must be immediately cleaned with suitable solvents, Useable as such (flammable): water 45 vol.% ethanol or i-propanol 50 vol. % ammonia solution (density= 0.88) 5 vol.%

Alternative (non-flammable): sodium carbonate 5 vol.% water 95 vol.%.

Take up spilled residuals with the same agent and leave them for a few days in unclosed containers until there is no further reaction. Then, close the containers and dispose of them in accordance with the regulations for waste removal (refer to section 13).

## 6.4. Reference to other sections

Observe protective provisions (see section 7 and 8).

## SECTION 7: Handling and storage

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this mixture.

People who spray this preparation should have regular pulmonary function tests.

### 7.1. Precautions for safe handling

#### Advices on safe handling

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values. Only use the material in places where open light, fire and other flammable sources can be kept away. Electrical equipment must be protected meeting the accepted standard. Product may become electrostatically charged. Provide earthing of containers, equipment, pumps and ventilation facilities. Anti-static clothing including shoes are recommended. Floors must be electrically conductive. Be careful when opening used containers (excess pressure). Precautionary measures should be taken in order to reduce strain from humidity or water: CO<sub>2</sub> is formed which may produce excess pressure in closed containers. Keep away from heat sources, sparks and open flames. Use only spark proof tools. Avoid contact with skin, eyes and clothes. Do not inhale dusts, particulates and spray mist when using this preparation. Avoid respiration of swarf. When using do not eat, drink or smoke. Personal protection equipment: refer to section 8. Do not empty containers with pressure - no pressure vessel! Always keep in containers that correspond to the material of the original container. Follow the legal protection and safety regulations.

#### Further information

Vapours are heavier than air. Vapours form explosive mixtures with air.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks. Soils have to conform to the "Guidelines for avoidance of ignition hazards due to electrostatic charges (TRGS 727)".

#### Hints on joint storage

Keep away from strongly acidic and alkaline materials as well as oxidizers. Keep away from amines, alcohols and water.

#### Further information on storage conditions

Take care of instructions on label. Store in a well-ventilated and dry room at temperatures between 15 °C and 30 °C. Protect from heat and direct sunlight. Keep container tightly closed. Remove all sources of ignition. Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks.

### 7.3. Specific end use(s)

Observe technical data sheet. Observe instructions for use.

## SECTION 8: Exposure controls/personal protection

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this mixture.

People who spray this preparation should have regular pulmonary function tests.

### 8.1. Control parameters

#### Occupational exposure limit values:

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2-methoxy-1-methylethyl acetate  
Index No. 607-195-00-7 / EC No. 203-603-9 / CAS No. 108-65-6

WEL, TWA: 274 mg/m<sup>3</sup>; 50 ppm  
WEL, STEL: 548 mg/m<sup>3</sup>; 100 ppm  
Remark: (may be absorbed through the skin)

Xylene

Index No. 601-022-00-9 / EC No. 215-535-7 / CAS No. 1330-20-7

WEL, TWA: 220 mg/m<sup>3</sup>; 50 ppm  
WEL, STEL: 441 mg/m<sup>3</sup>; 100 ppm  
Remark: (may be absorbed through the skin)  
BMGV, TWA: 650 mmol/mol creatinine  
Remark: methyl hippuric acid; urine; end of exposure or end of shift

ethylbenzene

Index No. 601-023-00-4 / EC No. 202-849-4 / CAS No. 100-41-4

WEL, TWA: 441 mg/m<sup>3</sup>; 100 ppm  
WEL, STEL: 552 mg/m<sup>3</sup>; 125 ppm  
Remark: (may be absorbed through the skin)

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

WEL, TWA: 734 mg/m<sup>3</sup>; 200 ppm  
WEL, STEL: 1468 mg/m<sup>3</sup>; 400 ppm

## Additional information

TWA : Long-term occupational exposure limit value  
STEL : short-term occupational exposure limit value  
Ceiling : peak limitation

## DNEL:

Xylene

Index No. 601-022-00-9 / EC No. 215-535-7 / CAS No. 1330-20-7

DNEL long-term dermal (systemic), Workers: 212 mg/kg bw/day  
DNEL acute inhalative (local), Workers: 442 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 442 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Workers:  
DNEL long-term inhalative (systemic), Workers: 221 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 12,5 mg/kg bw/day  
DNEL long-term dermal (systemic), Consumer: 125 mg/kg bw/day  
DNEL acute inhalative (local), Consumer: 260 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Consumer: 260 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Consumer: 65,3 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Consumer: 65,3 mg/m<sup>3</sup>

ethylbenzene

Index No. 601-023-00-4 / EC No. 202-849-4 / CAS No. 100-41-4

DNEL long-term dermal (systemic), Workers: 180 mg/kg bw/day  
DNEL long-term inhalative (systemic), Workers: 77 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 1,6 mg/kg bw/day  
DNEL long-term inhalative (systemic), Consumer: 15 mg/m<sup>3</sup>

hexamethylene-di-isocyanate

Index No. 615-011-00-1 / EC No. 212-485-8 / CAS No. 822-06-0

DNEL acute inhalative (local), Workers: 0,07 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 0,035 mg/m<sup>3</sup>

Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

DNEL long-term dermal (systemic), Workers: 63 mg/kg  
DNEL acute inhalative (local), Workers: 1468 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 1468 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Workers: 734 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 734 mg/m<sup>3</sup>  
DNEL long-term oral (repeated), Consumer: 4,5 mg/kg

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DNEL long-term dermal (systemic), Consumer: 37 mg/kg bw/day  
DNEL acute inhalative (local), Consumer: 734 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Consumer: 734 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Consumer: 367 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Consumer: 367 mg/m<sup>3</sup>

#### 2-methoxy-1-methylethyl acetate

Index No. 607-195-00-7 / EC No. 203-603-9 / CAS No. 108-65-6

DNEL long-term oral (repeated), Workers: 1,67 mg/kg  
DNEL long-term dermal (systemic), Workers: 54,8 mg/kg  
DNEL long-term inhalative (systemic), Workers: 33 mg/m<sup>3</sup>

#### m-tolylidene diisocyanate

Index No. 615-006-00-4 / EC No. 247-722-4 / CAS No. 26471-62-5

DNEL acute inhalative (local), Workers: 0,14 mg/m<sup>3</sup>  
DNEL acute inhalative (systemic), Workers: 0,14 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Workers: 0,035 mg/m<sup>3</sup>  
DNEL long-term inhalative (systemic), Workers: 0,035 mg/m<sup>3</sup>

#### HDI-homopolymers

EC No. 500-060-2 / CAS No. 28182-81-2

DNEL acute inhalative (local), Workers: 1 mg/m<sup>3</sup>  
DNEL long-term inhalative (local), Workers: 0,5 mg/m<sup>3</sup>

#### **PNEC:**

##### Xylene

Index No. 601-022-00-9 / EC No. 215-535-7 / CAS No. 1330-20-7

PNEC aquatic, freshwater: 0,327 mg/L  
PNEC aquatic, marine water: 0,327 mg/L  
PNEC sediment, freshwater: 12,46 mg/kg  
PNEC sediment, marine water: 12,46 mg/kg  
PNEC sewage treatment plant (STP): 6,58 mg/L  
soil: 2,31 mg/kg

##### ethylbenzene

Index No. 601-023-00-4 / EC No. 202-849-4 / CAS No. 100-41-4

PNEC aquatic, freshwater: 0,1 mg/L  
PNEC aquatic, marine water: 0,01 mg/L  
PNEC sediment, freshwater: 13,7 mg/kg  
PNEC sediment, marine water: 1,37 mg/kg  
PNEC, soil: 2,68 mg/kg  
PNEC sewage treatment plant (STP): 9,6 mg/L

##### Ethyl acetate

Index No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

PNEC aquatic, freshwater: 0,24 mg/L  
PNEC aquatic, marine water: 0,024 mg/L  
PNEC aquatic, intermittent release: 1,65 mg/L  
PNEC sediment, freshwater: 1,15 mg/kg  
PNEC sediment, marine water: 0,115 mg/kg  
PNEC, soil: 0,148 mg/kg  
PNEC sewage treatment plant (STP): 650 mg/L  
PNEC Secondary Poisoning: 200 mg/kg food

#### 2-methoxy-1-methylethyl acetate

Index No. 607-195-00-7 / EC No. 203-603-9 / CAS No. 108-65-6

PNEC aquatic, freshwater: 0,635 mg/cm<sup>3</sup>  
PNEC aquatic, marine water: 0,0635 mg/cm<sup>3</sup>  
PNEC aquatic, intermittent release: 6,35 mg/cm<sup>3</sup>  
PNEC sediment, freshwater: 3,29 mg/cm<sup>3</sup>  
PNEC sediment, marine water: 0,329 mg/cm<sup>3</sup>  
PNEC, soil: 0,29 mg/m<sup>3</sup>  
PNEC sewage treatment plant (STP): 100 mg/cm<sup>3</sup>

#### m-tolylidene diisocyanate

Index No. 615-006-00-4 / EC No. 247-722-4 / CAS No. 26471-62-5

PNEC aquatic, freshwater: 0,013 mg/L

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PNEC aquatic, marine water: 0,0013 mg/L  
PNEC, soil: > 1 mg/kg

HDI-homopolymers

EC No. 500-060-2 / CAS No. 28182-81-2

PNEC aquatic, freshwater: 0,127 mg/L

PNEC aquatic, marine water: 0,0127 mg/L

PNEC sediment, freshwater: 266700 mg/kg Sediment dry weight

PNEC sediment, marine water: 266700 mg/kg Sediment dry weight

PNEC, soil: 53182 mg/kg

PNEC sewage treatment plant (STP): 38,28 mg/L

## 8.2. Exposure controls

Provide good ventilation. This can be achieved with local or room suction. When spraying, wear self-contained breathing apparatus. For other tasks a suitable respiratory system must be used, if local and room suction is not sufficient for keeping aerosol and solvent vapour concentration below the exposure limit values. (refer to Personal protection equipment.)

### Personal protection equipment

#### **Respiratory protection**

If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Use only respiratory protection equipment with CE-symbol including four digit test number.

#### **Hand protection**

For prolonged or repeated handling the following glove material must be used: NBR (Nitrile rubber)

Thickness of the glove material > 0,4 mm ; Breakthrough time: > 480 min.

Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles EN ISO 374

Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

#### **Eye/face protection**

Wear closely fitting protective glasses in case of splashes.

#### **Body protection**

Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

#### **Protective measures**

After contact clean skin thoroughly with water and soap or use appropriate cleanser.

#### **Environmental exposure controls**

Do not allow to enter into surface water or drains. See section 7. No additional measures necessary.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**Physical state:**

**Liquid**

**Colour:**

**refer to label**

**Odour:**

**characteristic**

**Odour threshold:**

**not applicable**

**Melting point/freezing point:**

**not applicable**

**Initial boiling point and boiling range:**

**139 °C**

Source: Xylene

**Flammability**

**Flammable liquid and vapour.**

**Lower and upper explosion limit**

**Lower explosion limit:**

**1.17 Vol-%**

**Upper explosion limit:**

**11.5 Vol-%**

Source: Ethyl acetate

**Flash point:**

**25 °C**

Method: DIN 53213

**Auto-ignition temperature:**

**333 °C**

Source: 2-methoxy-1-methylethyl acetate

**Decomposition temperature:**

**not applicable**

**pH at 20 °C:**

**not applicable**

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<b>Cinematic viscosity (40°C):</b>	<b>&lt; 80 mm<sup>2</sup>/s</b>
<b>Viscosity: at 20 °C:</b>	<b>13 - 14 sec DIN 4 mm</b>
<b>Solubility(ies):</b>	
<b>Water solubility at 20 °C:</b>	<b>insoluble</b>
<b>Partition coefficient: n-octanol/water:</b>	<b>see section 12</b>
<b>Vapour pressure at 20 °C:</b>	<b>8 mbar</b> Source: Xylene
<b>Density and/or relative density:</b>	
<b>Density at 20 °C:</b>	<b>1.03 g/cm<sup>3</sup></b>
<b>Relative vapour density:</b>	<b>not applicable</b>
<b>particle characteristics:</b>	<b>not applicable</b>
<b>9.2. Other information</b>	
<b>Solid content:</b>	<b>47 weight-%</b>
<b>solvent content:</b>	
<b>Organic solvents:</b>	<b>53 weight-%</b>
<b>Water:</b>	<b>0 weight-%</b>

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with water, forming carbon dioxide, producing bursting hazard in closed containers due to build-up of pressure.

### 10.2. Chemical stability

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

### 10.3. Possibility of hazardous reactions

Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions. Reacts with water, forming carbon dioxide, producing bursting hazard in closed containers due to build-up of pressure.

### 10.4. Conditions to avoid

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7. Hazardous decomposition byproducts may form with exposure to high temperatures.

### 10.5. Incompatible materials

not applicable

### 10.6. Hazardous decomposition products

Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

## SECTION 11: Toxicological information

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

#### Acute toxicity

Harmful if inhaled.

#### Xylene

oral, LD50, Rat, male: 5,523 mg/kg

Method: EU Test B.1

inhalative (vapours), LC50, Rat, male: 6700 ppm (4 h)

#### ethylbenzene

oral, LD50, Rat: 3,5 mg/kg

dermal, LD50, Rabbit: 15,4 mg/kg

#### hexamethylene-di-isocyanate

oral, LD50, Rat: 746 mg/kg

Method: OECD 401

dermal, LD50, Rat: > 7000 mg/kg

Method: OECD 402

dermal, LD50, Rabbit: 570 mg/kg

inhalative (vapours), LC50, Rat: 0,124 mg/L (4 h)



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Method: OECD 403  
inhalative (vapours), LC50, Mouse: 1,57 mg/L

**Ethyl acetate**

oral, LD50, Rat: 5620 mg/kg  
dermal, LD50, Rabbit: > 20000 mg/kg  
oral, LD50, Rabbit: 4934  
Method: OECD 401  
inhalative (vapours), LC0, Rat: 29,3 (4 h)  
inhalative (vapours), LCLo, Rat: > 6000 ppm (6 h)  
inhalative (vapours), LD50, Rabbit, male: > 2000 mg/kg

**2-methoxy-1-methylethyl acetate**

dermal, LD50, Rabbit: > 2000 mg/kg

**m-tolylidene diisocyanate**

oral, LD50, Rat: 4130 mg/kg  
dermal, LD50, Rat: > 9400 mg/kg  
dermal, LD50, Rabbit: > 12,2 mg/kg  
inhalative (vapours), LC50, Rat: 0,107 mg/L (4 h)  
inhalative (vapours), LCLo, Rat: 4,3 mg/L (6 h)  
inhalative (vapours), LD50, Mouse: > 2000 mg/kg  
Method: OECD 401  
(National Toxicology Program); Acute Toxicity (inhalative), Category 2 (vapour); Fatal if inhaled.

**HDI-homopolymers**

dermal, LD50, Rat: > 2000 mg/kg  
Method: OECD 402  
inhalative (vapours), LC50, Rat: 543 mg/L (4 h)  
Method: OECD 403  
inhalative (vapours), LC50, Rat, female: 390 mg/m<sup>3</sup> (4 h)  
Method: OECD 403

**Aromatic polyisocyanate**

oral, LD50, Rat: > 5000 mg/kg  
inhalative (vapours), LC50, Rat: > 2,462 mg/L (4 h)

**Skin corrosion/irritation; Serious eye damage/eye irritation**

Causes skin irritation.

Causes serious eye irritation.

**ethylbenzene**

Skin, Rabbit (24 h)  
Causes mild skin irritation.  
eyes, Rabbit  
Causes slight eye irritation

**hexamethylene-di-isocyanate**

Skin (4 h)  
Method: OECD 404  
Corrosive  
eyes  
Method: OECD 405  
Causes serious eye irritation.; Causes serious eye damage.

**Ethyl acetate**

Skin (4 h)  
No skin irritation (rabbit). Degreases the skin and makes it dry and rough. Prolonged or repeated skin contact can lead to dermatitis.  
eyes  
Moderate eye irritation (rabbit).

**2-methoxy-1-methylethyl acetate**

Skin (4 h)  
Method: OECD 404  
Not to be classified as skin etching/irritant.  
eyes  
Not to be classified as severe eye damage or eye irritation.

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m-tolyldiene diisocyanate

Skin (4 h)

Causes skin irritation.

eyes

Risk of corneal clouding; Causes serious eye irritation.

HDI-homopolymers

Skin, Rabbit (4 h)

Method: OECD 404

mild irritant.

eyes, Rabbit

Method: OECD 405

mild irritant.

Aromatic polyisocyanate

Skin (4 h)

No data available

eyes

No data available

## Respiratory or skin sensitisation

May cause an allergic skin reaction.

hexamethylene-di-isocyanate

Skin, Guinea pig: ; Evaluation positive

Method: OECD 406

Respiratory system, Guinea pig: ; Evaluation positive

Method: OECD 406

Ethyl acetate

Skin, Guinea pig: ; Evaluation not sensitising.

Method: OECD 406

Maximization test

2-methoxy-1-methylethyl acetate

Skin: ; Evaluation not sensitising.

Method: OECD 406

Respiratory system:

No data available

m-tolyldiene diisocyanate

Skin, Guinea pig: ; Evaluation positive

May cause an allergic skin reaction.; (IUCLID)

Respiratory system:

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

HDI-homopolymers

Skin, Guinea pig: ; Evaluation sensitising

Method: OECD 406

Magnuson/Klingmann test

Respiratory system, Guinea pig: ; Evaluation sensitising

Method: OECD 406

Magnuson/Klingmann test

Aromatic polyisocyanate

Skin:

No data available

Respiratory system:

No data available

## CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

ethylbenzene

Germ cell mutagenicity; Evaluation negative

Hamster; Mouse; ovaries

Carcinogenicity; Evaluation Carc. Cat. 2

Method: Group II B (IARC): Possible carcinogenic to humans (ethylbenzene)

human

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hexamethylene-di-isocyanate

Germ cell mutagenicity

Mutagenicity (mammalian cell test): chromosome aberration. Ovarian cells of Chinese hamster Result: negative

Carcinogenicity

Showed no carcinogenic effect in animal experiments.

Reproductive toxicity

No effect on fertility in animal studies.

Genotoxicity in vivo; Evaluation negative

Method: OECD 474

Mouse; Inhalation; bone marrow

Genotoxicity in vitro; Evaluation negative

Method: Ames test

Salmonella typhimurium

teratogenicity

Did not show any fruit-damaging effect in animal experiments.

Ethyl acetate

Germ cell mutagenicity; Evaluation In vitro tests showed no mutagenic effects.

Carcinogenicity; Evaluation Didn't show any carcinogenic effects in animal tests.

Reproductive toxicity; Evaluation No reproductive toxicity

Genotoxicity in vitro; Evaluation negative

(Chromosome aberration test in vitro; CHO (Chinese hamster ovaries) cells; with and without metabolic activation) (OECD Test Guideline 473).; (Back mutation test on bacteria; Salmonella typhimurium) (OECD test guideline 471).

Genotoxicity in vivo; Evaluation negative

Method: OECD 474

(Chromosome aberration test in vivo; Chinese hamster, male and female) (Oral).

2-methoxy-1-methylethyl acetate

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Lactation

No data available

m-tolylidene diisocyanate

Germ cell mutagenicity; Evaluation negative

Genotoxicity in vivo; Mutagenicity (mammalian cell test): Micronucleus.; (National Toxicology Program)

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

Lactation

No data available

Genotoxicity in vitro; Evaluation positive

Ames Test; Salmonella typhimurium; (National Toxicology Program)

HDI-homopolymers

Germ cell mutagenicity

The product showed no mutagenic properties in bacteria and mammalian cell cultures.

Carcinogenicity

No data available

Reproductive toxicity

No data available

Aromatic polyisocyanate

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

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## STOT-single exposure; STOT-repeated exposure

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

### Xylene

Specific target organ toxicity (repeated exposure)

Liver and kidney damage; central nervous system

Causes damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

Liver and kidney damage; central nervous system; hearing organs

### ethylbenzene

Repeated dose toxicity, Rat: 75 mg/kg

Method: OECD 407

RTECS-no.: DA0700000

Depression of central nervous system

movement disorders; headache; Vomiting

### hexamethylene-di-isocyanate

Specific target organ toxicity (single exposure)

May cause respiratory irritation.; Target organs: Respiratory system

Specific target organ toxicity (repeated exposure)

No data available

### Ethyl acetate

Specific target organ toxicity (single exposure)

Inhalation; central nervous system; May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure)

No data available

Repeated dose toxicity: 900 mg/kg

Method: NOAEL

Repeated dose toxicity, Rat: 3600 mg/kg (92 d)

Method: LOAEL

oral

Repeated dose toxicity, Rat: 350 ppm (94 d)

Method: NOEC

inhalative (vapours); 5 days/week

Repeated dose toxicity, Rat: 350 ppm (94 d)

Method: LOEC:

inhalative (vapours); 5 days/week

### 2-methoxy-1-methylethyl acetate

Specific target organ toxicity (single exposure)

No data available

Specific target organ toxicity (repeated exposure)

No data available

### m-tolylidene diisocyanate

Specific target organ toxicity (single exposure)

May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

No data available

### HDI-homopolymers

Specific target organ toxicity (single exposure) Evaluation May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) Evaluation After repeated recording, the local irritant effect is in the foreground.

### Aromatic polyisocyanate

Specific target organ toxicity (single exposure)

No data available

Specific target organ toxicity (repeated exposure)

No data available

## Aspiration hazard

Ethyl acetate

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Aspiration hazard  
no classification

2-methoxy-1-methylethyl acetate  
Aspiration hazard  
Not to be classified as aspirational.

m-tolylidene diisocyanate  
Aspiration hazard  
No data available

HDI-homopolymers  
Aspiration hazard; Evaluation No danger of aspiration to be assumed.

Aromatic polyisocyanate  
Aspiration hazard  
No data available

### Practical experience/human evidence

Inhaling of solvent components above the MWC-value can lead to health damage, e.g. irritation of the mucous membrane and respiratory organs, as well as damage to the liver, kidneys and the central nerve system. Indications for this are: headache, dizziness, fatigue, amyosthenia, drowsiness, in serious cases: unconsciousness. Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage. Because of the isocyanate components' properties of this and with consideration of similar preparations the following applies: This mixture may cause acute irritation and/or sensitization of airways which lead to tightness in thorax, short-breath and asthmatic complaints. After sensitization even concentrations below the exposure limit values may cause asthma. Repeated inhaling can lead to permanent illness of the respiratory tract.

### Overall assessment on CMR properties

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

#### 11.2. Information on other hazards

##### Endocrine disrupting properties

No information available.

## SECTION 12: Ecological information

Classification according to Regulation (EC) No 1272/2008 [CLP]  
Do not allow to enter into surface water or drains.

#### 12.1. Toxicity

##### Xylene

Fish toxicity, LC50, fish: 2,6 mg/L (96 h)  
Method: OECD 203  
Algae toxicity, ErC50, Pseudokirchneriella subcapitata: 4,6 mg/L (72 h)  
Method: OECD 201  
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 4,6 mg/L (72 h)  
Method: OECD 201  
Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout) (96 h)  
Method: OECD 203  
Daphnia toxicity, IC50, Daphnia magna: 1 mg/L (24 h)  
Method: OECD 202  
Algae toxicity, EC50, Selenastrum capricornutum: 2,2 mg/L (73 h)  
Method: OECD 201  
Daphnia toxicity, growth test (Eb-Cx) 10%“, Daphnia magna: 1,91 mg/L (21 d)  
Method: OECD 211  
Bacteria toxicity, NOEC, Activated sludge: 16 mg/L (28 t)  
Method: OECD 301 F

##### ethylbenzene

Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): 4,2 mg/L (96 h)  
Daphnia toxicity, EC50, Daphnia magna (Big water flea) 1,8 - 2,4 mg/L (48 h)  
Algae toxicity, EC50, Skeletonema costatum: 4,9 mg/L (72 h)  
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 7,2 mg/L (48 h)  
Shellfish Toxicity, LC50, Mysidopsis bahia: > 5,2 mg/L (48 h)  
Toxicity of Microorganisms, EC50, microorganisms: 96 mg/L (24 h)

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## hexamethylene-di-isocyanate

Fish toxicity, LC50, Danio rerio (zebrafish): 22 mg/L (96 h)  
Algae toxicity, ErC50, Desmodesmus subspicatus: > 77,4 mg/L (72 h)  
Method: OECD 201  
accompanying analysis: yes  
growth inhibition, NOEC, Desmodesmus subspicatus: 11,7 mg/L (72 h)  
Method: OECD 201  
accompanying analysis: yes  
Bacteria toxicity, EC0, Pseudomonas putida: 100 mg/L (24 h)  
(IUCLID)  
respiratory inhibition, EC50, Activated sludge: 842 mg/L (3 h)  
Method: OECD 209

## Ethyl acetate

Fish toxicity, LC50, Pimephales promelas (fathead minnow): 230 mg/L (96 h)  
Flow test; US-EPA  
Daphnia toxicity, EC50, Daphnia magna: 610 mg/L (48 h)  
Daphnia toxicity, EC50, Daphnia cucullata (Helmet water flea): 165 mg/L (48 h)  
Algae toxicity, EC50, Desmodesmus subspicatus: 5600 mg/L (48 h)  
Method: DIN 38412  
Static test; end; Rate of growth  
Algae toxicity, NOEC, Desmodesmus subspicatus: > 100 mg/L (72 h)  
Method: OECD 201  
Static test; end; Rate of growth  
Bacteria toxicity, EC10, Photobacterium phosphoreum: 1650 mg/L (15 min.)  
Static test; end; Rate of growth  
Bacteria toxicity, EC50, Photobacterium phosphoreum: 5870 mg/L (15 min.)  
Static test; end; Rate of growth

## m-tolylidene diisocyanate

Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): 133 mg/L (96 h)  
Method: OECD 203  
(IUCLID)  
Daphnia toxicity, EC50, Daphnia magna (Big water flea): 12,5 mg/L (48 h)  
Method: OECD 202  
Bacteria toxicity, EC50, Activated sludge: > 100 mg/L (3 h)  
Method: OECD 209

## HDI-homopolymers

Fish toxicity, LC50, Danio rerio (zebrafish): > 100 mg/L (96 h)  
Method: OECD 203  
Daphnia toxicity, EC50, Daphnia magna: > 100 mg/L (48 h)  
Method: OECD 202  
Algae toxicity, IC50, Scenedesmus subspicatus: > 100 mg/L (72 h)  
Method: OECD 201  
Bacteria toxicity, EC50, Activated sludge: 1000 mg/L (3 h)  
Method: OECD 209

## Long-term Ecotoxicity

### Xylene

Algae toxicity, ErC50, Pseudokirchneriella subcapitata: 4,36 mg/L (73 h)  
Method: OECD 201  
Fish toxicity, NOEC, fish: > 1,3 mg/L (56 d)  
Daphnia toxicity, NOEC, Daphnia pulex (water flea): 1,17 mg/L (7 d)  
Method: US EPA 600/4-91-003  
Daphnia toxicity, EL50, Daphnia magna: 2,9 mg/L (21 d)  
Method: OECD 211  
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 2,2 mg/L (73 h)  
Method: OECD 201  
Daphnia toxicity, LOEC, Daphnia magna (Big water flea): 3,16 mg/L (21 d)  
Method: OECD 211  
Algae toxicity, growth test (Eb-Cx) 10% , Pseudokirchneriella subcapitata: 0,72 mg/L (73 h)  
Method: OECD 201

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ethylbenzene

Daphnia toxicity, NOEC, Ceriodaphnia dubia (Wasserfloh): 0,96 mg/L (7 d)

Daphnia toxicity, LC50, Ceriodaphnia dubia (Wasserfloh): 3,6 mg/L (7 d)

Bacteria toxicity, EC50, Nitrosomonas sp: 96 mg/L (24 h)

Algae toxicity, NOEC, Pseudokirchneriella subcapitata: 3,4 mg/L (96 h)

Daphnia toxicity, LOEC:, Ceriodaphnia dubia (Wasserfloh): 1,7 mg/L (7 d)

Ethyl acetate

Fish toxicity, NOEC, Pimephales promelas (fathead minnow): > 9,65 mg/L (32 d)

Method: OECD 211

semistatic

## 12.2. Persistence and degradability

Xylene

Persistence and degradability:

Method: Rapid photochemical oxidation in air

Biodegradation: 98 percent (28 d)

Readily biodegradable (according to OECD criteria)

ethylbenzene

Biodegradation, aerobic: 70 - 80 percent (28 d); Evaluation Readily biodegradable (according to OECD criteria)

hexamethylene-di-isocyanate

Biodegradation: < 0,0001 percent (28 d); Evaluation Poorly eliminated from water.

Method: OECD 302C

Ethyl acetate

Persistence and degradability: Evaluation The product evaporates easily from the water surface.

Biodegradation: 79 percent (20 d); Evaluation Readily biodegradable (according to OECD criteria).

Method: OECD 301D

Related to: Biochemical oxygen demand

2-methoxy-1-methylethyl acetate

Persistence and degradability:

No data available

Biodegradation: Evaluation Readily biodegradable (according to OECD criteria).

m-tolylidene diisocyanate

Biodegradation: 9 percent (28 d)

Method: OECD 302C

Poorly eliminated from water.

HDI-homopolymers

Biodegradation: Evaluation Not readily biodegradable (according to OECD criteria)

Method: OECD 301C

Aromatic polyisocyanate

Biodegradation:

No data available

## 12.3. Bioaccumulative potential

Xylene

Distribution coefficient n-octanol/water (log KOW): 3,49

ethylbenzene

Distribution coefficient n-octanol/water (log KOW): 3,6

Ethyl acetate

Partition coefficient: n-octanol/water:

Distribution coefficient n-octanol/water (log KOW): 0,68 ; Evaluation Bioaccumulation is not to be expected.

2-methoxy-1-methylethyl acetate

Distribution coefficient n-octanol/water (log KOW): 1,2

m-tolylidene diisocyanate

Distribution coefficient n-octanol/water (log KOW):

No data available

HDI-homopolymers

Distribution coefficient n-octanol/water (log KOW):

No data available

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Aromatic polyisocyanate

Distribution coefficient n-octanol/water (log KOW):

No data available

#### Bioconcentration factor (BCF)

Ethyl acetate

Bioconcentration factor (BCF): 30

#### 12.4. Mobility in soil

Xylene

soil: Evaluation Absorbs slowly into the soil

Water: Evaluation Floats on the water

Ethyl acetate

Water: Evaluation Swims on water and does not dissolve.

Air: Evaluation Slightly volatile, quickly distributed in the air.

m-tolylidene diisocyanate

soil:

No data available

HDI-homopolymers

soil:

No data available

Aromatic polyisocyanate

soil:

No data available

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

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

#### 12.6. Endocrine disrupting properties

No information available.

#### 12.7. Other adverse effects

No information available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Appropriate disposal / Product

##### Recommendation

Do not allow to enter into surface water or drains. Handle contaminated packages in the same way as the substance itself. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

##### List of proposed waste codes/waste designations in accordance with EWC

080111\* Waste paint and varnish containing organic solvents or other dangerous substances

\*Hazardous waste according to Directive 2008/98/EC (waste framework directive).

##### Appropriate disposal / Package

##### Recommendation

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

### SECTION 14: Transport information

#### 14.1. UN number or ID number

UN 1263

#### 14.2. UN proper shipping name

Land transport (ADR/RID):

Paint

Sea transport (IMDG):

PAINT

Air transport (ICAO-TI / IATA-DGR):

Paint

#### 14.3. Transport hazard class(es)

3

#### 14.4. Packing group

III

#### 14.5. Environmental hazards



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Land transport (ADR/RID) not applicable  
Marine pollutant not applicable

#### 14.6. Special precautions for user

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.

Advices on safe handling: see parts 6 - 8

#### Further information

##### Land transport (ADR/RID)

Tunnel restriction code D/E

##### Sea transport (IMDG)

EmS-No. F-E, S-E

#### 14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according IBC - Code.

### SECTION 15: Regulatory information

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

##### EU legislation

##### Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive]

VOC-value (in g/L): 546

##### Use restriction according to REACH annex XVII, no.:

Restrictions on use

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

##### National regulations

##### Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive 92/85/EEC or stricter national regulations, if applicable.

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC) or stricter national regulations, if applicable.

#### 15.2. Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

EC No. CAS No.	Designation	REACH No.
500-060-2 28182-81-2	HDI-homopolymers	01-2119488934-20
203-603-9 108-65-6	2-methoxy-1-methylethyl acetate	01-2119475791-29
215-535-7 1330-20-7	Xylene	01-2119488216-32
202-849-4 100-41-4	ethylbenzene	01-2119489370-35
205-500-4 141-78-6	Ethyl acetate	01-2119475103-46
212-485-8 822-06-0	hexamethylene-di-isocyanate	01-2119457571-37
247-722-4 26471-62-5	m-tolyldiene diisocyanate	01-2119454791-34

### SECTION 16: Other information

#### Full text of classification in section 3:

Acute Tox. 4 / H332  
Skin Sens. 1 / H317  
STOT SE 3 / H335  
Flam. Liq. 3 / H226  
Acute Tox. 4 / H312

Acute toxicity (inhalative)  
Respiratory or skin sensitisation  
STOT-single exposure  
Flammable liquids  
Acute toxicity (dermal)

Harmful if inhaled.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
Flammable liquid and vapour.  
Harmful in contact with skin.

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Skin Irrit. 2 / H315	Skin corrosion/irritation	Causes skin irritation.
Eye Irrit. 2 / H319	Serious eye damage/eye irritation	Causes serious eye irritation.
STOT RE 2 / H373	STOT-repeated exposure	May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
Asp. Tox. 1 / H304	Aspiration hazard	May be fatal if swallowed and enters airways.
Flam. Liq. 2 / H225	Flammable liquids	Highly flammable liquid and vapour.
STOT SE 3 / H336	STOT-single exposure	May cause drowsiness or dizziness.
Acute Tox. 3 / H331	Acute toxicity (inhalative)	Toxic if inhaled.
Resp. Sens. 1 / H334	Respiratory or skin sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Acute Tox. 2 / H330	Acute toxicity (inhalative)	Fatal if inhaled.
Carc. 2 / H351	Carcinogenicity	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
Aquatic Chronic 3 / H412	Hazardous to the aquatic environment	Harmful to aquatic life with long lasting effects.

**Classification procedure**

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Flam. Liq. 3	Flammable liquids	On basis of test data.
Acute Tox. 4	Acute toxicity (inhalative)	Calculation method.
Skin Irrit. 2	Skin corrosion/irritation	Calculation method.
Eye Irrit. 2	Serious eye damage/eye irritation	Calculation method.
Skin Sens. 1	Respiratory or skin sensitisation	Calculation method.
STOT SE 3	STOT-single exposure	Calculation method.
STOT RE 2	STOT-repeated exposure	Calculation method.

**Abbreviations and acronyms**

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL	Occupational Exposure Limit Value
BLV	Biological Limit Value
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	Carcinogenic, Mutagenic and Reprotoxic
DIN	German Institute for Standardization / German industrial standard
DNEL	Derived No-Effect Level
EAKV	European Waste Catalogue Directive
EC	Effective Concentration
EC	European Community
EN	European Standard
IATA-DGR	International Air Transport Association – Dangerous Goods Regulations
IBC Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI	International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG Code	International Maritime Code for Dangerous Goods
ISO	International Organization for Standardization
LC	Lethal Concentration
LD	Lethal Dose
MARPOL	Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Cooperation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	very persistent and very bioaccumulative

**Further information**

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

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)  
according to Regulation (EU) 2020/878

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EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in section 1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.