

SAFETY DATA SHEET according with (CE) .1272/2008

ENDURECEDOR MAXIPUR B

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****ENDURECEDOR MAXIPUR B****1.2 Relevant identified uses of the substance or mixture and uses advised against****Use:**

Hardener for coating materials or adhesives for industrial and trade applications

1.3 Details of the supplier of the safety data sheet

Company : PINTURAS KILNHER
C/LLanterners 44.P.I. La Figuera
46394 Alacuas – Valencia- España

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E-mail : kilnher@kilnher.com

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Flammable liquids, Category 3 (H226)
Acute toxicity, Inhalative, Category 4 (H332)
Sensitization of the skin, Category 1 (H317)
Specific target organ toxicity (single exposure), Category 3 (H336)
Specific target organ toxicity (single exposure), Category 3 (H335)

2.2 Label elements

Warning

Hazardous components which must be listed on the label

Hexamethylene-1,6-diisocyanate Homopolymer

Hazard statements:

H226 Flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements:

210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P403 + P235 Store in a well-ventilated place. Keep cool.

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Supplementary hazardous characteristics and labeling elements:

EUH066 Repeated exposure may cause skin dryness or cracking.
EUH204 Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

Risk of absorption through the skin of 1-methoxypropylacetate-2.

SECTION 3: Composition/information on ingredients

Type of product: Mixture

3.2 Mixtures

aliphatic polyisocyanate

ca. 50 % in n-butyl acetate/1-methoxypropylacetate-2 33 : 17

Hazardous components

Hexamethylene-1,6-diisocyanate Homopolymer

Concentration [wt.-%]: ca. 50

CAS-No.: 28182-81-2

Classification (1272/2008/CE): Acute Tox. 4 Inhalative H332 Skin Sens. 1 H317 STOT SE 3 H335

n-Butyl acetate

Concentration [wt.-%]: ca. 33

EC-No.: 204-658-1

REACH Registration Number: 01-2119485493-29

CAS-No.: 123-86-4

Classification (1272/2008/CE): Flam. Liq. 3 H226 STOT SE 3 H336

Consideration of human health is not necessary according to REACH Regulation (EC) No 1907/2006 art. 14(4).

WEL substance

2-methoxy-1-methylethyl acetate

Concentration [wt.-%]: ca. 17

Index-No.: 607-195-00-7

EC-No.: 203-603-9

REACH Registration Number: 01-2119475791-29

CAS-No.: 108-65-6

Classification (1272/2008/CE): Flam. Liq. 3 H226

This contains:

Hexamethylene-1,6-diisocyanate

Concentration [wt.-%]: < 0.25

Index-No.: 615-011-00-1

REACH Registration Number: 01-2119457571-37-0000, 01-2119457571-37-0005, 01-2119457571-37-0006

CAS-No.: 822-06-0

Classification (1272/2008/CE): Acute Tox. 4 Oral H302 Acute Tox. 1 Inhalative H330 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Resp. Sens. 1 H334 Skin Sens. 1 H317 STOT SE 3 H335

Specific threshold concentration (GHS):

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Resp. Sens. 1	H334	>= 0.5 %
Skin Sens. 1	H317	>= 0.5 %

Exposure scenarios are not required for the impurities of the substance according to article 3(1) of Regulation (EC) No 1907/2006 mentioned above.

Candidate List of Substances of Very High Concern for Authorisation

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Take off all contaminated clothing immediately.

If inhaled: Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.

In case of skin contact: In case of skin contact wash affected areas thoroughly with soap and plenty of water. Consult a doctor in the event of a skin reaction.

In case of eye contact: Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.

If swallowed: DO NOT induce the patient to vomit, medical advice is required.

4.2 Most important symptoms and effects, both acute and delayed

Notes to physician: Basic first aid, decontamination, symptomatic treatment.

4.3 Indication of any immediate medical attention and special treatment needed

Therapeutic measures: No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Carbon dioxide (CO₂), Foam, extinguishing powder, in cases of larger fires, water spray should be used.

Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

5.3 Advice for fire-fighters

During fire-fighting respirator with independent air-supply and airtight garment is required.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Put on protective equipment (see section 8). Keep away from sources of ignition. Ensure adequate

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ventilation/exhaust extraction. Keep unauthorized persons away.

6.2 Environment related measures

Do not allow to escape into waterways, wastewater or soil.

6.3 Methods and material for containment and cleaning up

Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO₂!). Keep damp in a safe ventilated area for several days.

6.4 Reference to other sections

For further disposal measures see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide sufficient air exchange and/or exhaust in work rooms. Exhaust ventilation necessary if product is sprayed.

The threshold limit values noted in section 8 must be monitored. In all areas where isocyanate aerosols and/or vapor concentrations are produced in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product

Explosion protection required.

The personal protective measures described in section 8 must be observed. The precautions required in the handling of solvents and isocyanates must be taken. Avoid contact with skin and eyes and the inhalation of vapor.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Take off all contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Keep container dry and tightly closed in a cool and well ventilated place. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.

Storage class (TRGS 510) : 3: Flammable liquids

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

UK Workplace Exposure Limits (WEL), per EH40 document (Health & Safety Executive). If no UK value exists, EU exposure limits given where available.

8.1 Control parameters

Components with workplace control parameters

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
n-Butyl acetate	123-86-4	EH40 WEL	STEL	200 ppm 966 mg/m ³		

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n-Butyl acetate	123-86-4	EH40 WEL	TWA	150 ppm 724 mg/m ³		
2-methoxy-1-methylethyl acetate	108-65-6	EH40 WEL	STEL	100 ppm 548 mg/m ³		
2-methoxy-1-methylethyl acetate	108-65-6	EH40 WEL				Dermal absorption possible
2-methoxy-1-methylethyl acetate	108-65-6	EH40 WEL	TWA	50 ppm 274 mg/m ³		
2-methoxy-1-methylethyl acetate	108-65-6	EU ELV	TWA	50 ppm 275 mg/m ³		Indicative
2-methoxy-1-methylethyl acetate	108-65-6	EU ELV	STEL	100 ppm 550 mg/m ³		Indicative
2-methoxy-1-methylethyl acetate	108-65-6	EU ELV				Dermal absorption possible
Hexamethylene-1,6-diisocyanate	822-06-0	EH40 WEL	STEL	0.07 mg/m ³		, measured as NCO
Hexamethylene-1,6-diisocyanate	822-06-0	EH40 WEL	TWA	0.02 mg/m ³		, measured as NCO

Exposition assessment value (EBW) per TGRS 430:Polyisocyanate content (HDI oligomers and/or prepolymers) 50 %. Use an exposition assessment value of 0,5 mg/m³.

Derived No Effect Level (DNEL)

n-Butyl acetate

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term systemic effects	480 mg/m ³	
Workers	Inhalation	Acute systemic effects	960 mg/m ³	
Workers	Inhalation	Long-term local effects	480 mg/m ³	
Workers	Inhalation	Acute local effects	960 mg/m ³	
Workers	Dermal	Long-term systemic effects		Not derived
Workers	Dermal	Acute systemic effects		Not derived
Workers	Dermal	Long-term local effects		Not derived
Workers	Dermal	Acute local effects		Not derived
Consumers	Inhalation	Long-term systemic effects	102.34 mg/m ³	
Consumers	Inhalation	Acute systemic effects	859.7 mg/m ³	
Consumers	Inhalation	Long-term local effects	102.34 mg/m ³	
Consumers	Inhalation	Acute local effects	859.7 mg/m ³	
Consumers	Dermal	Long-term systemic effects		Not derived
Consumers	Dermal	Acute systemic effects		Not derived
Consumers	Dermal	Long-term local effects		Not derived

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Consumers	Dermal	Acute local effects		Not derived
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2-methoxy-1-methylethyl acetate

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term systemic effects	275 mg/m ³	
Workers	Dermal	Long-term systemic effects	153.5 mg/kg bw/day	
Consumers	Inhalation	Long-term systemic effects	33 mg/m ³	
Consumers	Dermal	Long-term systemic effects	54.8 mg/kg bw/day	
Consumers	Oral	Long-term systemic effects	1.67 mg/kg bw/day	

Predicted No Effect Concentration (PNEC)

n-Butyl acetate

Compartment	Value	Remarks
Fresh water	0.18 mg/l	
Fresh water sediment	0.981 mg/kg	
Marine water	0.018 mg/l	
Marine sediment	0.0981 mg/kg	
Sewage treatment plant	35.6 mg/l	
Soil	0.0903 mg/kg	
Intermittent use/release	0.36 mg/l	

2-methoxy-1-methylethyl acetate

Compartment	Value	Remarks
Fresh water	0.635 mg/l	
Fresh water sediment	3.29 mg/kg	dry weight
Marine water	0.0635 mg/l	
Marine sediment	0.329 mg/kg	dry weight
Sewage treatment plant	100 mg/l	
Soil	0.29 mg/kg	dry weight
Intermittent use/release	6.35 mg/l	

8.2 Exposure controls

Respiratory protection

Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.

In case of hypersensitivity of the respiratory tract and skin (e.g. asthmatics and those who suffer from chronic bronchitis and chronic skin complaint) it is inadvisable to work with the product.

Hand protection

Conditionally suitable materials for protective gloves; EN 374:
Butyl rubber - IIR: thickness $\geq 0,5$ mm; breakthrough time ≥ 60 min.
Recommendation: contaminated gloves should be disposed of.

Eye protection

Wear eye/face protection.

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Skin and body protection

Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	liquid	
Colour:	yellowish	
Odour:	solvent-like	
Odour Threshold:	not established	
pH:	not applicable	
Boiling point/boiling range:	ca. 127 °C at 1,013 hPa	
Flash point:	ca. 45 °C	DIN 53213
Evaporation rate:	not established	
Flammability (solid, gas):	not applicable	
Burning number:	not applicable	
Upper/lower flammability or explosive limits:		
n-Butyl acetate	upper: 7.5 %(V) / lower: 1.2 %(V)	
2-methoxy-1-methylethyl acetate	upper: 10.8 %(V) / lower: 1.5 %(V)	
Vapour pressure:	not established	
Vapour pressure of ingredients:		
n-Butyl acetate	ca. 12 hPa at 20 °C	
2-methoxy-1-methylethyl acetate	ca. 5 hPa at 20 °C	
Hexamethylene-1,6-diisocyanate	ca. 0.007 hPa at 20 °C	
Hexamethylene-1,6-diisocyanate Homopolymer	< 0.0001 hPa at 20 °C (vapor pressure balance/OECD No.104)	
Vapour density:	not established	
Density:	ca. 1.01 g/cm ³ at 20 °C	DIN 53217
Miscibility with water:	immiscible at 15 °C	
Water solubility of ingredients:		
n-Butyl acetate	ca. 10 g/l	at 20 °C
2-methoxy-1-methylethyl acetate	ca. 200 g/l	at 20 °C
Surface tension:	not established	
Partition coefficient (n-octanol/water):	not established	
Auto-ignition temperature:	not applicable	
Ignition temperature:	ca. 315 °C	
Decomposition temperature:	not established	
Viscosity, dynamic:	ca. 18 mPa.s at 23 °C	DIN EN ISO 3219/A.3
Explosive properties:	not established	
Dust explosion class:	not applicable	
Oxidising properties:	not established	

9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.

SECTION 10: Stability and reactivity

10.1 Reactivity

This information is not available.

10.2 Chemical stability

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This information is not available.

10.3 Possibility of hazardous reactions

Exothermic reaction with amines and alcohols; reacts slowly with water forming CO₂, in closed containers risk of bursting owing to increase of pressure.

10.4 Conditions to avoid

This information is not available.

10.5 Incompatible materials

This information is not available.

10.6 Hazardous decomposition products

No hazardous decomposition products when stored and handled correctly.

SECTION 11: Toxicological information

Toxicological studies on the product are not yet available.

Please find below the toxicological data available to us for the components.

11.1 Information on toxicological effects

Acute toxicity, oral

Hexamethylene-1,6-diisocyanate Homopolymer
LD50 rat: > 5,000 mg/kg

n-Butyl acetate
LD50 rat, female: 10,760 mg/kg
Method: OECD Test Guideline 423

2-methoxy-1-methylethyl acetate
LD50 rat: 8,532 mg/kg

Acute toxicity, dermal

Hexamethylene-1,6-diisocyanate Homopolymer
LD50 rabbit, male/female: > 2,000 mg/kg
Studies of a comparable product.

LD50 rat, male/female: > 2,000 mg/kg
Method: OECD Test Guideline 402
Studies of a comparable product.

n-Butyl acetate
LD50 rat, male/female: 14,112 mg/kg
Method: OECD Test Guideline 402

2-methoxy-1-methylethyl acetate
LD50 rat: > 5,000 mg/kg
Method: OECD Test Guideline 402

Acute toxicity, inhalation

ATEmix (inhal.): 3 mg/l, 4 h
Test atmosphere: dust/mist
Method: Calculation method

Hexamethylene-1,6-diisocyanate Homopolymer
LC50 rat: 0.554 mg/l, 4 h
Test atmosphere: dust/mist

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The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Converted acute toxicity point estimate 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement

Assessment: Harmful if inhaled.

n-Butyl acetate
LC50 rat, male/female: > 21 mg/l, 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

2-methoxy-1-methylethyl acetate
LC50 rat: > 23.8 mg/l, 6 h
Test atmosphere: dust/mist

Primary skin irritation

Hexamethylene-1,6-diisocyanate Homopolymer
Species: rabbit Result: slight
irritant Classification: No skin
irritation

n-Butyl acetate
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

Species: Human experience
Classification: Repeated exposure may cause skin dryness or cracking.

2-methoxy-1-methylethyl acetate
Species: rabbit
Result: non-irritant Classification:
No skin irritation Method: OECD
Test Guideline 404

Primary mucosae irritation

Hexamethylene-1,6-diisocyanate Homopolymer
Species: rabbit
Result: slight irritant
Classification: No eye irritation

n-Butyl acetate
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

2-methoxy-1-methylethyl acetate
Species: rabbit Result: slight
irritant Classification: No eye
irritation
Method: OECD Test Guideline 405

Sensitisation

Hexamethylene-1,6-diisocyanate Homopolymer
Skin sensitisation according to Magnusson/Kligmann (maximizing test):
Species: Guinea pig
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 406

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Respiratory sensitization

Classification: No classification according to EC Directives 2006/121/EC or 1999/45/EC as respiratory sensitizer.

No pulmonary sensitisation observed in animal tests.

No pulmonary sensitisation potential was observed in guinea pigs after either intradermal or inhalative induction with polyisocyanate based on hexamethylene diisocyanate.

n-Butyl acetate

Skin sensitisation according to Magnusson/Kligmann (maximizing test):

Species: Guinea pig

Result: negative

Classification: Does not cause skin sensitization.

Method: OECD Test Guideline 406

2-methoxy-1-methylethyl acetate

Skin sensitisation according to Magnusson/Kligmann (maximizing test):

Species: Guinea pig

Result: negative

Classification: Does not cause skin sensitization.

Method: OECD Test Guideline 406

Subacute, subchronic and prolonged toxicity

Hexamethylene-1,6-diisocyanate Homopolymer

Application Route: Subacute inhalation toxicity, rat

Method: OECD Test Guideline 412

Test concentration - 3,7 ; 17,5 and 76,6 mg aerosol/m³

exposure time - 3 weeks

(6 hours a day, 5 days a week)

3,7 mg/m³ was tolerated without damage (NOEL),

17,5 mg/m³ and 76,6 mg/m³ caused increase of lung weight,

pronounced concentration-dependent inflammatory changes in the respiratory tract.

All the changes were unspecific and are therefore attributed to the primary irritation potential of the product.

Evidence of damage to organs other than the organs of respiration was not found.

Toxicological studies of a comparable product.

n-Butyl acetate

NOAEL: 500 ppm

Application Route: inhalation (vapour)

Species: rat, male/female

Dose Levels: 500 - 1500 - 3000 ppm

Exposure duration: 90 d

Frequency of treatment: 6 hours a day, 5 days a week

2-methoxy-1-methylethyl acetate

NOAEL: 1,000 mg/kg

Application Route: Oral

Species: rat, male/female

Dose Levels: 100 - 300 - 1000 mg/kg/day

Method: OECD Test Guideline 422

Carcinogenicity

Hexamethylene-1,6-diisocyanate Homopolymer

No data available.

n-Butyl acetate

No data available.

2-methoxy-1-methylethyl acetate

No data available.

Reproductive toxicity/Fertility

Hexamethylene-1,6-diisocyanate Homopolymer

Available data show no indications for reproductive toxicity.

n-Butyl acetate

Test type: Two-generation study

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Species: rat, male/female
Application Route: Inhalative
Method: OECD Test Guideline 416
Animal testing did not show any effects on fertility.

2-methoxy-1-methylethyl acetate
NOAEL - Parents: 300 ppm
NOAEL – F1: 1000 ppm
NOAEL – F2: 1000 ppm
Test type: Two-generation study
Species: rat, male/female
Application Route: Inhalative
Frequency of treatment: 6 hours/day 7 days/week
Method: OECD Test Guideline 416
Studies of a comparable product.

Reproductive toxicity/Teratogenicity

Hexamethylene-1,6-diisocyanate Homopolymer
Animal experiments on structurally similar compounds showed no indication of specific reproductive toxicity.

n-Butyl acetate
NOAEL (teratogenicity): 1500 ppm
Species: rat, female Application
Route: Inhalative Method: OECD
Test Guideline 414
Did not show teratogenic effects in animal experiments.

2-methoxy-1-methylethyl acetate
NOAEL (teratogenicity): 1500 ppm
NOAEL (maternal): 1500 ppm
Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 500 - 1500 - 3000 ppm
Frequency of treatment: 6 hours/day (Exposure duration: 10 days (day 6 - 15 p.c.))
Method: OECD Test Guideline 414

Genotoxicity in vitro

Hexamethylene-1,6-diisocyanate Homopolymer
Test type: Ames test
Test system: Salmonella typhimurium
Result: negative

n-Butyl acetate
Test type: Ames test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473

2-methoxy-1-methylethyl acetate
Test type: Ames test
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471

Test type: Unscheduled DNA synthesis (UDS)
Result: negative
Method: OECD Test Guideline 482

Genotoxicity in vivo

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Hexamethylene-1,6-diisocyanate Homopolymer
Test type: Micronucleus test
Species: Mouse
Result: negative

n-Butyl acetate
Test type: In vivo micronucleus test
Species: Mouse
Application Route: Oral
Result: negative
Method: OECD Test Guideline 474
Studies of a comparable product.

2-methoxy-1-methylethyl acetate
No data available.

STOT evaluation – one-time exposure

Hexamethylene-1,6-diisocyanate Homopolymer
May cause respiratory irritation.

n-Butyl acetate
May cause drowsiness or dizziness.

2-methoxy-1-methylethyl acetate
Based on available data, the classification criteria are not met.

STOT evaluation – repeated exposure

Hexamethylene-1,6-diisocyanate Homopolymer
Based on available data, the classification criteria are not met.

n-Butyl acetate
Based on available data, the classification criteria are not met.

2-methoxy-1-methylethyl acetate
Based on available data, the classification criteria are not met.

Aspiration toxicity

Hexamethylene-1,6-diisocyanate Homopolymer
Based on available data, the classification criteria are not met.

n-Butyl acetate
Based on available data, the classification criteria are not met.

2-methoxy-1-methylethyl acetate
Based on available data, the classification criteria are not met.

CMR Assessment

Hexamethylene-1,6-diisocyanate Homopolymer
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

n-Butyl acetate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

2-methoxy-1-methylethyl acetate
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

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Additional information

Special properties/effects: Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the occupational exposure limit. Prolonged contact with the skin may cause tanning and irritant effects.

Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

SECTION 12: Ecological information

Ecotoxicological studies of the product are not available.

Do not allow to escape into waterways, wastewater or soil.

Please find below the ecotoxicological data available to us for the components.

12.1 Toxicity

Acute Fish toxicity

Hexamethylene-1,6-diisocyanate Homopolymer

LC50 > 100 mg/l

Species: Danio rerio (zebra fish)

Exposure duration: 96 h

Method: Directive 67/548/EEC, Annex V, C.1.

Sample preparation on account of the reactivity of the substance with water:

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

n-Butyl acetate

LC50 18 mg/l

Species: Pimephales promelas (fathead minnow)

Exposure duration: 96 h

2-methoxy-1-methylethyl acetate

LC50 > 100 mg/l

Species: Oryzias latipes (Orange-red killifish)

Exposure duration: 96 h

Method: OECD Test Guideline 203

Chronic Fish toxicity

Hexamethylene-1,6-diisocyanate Homopolymer

No data available.

n-Butyl acetate

No data available.

2-methoxy-1-methylethyl acetate

NOEC 47.5 mg/l

Species: Oryzias latipes (Orange-red killifish)

Exposure duration: 14 d

Acute toxicity for daphnia

Hexamethylene-1,6-diisocyanate Homopolymer

EC50 > 100 mg/l

Species: Daphnia magna (Water flea)

Exposure duration: 48 h

Method: Directive 67/548/EEC, Annex V, C.2.

Sample preparation on account of the reactivity of the substance with water:

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Ecotoxicological reports on a comparable product

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n-Butyl acetate
EC50 44 mg/l
Species: Daphnia (water flea)
Exposure duration: 48 h

2-methoxy-1-methylethyl acetate
EC50 > 500 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: Directive 67/548/EEC, Annex V, C.2.

Chronic toxicity to daphnia

Hexamethylene-1,6-diisocyanate Homopolymer
No data available.

n-Butyl acetate
NOEC 23 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

2-methoxy-1-methylethyl acetate
NOEC > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 211

Acute toxicity for algae

Hexamethylene-1,6-diisocyanate Homopolymer
ErC50 > 100 mg/l
Species: scenedesmus subspicatus
Exposure duration: 72 h
Method: Directive 67/548/EEC, Annex V, C.3.
Sample preparation on account of the reactivity of the substance with water:
Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

n-Butyl acetate
EC50 675 mg/l
Species: Scenedesmus quadricauda (Green algae)
Exposure duration: 72 h

2-methoxy-1-methylethyl acetate
ErC50 > 1,000 mg/l
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

Acute bacterial toxicity

Hexamethylene-1,6-diisocyanate Homopolymer
EC50 > 100 mg/l
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209
Ecotoxicological reports on a comparable product

n-Butyl acetate
EC50 356 mg/l
Species: activated sludge
Exposure duration: 40 h

2-methoxy-1-methylethyl acetate
EC20 > 1,000 mg/l
Species: activated sludge
Exposure duration: 0.5 h
Method: OECD Test Guideline 209

12.2 Persistence and degradability

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Biodegradability

Hexamethylene-1,6-diisocyanate Homopolymer
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: Directive 67/548/EEC Annex V, C.4.E.

n-Butyl acetate
Biodegradation: > 80 %, 5 d, i.e. readily biodegradable
Method: OECD Test Guideline 301 D

2-methoxy-1-methylethyl acetate
Biodegradation: 100 %, 8 d, i.e. inherently degradable
Method: OECD Test Guideline 302 B

Biodegradation: > 90 %, 28 d, i.e. readily biodegradable
Method: OECD Test Guideline 301 F

Adsorbed organic bound halogens (AOX)

2-methoxy-1-methylethyl acetate

Product does not contain any organic halogens.

12.3 Bioaccumulative potential

Bioaccumulation

2-methoxy-1-methylethyl acetate
Accumulation in aquatic organisms is unlikely.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Hexamethylene-1,6-diisocyanate Homopolymer
No data available.

n-Butyl acetate

This substance does not meet the criteria for classification as PBT or vPvB.

2-methoxy-1-methylethyl acetate

This substance does not meet the criteria for classification as PBT or vPvB.

12.6 Other adverse effects

Isocyanate reacts with water at the interface forming CO₂ and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

SECTION 13: Disposal considerations

Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

13.1 Waste treatment methods

After final product withdrawal, all residues must be removed from containers (drip-free, powder-free or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. These containers can be returned for recycling to the appropriate centres set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

None disposal into waste water.

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SECTION 14: Transport information

ADR/RID

14.1 UN number	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION
14.3 Transport hazard class(es)	:	3
Hazard Identification Number	:	30
14.4 Packing group	:	III
14.5 Environmental hazards	:	no

Limited quantity regulations applicable in accordance with chapter 3.4 ADR/RID in compliance with threshold value

ADN

14.1 UN number	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION
14.3 Transport hazard class(es)	:	3
Hazard Identification Number	:	30
14.4 Packing group	:	III
14.5 Environmental hazards	:	no

This classification data does not apply to transportation by tanker. If required, additional information can be requested from the manufacturer.

IATA

14.1 UN number	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION
14.3 Transport hazard class(es)	:	3
14.4 Packing group	:	III
14.5 Environmental hazards	:	no

IMDG

14.1 UN number	:	1866
14.2 UN proper shipping name	:	RESIN SOLUTION
14.3 Transport hazard class(es)	:	3
14.4 Packing group	:	III
14.5 Environmental hazards	:	no

14.6 Special precautions for user

See section 6 - 8.

Additional information	:	Combustible. Keep dry. Avoid heat above +40 °C. Keep separated from foodstuffs.
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14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.

P5c Flammable liquids

Quantity1:	5,000 t	Quantity2:	50,000 t
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Water contaminating class (Germany)

1 slightly water endangering

(in accordance with Annex 4 to the Directive on Water-Hazardous Substances)

Any existing national regulations on the handling of isocyanates and solvents must be observed.

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Other regulations

The European Committee of Paint, Printing Ink and Artists' Colours Manufacturers' Associations (CEPE) provides the following information on coatings containing isocyanates: Ready-to-use paints containing isocyanates may have an irritant effect on mucous membranes - especially on breathing organs - and cause hypersensitivity reactions. Inhalation of vapor or spray mist may cause sensitisation. When handling paints containing isocyanates all precautions required for solvent-containing paints must be followed. Vapor and spray mist in particular should not be inhaled. Allergics and asthmatics as well as people prone to respiratory ailments should not work with isocyanate containing paints.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for:

n-Butyl acetate

2-methoxy-1-methylethyl acetate

SECTION 16: Other information

Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
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.

The product is used mainly as a hardener in coating materials or adhesives. The handling of coating materials or adhesives containing reactive polyisocyanates and residual monomeric HDI requires appropriate protective measures referred to in this safety data sheet. These products may therefore be used only in industrial or trade applications. They are not suitable for use in homemaker (DIY) applications.

No exposure scenarios are provided for this mixture, because the necessary information about operational conditions and Risk Management Measures (RMM) of the identified uses can be found in section 8 of this SDS.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.