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

1.1 Product identifier

Commercial name : ASPIC Clear – Component B
Index No. : NA.
CE No. : NA.
CAS. No .: NA.
REACH Registration No. : NA (mixture)
Origin: organic, isocyanate

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

Uses : Polyaspartic resin system

1.3 Details of the supplier of the safety data sheet.

Entity : KEMICA COATINGS
Adress : Z.A. DU BOIS GUESLIN
28630 MIGNIERES
FRANCE
Tel. : +33 (0)2 37 26 39 87
+33 (0)2 37 26 33 56

E-Mail : info@kemica-coatings.com

1.4 Emergency telephone number

For France : Organisme de conseil/centre antipoison national

France : ORFILA
Telephone : +33 (0)1 45 42 59 59

Supplier
Telephone : +33 2 37 26 33 56 (8h30-12h00, 13h30-17h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Type of substance - Composition: mixture

Classification according to regulation (CE) n° 1272/2008 [CLP/SGH]
Acute toxicity, Inhalative, Category 4 (H332)
Sensitization of the skin, Category 1 (H317)
Specific target organ toxicity (single exposure), Category 3 (H335)
Chronically hazardous to the aquatic environment, Category 2 (H411)

See section 16 for the full text of the H statements declared above.
For more details on health consequences and symptoms, see section 11.

2.2. Label elements

Warning

Hazardous components which must be listed on the label
Aliphatic Polyisocyanate 1
aliphatic polyisocyanate 2
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
aliphatic polyisocyanate 3
hexamethylene-1,6-diisocyanate homopolymer

EC-No.: 500-060-2
Hazard statements:
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
Precautionary statements:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Supplementary hazardous characteristics and labeling elements:
EUH204 Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

prepolymer based on aliphatic polyisocyanate and hexamethylene-1,6-diisocyanate homopolymer

Hazardous components :

prepolymer based on aliphatic polyisocyanate
Concentration [% per weight]: 50-80%
Classification (CLP): Acute Tox 4 Par inhalation H332 Skin Sens. 1 H317 STOT SE 3 H335 Aquatic Chronic 2 H411

This contains :

Aliphatic Polyisocyanate 1
Concentration [wt.-%]: ca. 57
CAS-No.: 164250-92-4
Classification (1272/2008/CE): Acute Tox. 4 Inhalative H332 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Chronic 2 H411

aliphatic polyisocyanate 2
Concentration [wt.-%]: ca. 26
CAS-No.: 29891-05-2
Classification (1272/2008/CE): Acute Tox. 4 Inhalative H332 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Chronic 2 H411

Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Concentration [wt.-%]: ca. 15
EC-No.: 500-060-2
REACH Registration Number: 01-2119488177-26-0000
CAS-No.: 28182-81-2
Classification (1272/2008/CE): Acute Tox. 3 Inhalative H331 Skin Sens. 1 H317 STOT SE 3 H335

aliphatic polyisocyanate 3
Concentration [wt.-%]: < 1.5
CAS-No.: 1809331-98-3
Classification (1272/2008/CE): Acute Tox. 4 Inhalative H332 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Chronic 2 H411

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:

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

hexamethylene-1,6-diisocyanate homopolymer
Concentration [% per weight]: 50-80%
CE No.: 500-060-2
REACH registration number : 01-2119488934-20-0000
CAS No.: 28182-81-2
Classification (1272/2008/CE): Acute Tox. 4 Par inhalation H332 Skin Sens. 1 H317 STOT SE 3 H335

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:

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 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). Ensure adequate 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

If an annex according to REACH-Regulation (EU) No. 1907/2006 is attached to this MSDS, the general conditions of use are further specified in the corresponding exposure scenarios.
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
The personal protective measures described in section 8 must be observed. The precautions required in the handling of 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) : 10: Combustible liquids

7.3 Specific end use(s)

For details of the identified uses according to REACH-Regulation (EU) No. 1907/2006 refer to the annex of this safety data sheet if exists.

SECTION 8: Exposure controls/personal protection

If an annex according to Regulation (EU) No. 1907/2006 is attached to this MSDS, the general RMMs are further specified in the corresponding exposure scenarios.

8.1 Control parameters

Components with workplace control parameters

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
Hexamethylene-1,6-diisocyanate	822-06-0	EH40 WEL	STEL	0.07 mg/m3		, measured as NCO
Hexamethylene-1,6-diisocyanate	822-06-0	EH40 WEL	TWA	0.02 mg/m3		, measured as NCO

Exposition assessment value (EBW) per TGRS 430:Polyisocyanate content (HDI oligomers and/or prepolymers) 100 %. Use an exposition assessment value of 0,5 mg/m³.

Derived No Effect Level (DNEL)

hexamethylene-1,6-diisocyanate homopolymer

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term local effects	0.5 mg/m3	Most sensitive endpoint: Irritation (respiratory tract)
Workers	Inhalation	Acute local effects	1 mg/m3	Most sensitive endpoint: Irritation (respiratory tract)
Workers	Dermal	Long-term local effects		No quantitative risk assessment possible. Most sensitive endpoint: Sensitisation (skin)
Workers	Dermal	Acute local effects		No quantitative risk assessment possible. Most sensitive endpoint: Sensitisation (skin)

Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term local effects	0.35 mg/m3	Most sensitive endpoint: Irritation (respiratory tract)

Workers	Inhalation	Acute local effects	0.7 mg/m3	Most sensitive endpoint: Irritation (respiratory tract)
Workers	Dermal	Long-term local effects		No quantitative risk assessment possible. Most sensitive endpoint: Sensitisation (skin)
Workers	Dermal	Acute local effects		No quantitative risk assessment possible. Most sensitive endpoint: Sensitisation (skin)

Predicted No Effect Concentration (PNEC)
hexamethylene-1,6-diisocyanate homopolymer

Compartment	Value	Remarks
Fresh water	0.199 mg/l	
Fresh water sediment	44551 mg/kg	dry weight
Marine water	0.0199 mg/l	
Marine sediment	4455 mg/kg	dry weight
Sewage treatment plant	100 mg/l	
Soil	8884 mg/kg	dry weight
Oral		Not relevant

Hexamethylene diisocyanate, oligomerisation product (uretdione type)

Compartment	Value	Remarks
Fresh water	> 0.05 mg/l	
Fresh water sediment	> 1.33 mg/kg	dry weight
Marine water	> 0.005 mg/l	
Marine sediment	> 0.133 mg/kg	dry weight
Sewage treatment plant	55.6 mg/l	
Soil	> 0.066 mg/kg	dry weight
Oral		Not relevant

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 A2-P2 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
Suitable materials for safety gloves; EN 374:
Butyl rubber - IIR: thickness >=0,5mm; breakthrough time >=480min.
Fluorinated rubber - FKM: thickness >=0,4mm; breakthrough time >=480min.
Laminate glove - PE/EVAL/PE; breakthrough time >=480 min.
Recommendation: contaminated gloves should be disposed of.
Eye protection
Wear eye/face protection.
Skin and body protection
Wear suitable protective clothing.
Skin and body protection
Wear suitable protective clothing. Wearing a spray protective overall with hood (Type 4, EN 14605) is required during spraying. All parts of the body must be covered (also wrists, ankles, throat, and neck).

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: liquid
Color: colorless to yellowish

Odor:	slight inherent odor
Odour Threshold:	not established
pH:	not established
Melting point/range:	not established
Boiling point/boiling range:	>300 °C at 1,013 hPa
	not applicable, decomposition
Flash point:	>184 °C
Evaporation rate:	not established
Flammability (solid, gas):	not applicable
Burning number:	not applicable
Vapour pressure:	not established
Vapour density:	not established
Density:	ca. 1.15 g/cm³ at 20 °C
Miscibility with water:	immiscible at 15 °C
Auto-ignition temperature:	not applicable
Ignition temperature:	not established
Decomposition temperature:	not established
Viscosity, dynamic:	ca. 1,300 mPa.s at 20 °C
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

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 (hazardous components).

11.1 Information on toxicological effects

Acute toxicity, oral

hexamethylene-1,6-diisocyanate homopolymer
LD50 rat, female: >= 5,000 mg/kg
Method: OECD Test Guideline 423
Aliphatic Polyisocyanate 1
LD50 rat: > 5,000 mg/kg
Toxicological studies of a comparable product.
aliphatic polyisocyanate 2
LD50 rat: > 5,000 mg/kg
Toxicological studies of a comparable product.
Hexamethylene diisocyanate, oligomerisation product (uretdione type) LD50 rat, male/female: > 5,665 mg/kg Method: OECD Test Guideline 401
aliphatic polyisocyanate 3
LD50 rat: > 5,000 mg/kg
Toxicological studies of a comparable product.

Acute toxicity, dermal

hexamethylene-1,6-diisocyanate homopolymer
LD50 rat, male/female: > 2,000 mg/kg
Method: OECD Test Guideline 402

Studies of a comparable product.
LD50 rabbit, male/female: > 2,000 mg/kg
Studies of a comparable product.
Aliphatic Polyisocyanate 1
LD50 rat: > 2,000 mg/kg
Method: OECD Test Guideline 402
Toxicological studies of a comparable product.
aliphatic polyisocyanate 2
LD50 rat: > 2,000 mg/kg
Method: OECD Test Guideline 402
Toxicological studies of a comparable product.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
LD50 rat, male/female: > 2,000 mg/kg
Method: OECD Test Guideline 402
Studies of a comparable product.
aliphatic polyisocyanate 3
LD50 rat: > 2,000 mg/kg
Method: OECD Test Guideline 402
Toxicological studies of a comparable product.

Acute toxicity, inhalation

hexamethylene-1,6-diisocyanate homopolymer
LC50 rat, female: 0.390 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Toxicological studies of a comparable product.
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.
ATEmix (inhal.): 1.16 mg/l, 4 h
Test atmosphere: dust/mist
Method: Calculation method
Aliphatic Polyisocyanate 1
rat, male: 0.351 mg/l, 4 h
Test atmosphere: dust/mist
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. Studies of a comparable product.
Converted acute toxicity point estimate 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: Harmful if inhaled.
aliphatic polyisocyanate 2
rat, male: 0.351 mg/l, 4 h
Test atmosphere: dust/mist
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. Studies of a comparable product.
Converted acute toxicity point estimate 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: Harmful if inhaled.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
LC50 rat, male/female: 0.158 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
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 0.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: Toxic if inhaled.
aliphatic polyisocyanate 3
rat, male: 0.351 mg/l, 4 h

Test atmosphere: dust/mist
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. Studies of a comparable product.
Converted acute toxicity point estimate 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: Harmful if inhaled.

Primary skin irritation

hexamethylene-1,6-diisocyanate homopolymer
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

Aliphatic Polyisocyanate 1
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404
Toxicological studies of a comparable product.

aliphatic polyisocyanate 2
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404
Toxicological studies of a comparable product.

Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

aliphatic polyisocyanate 3
Species: rabbit
Result: slight irritant
Classification: No skin irritation
Method: OECD Test Guideline 404
Toxicological studies of a comparable product.

Primary mucosae irritation

hexamethylene-1,6-diisocyanate homopolymer
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

Aliphatic Polyisocyanate 1
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405
Toxicological studies of a comparable product.

aliphatic polyisocyanate 2
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405
Toxicological studies of a comparable product.

Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

aliphatic polyisocyanate 3
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405
Toxicological studies of a comparable product.

Sensitisation

hexamethylene-1,6-diisocyanate homopolymer
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive

Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429
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.
Aliphatic Polyisocyanate 1
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1B)
Method: OECD Test Guideline 429
Toxicological studies of a comparable product.
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.
aliphatic polyisocyanate 2
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1B)
Method: OECD Test Guideline 429
Toxicological studies of a comparable product.
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.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
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
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.
aliphatic polyisocyanate 3
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact (Sub cat. 1B)
Method: OECD Test Guideline 429
Toxicological studies of a comparable product.
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.

Subacute, subchronic and prolonged toxicity

hexamethylene-1,6-diisocyanate homopolymer
NOAEL: 3,3 mg/m³ air
Application Route: Inhalative
Species: rat, male/female
Dose Levels: 0 - 0,5 - 3,3 - 26,4 mg/m³
Exposure duration: 90 d
Frequency of treatment: 6 hours a day, 5 days a week
Test substance: as aerosol
Method: OECD Test Guideline 413
Toxicological studies of a comparable product.
Evidence of damage to organs other than the organs of respiration was not found.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
NOAEL: 0,41 mg/m³ air

Application Route: Inhalative
Species: rat, male/female
Dose Levels: 0,41 - 2,2 - 10,15 mg/m³
Exposure duration: 28 d
Frequency of treatment: 6 hours a day, 5 days a week
Method: OECD Test Guideline 412
Evidence of damage to organs other than the organs of respiration was not found.
aliphatic polyisocyanate 3
No data available.

Carcinogenicity

hexamethylene-1,6-diisocyanate homopolymer
No data available.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
No data available.
aliphatic polyisocyanate 3
No data available.

Reproductive toxicity/Fertility

hexamethylene-1,6-diisocyanate homopolymer
Available data show no indications for reproductive toxicity.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Available data show no indications for reproductive toxicity.
aliphatic polyisocyanate 3
No data available.

Reproductive toxicity/Teratogenicity

hexamethylene-1,6-diisocyanate homopolymer
Animal experiments on structurally similar compounds showed no indication of specific reproductive toxicity.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Animal experiments on structurally similar compounds showed no indication of specific reproductive toxicity.
aliphatic polyisocyanate 3
No data available.

Genotoxicity in vitro

hexamethylene-1,6-diisocyanate homopolymer
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Test type: Point mutation in mammalian cells (HPRT test)
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476
Toxicological studies of a comparable product.
Test type: Chromosome aberration test in vitro
Test system: Chinese hamster V79 cell line
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 473
Toxicological studies of a comparable product.
Aliphatic Polyisocyanate 1
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.
aliphatic polyisocyanate 2
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.
Test type: Salmonella/microsome test (Ames test)

Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Test type: Point mutation in mammalian cells (HPRT test)
Metabolic activation: with/without
Result: positive
Method: OECD Test Guideline 476
Test type: Chromosome aberration test in vitro
Test system: Chinese hamster V79 cell line
Metabolic activation: with/without
Result: positive
Method: OECD Test Guideline 473
aliphatic polyisocyanate 3
Test type: Salmonella/microsome test (Ames test)
Metabolic activation: with/without
Result: No indication of mutagenic effects.
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.

Genotoxicity in vivo

No data available.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: In vivo micronucleus test
Species: Mouse, male
Application Route: Inhalative
Exposure duration: 6 h
Dose: 0 - 7 - 25 - 50 mg/m³
Cell type: Bone marrow
Method: OECD Test Guideline 474
Test substance: as aerosol
Did not show mutagenic effects in animal experiments.
Test type: Unscheduled DNA synthesis (UDS)
Species: rat, male
Application Route: Inhalative
Exposure duration: 3 h
Dose: 0 - 50 - 140 mg/m³
Cell type: Liver cells
Method: OECD Test Guideline 486
Test substance: as aerosol
Did not show mutagenic effects in animal experiments.
aliphatic polyisocyanate 3
No data available.

STOT evaluation – one-time exposure

hexamethylene-1,6-diisocyanate homopolymer
Route of exposure: Inhalative
May cause respiratory irritation.
Aliphatic Polyisocyanate 1
Route of exposure: Inhalation
Target Organs: Respiratory Tract
May cause respiratory irritation.
aliphatic polyisocyanate 2
Route of exposure: Inhalation
Target Organs: Respiratory Tract
May cause respiratory irritation.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
May cause respiratory irritation.
aliphatic polyisocyanate 3
Route of exposure: Inhalation

Target Organs: Respiratory Tract
May cause respiratory irritation.

STOT evaluation – repeated exposure

hexamethylene-1,6-diisocyanate homopolymer
Based on available data, the classification criteria are not met.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Based on available data, the classification criteria are not met.
aliphatic polyisocyanate 3
No data available.

Aspiration toxicity

hexamethylene-1,6-diisocyanate homopolymer
Based on available data, the classification criteria are not met.
Aliphatic Polyisocyanate 1
Based on available data, the classification criteria are not met.
aliphatic polyisocyanate 2
Based on available data, the classification criteria are not met.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Based on available data, the classification criteria are not met.
aliphatic polyisocyanate 3
Based on available data, the classification criteria are not met.

CMR Assessment

hexamethylene-1,6-diisocyanate homopolymer
Carcinogenicity: Based on available data, the classification criteria are not met.
Mutagenicity: In vitro tests did not show mutagenic effects 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.
Aliphatic Polyisocyanate 1
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: No data available.
Reproductive toxicity/Fertility: No data available.
aliphatic polyisocyanate 2
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: No data available.
Reproductive toxicity/Fertility: No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type) Carcinogenicity:
Based on available data, the classification criteria are not met.
Mutagenicity: In vitro tests showed inconsistent results. In vivo tests did not show mutagenic effects 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.
aliphatic polyisocyanate 3
Carcinogenicity: No data available.
Mutagenicity: Based on available data, the classification criteria are not met.
Teratogenicity: No data available.
Reproductive toxicity/Fertility: No data available.

Toxicology Assessment

hexamethylene-1,6-diisocyanate homopolymer
Acute effects: Harmful if inhaled.
Sensitization: May cause sensitization by skin contact.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Acute effects: Toxic if inhaled.
Sensitization: May cause sensitization by skin contact.

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.
Aliphatic Polyisocyanate 1
LC50 8.9 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203
Ecotoxicological reports on a comparable product
aliphatic polyisocyanate 2
LC50 8.9 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203
Ecotoxicological reports on a comparable product
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
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.
aliphatic polyisocyanate 3
LC50 8.9 mg/l
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203
Ecotoxicological reports on a comparable product

Chronic Fish toxicity

hexamethylene-1,6-diisocyanate homopolymer
Study scientifically not justified.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
aliphatic polyisocyanate 3
No data available.

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.
Aliphatic Polyisocyanate 1
EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202
Ecotoxicological reports on a comparable product
aliphatic polyisocyanate 2
EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202
Ecotoxicological reports on a comparable product
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
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.
aliphatic polyisocyanate 3

EC50 > 100 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 48 h
Method: OECD Test Guideline 202
Ecotoxicological reports on a comparable product

Chronic toxicity to daphnia
hexamethylene-1,6-diisocyanate homopolymer
Study scientifically not justified.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
aliphatic polyisocyanate 3
No data available.

Acute toxicity for algae
hexamethylene-1,6-diisocyanate homopolymer
ErC50 199 mg/l
Test type: Growth inhibition
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.
Aliphatic Polyisocyanate 1
No data available.
aliphatic polyisocyanate 2
No data available.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
ErC50 > 50 - < 100 mg/l
Test type: Growth inhibition
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.
aliphatic polyisocyanate 3
No data available.

Acute bacterial toxicity
hexamethylene-1,6-diisocyanate homopolymer
EC50 > 10,000 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: EG-RL 88/302/EEC
Aliphatic Polyisocyanate 1
EC50 1,600 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209
Ecotoxicological reports on a comparable product
aliphatic polyisocyanate 2
EC50 1,600 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209
Ecotoxicological reports on a comparable product
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
EC50 5,560 mg/l
Test type: Respiration inhibition
Species: activated sludge
Method: OECD Test Guideline 209
aliphatic polyisocyanate 3
EC50 1,600 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209
Ecotoxicological reports on a comparable product

Ecotoxicology Assessment
hexamethylene-1,6-diisocyanate homopolymer

Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Based on available data, the classification criteria are not met.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.
Aliphatic Polyisocyanate 1
Acute aquatic toxicity: Toxic to aquatic life.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.
aliphatic polyisocyanate 2
Acute aquatic toxicity: Toxic to aquatic life.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Acute aquatic toxicity: Harmful to aquatic organisms.
Chronic aquatic toxicity: Based on available data, the classification criteria are not met.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.
aliphatic polyisocyanate 3
Acute aquatic toxicity: Toxic to aquatic life.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

12.2 Persistence and degradability

Biodegradability

hexamethylene-1,6-diisocyanate homopolymer
Test type: aerobic
Biodegradation: 2 %, 28 d, i.e. not readily degradable
Method: Directive 67/548/EEC Annex V, C.4.E.
Ecotoxicological studies of the product
Test type: aerobic
Biodegradation: 0 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C
Ecotoxicological studies of the product
Aliphatic Polyisocyanate 1
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 D
Ecotoxicological reports on a comparable product
aliphatic polyisocyanate 2
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 D
Ecotoxicological reports on a comparable product
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: aerobic
Inoculum: activated sludge
Biodegradation: 1 %, 21 d, i.e. not readily degradable
Method: Directive 67/548/EEC Annex V, C.4.E.
Test type: aerobic
Inoculum: activated sludge
Biodegradation: 18 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C
aliphatic polyisocyanate 3
Biodegradation: 1 %, 28 d, i.e. not readily degradable
Method: OECD Test Guideline 301 D
Ecotoxicological reports on a comparable product

Stability in water

hexamethylene-1,6-diisocyanate homopolymer
Test type: Hydrolysis
Half life: 7.7 h at 23 °C
Method: OECD Test Guideline 111
The substance hydrolyzes rapidly in water.
Studies of a comparable product.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: Hydrolysis
Half life: 6.1 h at 23 °C
The substance hydrolyzes rapidly in water.

Photodegradation

hexamethylene-1,6-diisocyanate homopolymer
Test type: Phototransformation in air
Temperature: 25 °C
sensitizer: OH-radicals

Half-life indirect photolysis: 11.7 h
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.
Test type: Phototransformation in air
Temperature: 25 °C
sensitizer: OH-radicals
Half-life indirect photolysis: 3.1 h
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.
Studies of hydrolysis products.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Test type: Phototransformation in air
Temperature: 25 °C
sensitizer: OH-radicals
Concentration sensibilisator: 500,000 1/cm3
Half-life indirect photolysis: 0.64 h
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.
Test type: Phototransformation in air
Temperature: 25 °C
sensitizer: OH-radicals
Concentration sensibilisator: 500,000 1/cm3
Half-life indirect photolysis: 0.19 h
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.
Studies of hydrolysis products.

Volatility (Henry's Law constant)

hexamethylene-1,6-diisocyanate homopolymer
Calculated value = < 0.000001 Pa*m3/mol at 25 °C
Method: Bond-method
The substance has to be scored as non-volatile from water.
Calculated value = < 0.000001 Pa*m3/mol at 25 °C
Method: Bond-method
The substance has to be scored as non-volatile from water.
Studies of hydrolysis products.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Calculated value = < 0.000002 Pa*m3/mol at 25 °C
Method: Bond-method
The substance has to be scored as non-volatile from water.

12.3 Bioaccumulative potential

Bioaccumulation

hexamethylene-1,6-diisocyanate homopolymer
Bioconcentration factor (BCF): 706.2
Method: (calculated)
The substance hydrolyzes rapidly in water.
An accumulation in aquatic organisms is not to be expected.
Bioconcentration factor (BCF): 10.11
Method: (calculated)
An accumulation in aquatic organisms is not to be expected.
Studies of hydrolysis products.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Bioconcentration factor (BCF): 788
Method: (calculated)
An accumulation in aquatic organisms is not to be expected.
Bioconcentration factor (BCF): 159
Method: (calculated)
An accumulation in aquatic organisms is not to be expected.
Studies of hydrolysis products.

12.4 Mobility in soil

Distribution among environmental compartments

hexamethylene-1,6-diisocyanate homopolymer
Adsorption/Soil
not applicable
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
Adsorption/Soil
not applicable

Environmental distribution

hexamethylene-1,6-diisocyanate homopolymer
not applicable
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
not applicable

12.5 Results of PBT and vPvB assessment

hexamethylene-1,6-diisocyanate homopolymer
This substance does not meet the criteria for classification as PBT or vPvB.
Hexamethylene diisocyanate, oligomerisation product (uretdione type)
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.

SECTION 14: Transport information

ADR/RID

14.1 UN number	:	3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aliphatic Polyisocyanate)
14.3 Transport hazard class(es)	:	9
Hazard Identification Number	:	90
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

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

ADN

14.1 UN number	:	3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aliphatic Polyisocyanate)
14.3 Transport hazard class(es)	:	9
Hazard Identification Number	:	90
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

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	:	3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aliphatic Polyisocyanate)
14.3 Transport hazard class(es)	:	9
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

IMDG

14.1 UN number	:	3082
14.2 UN proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Aliphatic Polyisocyanate)
14.3 Transport hazard class(es)	:	9
14.4 Packing group	:	III
14.5 Environmental hazards	:	yes

14.6 Special precautions for user

See section 6 - 8.

Additional information	:	Environmentally hazardous substance. Keep dry. Keep separated from foodstuffs.

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. E2 Environmental hazards

Quantity1: 200 t Quantity2: 500 t

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 must be observed.

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:

hexamethylene-1,6-diisocyanate homopolymer

Hexamethylene diisocyanate, oligomerisation product (uretdione type)

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.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

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 homeworker (DIY) applications.

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Advice for the reader

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