

Safety Data Sheet

MACROFAN PW FILLER HARDENER LM

Safety Data Sheet dated 20/04/2023 version 1



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

1.1. Product identifier

Mixture identification:

Trade name: MACROFAN PW FILLER HARDENER LM

Trade code: LMMH0600

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

Recommended use: Coatings and paints, thinners, paint removers

Poliysocyanic compound - professional use

Liquid solution

Professional uses

Uses advised against: N.A.

1.3. Details of the supplier of the safety data sheet

Company: Lechler SpA - Via Cecilio, 17 - 22100 Como - CO - Italy

Telephone: +39031586111

First Email: safety@lechler.eu

1.4. Emergency telephone number

UNITED KINGDOM: Emergency Number 0044 1606738600 - This telephone number is available during office hours only (8.45-16.45).

UNITED STATES OF AMERICA: Emergency Contact: Lechler SPA -Tel. +39-031-586301 (8.00-18.00).

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

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

Flam. Liq. 3	Flammable liquid and vapour.
Acute Tox. 4	Harmful if inhaled.
Skin Irrit. 2	Causes skin irritation.
Eye Irrit. 2	Causes serious eye irritation.
Skin Sens. 1	May cause an allergic skin reaction.
STOT SE 3	May cause respiratory irritation.
STOT SE 3	May cause drowsiness or dizziness.
STOT RE 2	May cause damage to organs through prolonged or repeated exposure.
Asp. Tox. 1	May be fatal if swallowed and enters airways.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

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

Hazard pictograms and Signal Word



Danger

Hazard statements

H226 Flammable liquid and vapour.

H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P210	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/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.

Special Provisions:

EUH204	Contains isocyanates. May produce an allergic reaction.
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Contains

Polysocyanate HDI Derivative

n-butyl acetate

1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 1,6-diisocyanatohexane

xylene

hexamethylene-di-isocyanate

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

None.

2.3. Other hazards

Results of PBT and vPvB assessment Not a PBT, vPvB substance as per the criteria of the REACH Regulation.
 Endocrine disrupting properties-Toxicity The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Endocrine disrupting properties-Ecotoxicity The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: MACROFAN PW FILLER HARDENER LM

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥30 - ≤40 %	Polysocyanate HDI Derivative	CAS:28182-81-2 EC:931-274-8	Skin Sens. 1, H317; Acute Tox. 4, H332; STOT SE 3, H335	01-2119485796-17
≥25 - ≤30 %	n-butyl acetate	CAS:123-86-4 EC:204-658-1 Index:607-025-00-1	Flam. Liq. 3, H226; STOT SE 3, H336, EUH066	01-2119485493-29
≥20 - ≤25 %	1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 1,6-diisocyanatohexane	CAS:30322-28-2	Acute Tox. 4, H332; STOT SE 3, H335; Skin Sens. 1, H317	

≥10 - ≤12.5 %	xylene	CAS:1330-20-7 EC:215-535-7 Index:601-022-00-9	Flam. Liq. 3, H226; Acute Tox. 4, H332; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT RE 2, H373; Asp. Tox. 1, H304; Aquatic Chronic 3, H412; STOT SE 3, H335	01-2119488216-32
≥1 - ≤2.5 %	[3-(2,3-epoxypropoxy)propyl] trimethoxysilane	CAS:2530-83-8 EC:219-784-2	Eye Dam. 1, H318	01-2119513212-58
< 0.1 %	hexamethylene-di-isocyanate	CAS:822-06-0 EC:212-485-8 Index:615-011-00-1	Acute Tox. 4, H302 Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 Specific Concentration Limits: C ≥ 0.5%: Resp. Sens. 1 H334 C ≥ 0.5%: Skin Sens. 1 H317	01-2119457571-37

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

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

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

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

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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

Eye irritation

Eye damages

Skin Irritation

Erythema

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

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

6.3. Methods and material for containment and cleaning up

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

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

Use localized ventilation system.

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

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

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.

Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
Polysocyanate HDI Derivative CAS: 28182-81-2	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 0.02 mg/m ³ Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Short Term: 0.07 mg/m ³ The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the category
n-butyl acetate CAS: 123-86-4	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 724 mg/m ³ - 150 ppm; Short Term: 966 mg/m ³ - 200 ppm
	EU		Long Term: 241 mg/m ³ - 50 ppm; Short Term: 723 mg/m ³ - 150 ppm Behaviour Indicative

		2019/1831/EU
	ACGIH	Long Term: 50 ppm; Short Term: 150 ppm Eye and URT irr
xylene CAS: 1330-20-7	ACGIH	Long Term: 20 ppm A4, BEI - URT and eye irr; hematologic eff; CNS impair
	EH40 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 220 mg/m3 - 50 ppm; Short Term: 441 mg/m3 - 100 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to
	EU	Long Term: 221 mg/m3 - 50 ppm; Short Term: 442 mg/m3 - 100 ppm Behaviour Indicative 2000/39/EC
	EU	Identifies the possibility of significant uptake through the skin
hexamethylene-di-isocyanate CAS: 822-06-0	EH40 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 0.02 mg/m3 The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categor
	EH40 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Short Term: 0.07 mg/m3 Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific
	ACGIH	Long Term: 0.005 ppm URT irr, resp sens

Biological limit values

Polysocyanate HDI
Derivative
CAS: 28182-81-2

Biological Indicator: isocyanate-derived diamine; Sampling Period: At the end of the period of exposure
Value: 1 µmol/mol creatinine; Medium: Urine
Remark: UK. Biological monitoring guidance values

Biological Indicator: spirometry
Remark: Uruguay. Health surveillance of workers - Biological Exposure Indices (BEI).

Biological Indicator: 4,4'-diaminodiphenylmethane; Sampling Period: At the end of a work week / at the end of a work day / at the end of a shift
Value: 10 µg/g creatinine; Medium: Urine
Remark: Austria. Regulation on health surveillance in the workplace 2014

xylene
CAS: 1330-20-7

Biological Indicator: xylene; Sampling Period: End of turn
Value: 1.5 mg/L; Medium: Blood
Remark: Croatia. Biological Exposure Limits

Biological Indicator: Methylhippuric acid; Sampling Period: End of turn
Value: 1.5 g/l; Medium: Urine
Remark: New Zealand. Biological Exposure Indices

Biological Indicator: xylene; Sampling Period: End of turn
Value: 1.5 mg/L; Medium: Blood
Remark: Slovakia. Biological Limit Values

Biological Indicator: sum of 2,3,4-methylhippuric acid; Sampling Period: End of turn
Value: 2000 mg/L; Medium: Urine
Remark: Slovakia. Biological Limit Values

Biological Indicator: methylhippuric acid; Sampling Period: End of turn
Value: 3 g/l; Medium: Urine
Remark: Romania. Biological limit values

Biological Indicator: methylhippuric acid (all isomers); Sampling Period: End of turn
Value: 2 g/l; Medium: Urine
Remark: Slovenia. BAT-values

Biological Indicator: xylene; Sampling Period: Immediately after exposure or after working hours
Value: 1.5 mg/L; Medium: Blood
Remark: TRGS 903 - Biological limit values

Biological Indicator: methylhippuric acid (all isomers); Sampling Period: Immediately after exposure or

after working hours
Value: 2 g/l; Medium: Urine
Remark: TRGS 903 - Biological limit values

Biological Indicator: Methylhippuric acid; Sampling Period: Last 4 hours of shift
Value: 2 mg/L; Medium: Urine
Remark: South Africa. Hazardous Chemical Substances Regulations, Biological Exposure Indices.

Biological Indicator: total (o-, m-, p-)methylhippuric acid; Sampling Period: End of turn; End of working week
Value: 800 mg/L; Medium: Urine
Remark: Occupational exposure limits based on biological monitoring (JSOH).

Biological Indicator: methyl hippuric acid; Sampling Period: At the end of a work week / at the end of a work day / at the end of a shift
Value: 1.5 g/l; Medium: Urine
Remark: Austria. Regulation on health surveillance in the workplace 2014

Biological Indicator: xylene; Sampling Period: End of workday
Value: 1 mg/L; Medium: Blood
Remark: Austria. Regulation on health surveillance in the workplace 2014

Biological Indicator: Methylhippuric acid; Sampling Period: At the end of exposure, in 4 hours
Value: 2 mg/L; Medium: Urine
Remark: Kenya. Occupational Safety and Health Act (CAP.514), Schedule I, Table 3 Biological Exposure Limits

Biological Indicator: methyl hippuric acid; Sampling Period: After shift
Value: 5 Millimoles per liter; Medium: Urine
Remark: Finland. Biological limit values

Biological Indicator: methyl hippuric acid; Sampling Period: Immediately after exposure or after working hours
Value: 2 g/l; Medium: Urine
Remark: Svizzera. Lista di valori BAT

hexamethylene-di-isocyanate
CAS: 822-06-0

Biological Indicator: 1,6-Hexamethylene diamine; Sampling Period: End of turn
Value: 15 µg/g creatinine; Medium: Urine
Remark: Maximum allowable occupational exposure limits in the workplace - Table 3. Adopted Biological Exposu

Biological Indicator: hexamethylenediamine; Sampling Period: Immediately after exposure or after working hours
Value: 15 µg/g creatinine; Medium: Urine
Remark: TRGS 903 - Biological limit values

Biological Indicator: hexamethylene diamine; Sampling Period: End of turn
Value: 15 µg/g creatinine; Medium: Urine
Remark: Slovenia. BAT-values

Biological Indicator: Hexamethylenediamine; Sampling Period: Immediately after exposure or after working hours
Value: 15 µg/g creatinine; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: Hexamethylenediamine; Sampling Period: Immediately after exposure or after working hours
Value: 146 nmol/mmol creatinine; Medium: Urine
Remark: Svizzera. Lista di valori BAT

Biological Indicator: 1,6-Hexamethylene diamine; Sampling Period: End of turn
Value: 15 µg/g creatinine; Medium: Urine
Remark: ACGIH - Indicatori di Esposizione Biologica (BEI)

Biological Indicator: isocyanate-derived diamine; Sampling Period: At the end of the period of exposure
Value: 1 µmol/mol creatinine; Medium: Urine
Remark: UK. Biological monitoring guidance values

Biological Indicator: spirometry
Remark: Uruguay. Health surveillance of workers - Biological Exposure Indices (BEI).

Biological Indicator: 4,4'-diaminodiphenylmethane; Sampling Period: At the end of a work week / at the end of a work day / at the end of a shift
Value: 10 µg/g creatinine; Medium: Urine
Remark: Austria. Regulation on health surveillance in the workplace 2014

Predicted No Effect Concentration (PNEC) values

Polysocyanate HDI Exposure Route: Marine water; PNEC Limit: 0.0127 mg/l

Derivative
CAS: 28182-81-2

Exposure Route: Fresh Water; PNEC Limit: 0.127 mg/l
Exposure Route: Marine water sediments; PNEC Limit: 26670 mg/kg
Exposure Route: Freshwater sediments; PNEC Limit: 266700 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1.27 mg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 38.3 mg/l
Exposure Route: Soil; PNEC Limit: 53182 mg/kg
Exposure Route: Fresh Water; PNEC Limit: 0.18 mg/l

n-butyl acetate
CAS: 123-86-4

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.36 mg/l
Exposure Route: Marine water; PNEC Limit: 0.01 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 0.98 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 0.09 mg/kg
Exposure Route: Soil; PNEC Limit: 0.09 mg/kg
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 35.6 mg/l
Exposure Route: Fresh Water; PNEC Limit: 0.32 mg/l

xylene
CAS: 1330-20-7

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.32 mg/l
Exposure Route: Marine water; PNEC Limit: 0.32 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 12.46 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 12.46 mg/kg
Exposure Route: Soil; PNEC Limit: 2.31 mg/kg
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 6.58 mg/l
Exposure Route: Fresh Water; PNEC Limit: 1 mg/l

[3-(2,3-epoxypropoxy)propyl]
trimethoxysilane
CAS: 2530-83-8

Exposure Route: Marine water; PNEC Limit: 0.1 mg/l
Exposure Route: Soil; PNEC Limit: 0.79 mg/kg
Exposure Route: Marine water; PNEC Limit: 0.00774 mg/l

hexamethylene-di-isocyanate
CAS: 822-06-0

Exposure Route: Fresh Water; PNEC Limit: 0.0774 mg/l
Exposure Route: Marine water sediments; PNEC Limit: 0.001334 mg/kg
Exposure Route: Freshwater sediments; PNEC Limit: 0.01334 mg/kg
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 0.774 mg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 8.42 mg/l
Exposure Route: Soil; PNEC Limit: 0.0026 mg/kg

Derived No Effect Level (DNEL) values

Polysocyanate HDI
Derivative
CAS: 28182-81-2

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 0.5 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 1 mg/m³

n-butyl acetate
CAS: 123-86-4

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Industry: 300 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Industry: 600 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Industry: 300 mg/m³

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Industry: 600 mg/m³

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Industry: 11 mg/kg dry weight (d.w.)

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Worker Industry: 11 mg/kg dry weight (d.w.)

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Consumer: 35.7 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Consumer: 300 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Consumer: 35.7 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Consumer: 300 mg/m3

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Consumer: 6 mg/kg dry weight (d.w.)

Exposure Route: Human Dermal; Exposure Frequency: Short Term, systemic effects
Consumer: 6 mg/kg dry weight (d.w.)

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 2 mg/kg dry weight (d.w.)

Exposure Route: Human Oral; Exposure Frequency: Short Term, systemic effects
Consumer: 2 mg/kg dry weight (d.w.)

xylene
CAS: 1330-20-7

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Consumer: 65.3 mg/m3

Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 12.5 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 442 mg/kg

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 212 mg/kg

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 221 mg/m3

[3-(2,3-
epoxypropoxy)propyl]
trimethoxysilane
CAS: 2530-83-8

Exposure Route: Human Dermal; Exposure Frequency: Acute Effects
Worker Professional: 21 ppm

Exposure Route: Human Inhalation; Exposure Frequency: Acute Effects
Worker Professional: 147 mg/m3

Exposure Route: Human Dermal; Exposure Frequency: Chronic Effects
Worker Professional: 21 ppm

Exposure Route: Human Inhalation; Exposure Frequency: Chronic Effects
Worker Professional: 147 mg/m3

hexamethylene-di-
isocyanate
CAS: 822-06-0

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 0.07 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute)
Worker Professional: 0.07 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 0.035 mg/m3

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 0.035 mg/m3

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

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

Protection for hands:

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

Respiratory protection:

Use adequate protective respiratory equipment.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Colour: Colourless

Odour: N.A.

pH: Not Relevant

Kinematic viscosity: $\leq 20,5 \text{ mm}^2/\text{sec}$ (40 °C)

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: 23°C / 60°C

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

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1.03 g/cm³

Solubility in water: N.A.

Solubility in oil: N.A.

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

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Flammability: The product is classified Flam. Liq. 3 H226

Kinematic viscosity m²/s (40°C) $\leq 20,5 \text{ mm}^2/\text{sec}$ (40 °C)

Viscosity: = 20.00 s - Method: ASTM D 1200 82 - Section: 3.00 mm

Particle characteristics:

Particle size: N.A.

9.2. Other information

Evaporation rate: N.A.

Miscibility: N.A.

Conductivity: N.A.

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

Avoid contact with combustible materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Toxicological Information of the Preparation

- | | |
|--------------------------------------|---|
| a) acute toxicity | The product is classified: Acute Tox. 4(H332)
ATEmix - Dermal : 10242.1 mg/kg bw
ATEmix - Inhalation (Vapours) : 16.0812 mg/l |
| b) skin corrosion/irritation | The product is classified: Skin Irrit. 2(H315) |
| c) serious eye damage/irritation | The product is classified: Eye Irrit. 2(H319) |
| d) respiratory or skin sensitisation | The product is classified: Skin Sens. 1(H317) |

e) germ cell mutagenicity	Not classified Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified Based on available data, the classification criteria are not met
h) STOT-single exposure	The product is classified: STOT SE 3(H335), STOT SE 3(H336)
i) STOT-repeated exposure	The product is classified: STOT RE 2(H373)
j) aspiration hazard	The product is classified: Asp. Tox. 1(H304)

Toxicological information on main components of the mixture:

Polysocyanate HDI Derivative	a) acute toxicity	LD50 Oral Rat > 2500 mg/kg	OECD Test Guideline 423
		LC50 Inhalation Rat = 0.39 mg/l 4h	OECD Test Guideline 403
		LD50 Skin Rat > 2000 mg/kg	OECD Test Guideline 402
n-butyl acetate	a) acute toxicity	LD50 Oral Rat = 10760 mg/kg	OECD Test Guideline 423
		LC50 Inhalation > 20 mg/l 4h	
		LD50 Skin Rabbit > 14112 mg/kg	OECD Test Guideline 402
1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 1,6-diisocyanatohexane	a) acute toxicity	LD50 Oral Rat > 2500 mg/kg	
		ATE Inhalation Mist = 1.5 mg/l	
		LC50 Inhalation Mist Rat = 0.39 mg/l 4h	
		LD50 Skin Rat > 2000 mg/kg	
xylene	a) acute toxicity	LD50 Oral Mouse = 5627 mg/kg	
		LC50 Inhalation Rat = 6700 Ppm 4h	
		LD50 Skin Rabbit > 5000 mg/kg	
hexamethylene-diisocyanate	a) acute toxicity	LD50 Oral Rat = 746 mg/kg	
		LD50 Skin Rabbit = 599 mg/kg	

11.2. Information on other hazards

Endocrine disrupting properties:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1. Toxicity

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

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
Polysocyanate HDI Derivative	CAS: 28182-81-2 - EINECS: 931-274-8	a) Aquatic acute toxicity : LC50 Fish Danio rerio (zebra fish) > 100 mg/L 96 H
		Daphnia magna (Water flea) > 100 mg/L 48 H
		e) Plant toxicity : Algae > 1000 mg/L 72 H

n-butyl acetate	CAS: 123-86-4 - EINECS: 204- 658-1 - INDEX: 607-025-00-1	a) Aquatic acute toxicity : LC50 Fish Pimephales promelas (fathead minnow) = 18 mg/L 96 H OECD Test Guideline 203 a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) = 44 mg/L 48 H OECD Test Guideline 202 e) Plant toxicity : EC50 Algae Selenastrum capricornutum (green algae) = 397 mg/L 72 H OECD Test Guideline 201 c) Bacteria toxicity : IC50 Microorganisms Tetrahymena pyriformis = 356 mg/L 40 H
1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 1,6-diisocyanatohexane	CAS: 30322-28-2	a) Aquatic acute toxicity : LC50 Fish Danio rerio (zebra fish) > 100 mg/L 96h „Directive 67/548/EEC, Annex V, C.1. a) Aquatic acute toxicity : EC50 Daphnia Daphnia magna (Water flea) > 100 mg/L 48h „Directive 67/548/EEC, Annex V, C.2. a) Aquatic acute toxicity : ErC50 Algae Scenedesmus subspicatus > 1000 mg/L 72h DIN 38412
xylene	CAS: 1330-20-7 - EINECS: 215- 535-7 - INDEX: 601-022-00-9	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) = 2.6 mg/L 96 H a) Aquatic acute toxicity : IC50 Invertebrates Daphnia magna (Water flea) = 1 mg/L 24 H e) Plant toxicity : EC0 Algae Pseudokirchneriella subcapitata (green algae) = 0.44 mg/L 72 H b) Aquatic chronic toxicity : NOEC Fish Oncorhynchus mykiss (rainbow trout) > 1.3 mg/L 56 D e) Plant toxicity : Algae Pseudokirchneriella subcapitata (green algae) = 4.36 mg/L 72 H
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	CAS: 2530-83-8 - EINECS: 219- 784-2	a) Aquatic acute toxicity : LC50 Fish = 55 mg/L 96h Tested according to Directive 92/69/EEC a) Aquatic acute toxicity : EC50 Daphnia = 324 mg/L 48h a) Aquatic acute toxicity : NOEC Algae = 119 mg/kg 7 d b) Aquatic chronic toxicity : NOEC Daphnia > 100 mg/L 21 Days
hexamethylene-di-isocyanate	CAS: 822-06-0 - EINECS: 212- 485-8 - INDEX: 615-011-00-1	a) Aquatic acute toxicity : LC50 Fish Fish = 22 mg/L 96 H a) Aquatic acute toxicity : EC50 Invertebrates Daphnia (water flea) >= 89.1 mg/L 48 H e) Plant toxicity : EC50 Algae algae > 77.4 mg/L 72 H e) Plant toxicity : NOEC Algae algae = 11.7 mg/L 72 H

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration >= 0.1%

12.6. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. Other adverse effects

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

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

SECTION 14: Transport information**14.1. UN number or ID number**

1263

14.2. UN proper shipping name

ADR-Shipping Name: PAINT RELATED MATERIAL

IATA-Shipping Name: PAINT RELATED MATERIAL

IMDG-Shipping Name: PAINT RELATED MATERIAL

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Toxic ingredients quantity: 0.00

Very toxic ingredients quantity: 0.00

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-E, S-E

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR exempt:

ADR-Label: 3

ADR - Hazard identification number: -

ADR-Special Provisions: 163 367 650

ADR-Transport category (Tunnel restriction code): 3 (E)

Air (IATA):

IATA-Passenger Aircraft: 355

IATA-Cargo Aircraft: 366

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisions: A3 A72 A192

Sea (IMDG):

IMDG-Stowage and handling: Category A

IMDG-Segregation: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 163 223 367 955

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

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

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

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

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

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

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

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

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

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

Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2020/878

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

Restrictions related to the product: 3, 40
Restrictions related to the substances contained: 74, 75

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

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Product belongs to category: P5c	5000	50000

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

3: Severe hazard to waters; 3: Severe hazard to waters

SVHC Substances:

No data available

DIRECTIVE 2010/75/EU (VOC directive)

Volatile Organic compounds - VOCs = 39.92 %
Volatile Organic compounds - VOCs = 411.20 g/L
Estimated Total Content of Water 0.00 %
Estimated Total Solid Content 60.08 %

Storage Class (TRGS 510)

Storage Class (TRGS 510) Flammable liquid substances

Classification according to VbF

Classification according to VbF Exempt

Mal-Code (Denmark)

Mal-Code (Denmark)	Mal Factor	Unit of Measure	Revision Status / Number	Regulatory Base
4 - 5	2.124	m3 air/10 g	1993	Administrative determined MAL-Factors

Biocides

REGULATION (EC) No 528/2012

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Code	Description
EUH066	Repeated exposure may cause skin dryness or cracking.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/3	Flam. Liq. 3	Flammable liquid, Category 3
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

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

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
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2.6/3	On basis of test data
3.1/4/Inhal	Calculation method
3.2/2	Calculation method
3.3/2	Calculation method
3.4.2/1	Calculation method
3.8/3	Calculation method
3.8/3	Calculation method
3.9/2	Calculation method
3.10/1	Calculation method

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

Main bibliographic sources:

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

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

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

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

This MSDS cancels and replaces any preceding release.

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

ACGIH: American Conference of Governmental Industrial Hygienists

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

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

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

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