

## Safety Data Sheet

### HYDROFAN HI-TECH CLEARCOAT HARDENER

Safety Data Sheet dated 12/21/2022 version 4



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

### 1.1. Product identifier

Mixture identification:

Trade name: HYDROFAN HI-TECH CLEARCOAT HARDENER

Trade code: L0HH0200

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

Recommended use: Coatings and paints, thinners, paint removers

Poliisocyanic 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).

## 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 Sens. 1B May cause an allergic skin reaction.

STOT SE 3 May cause respiratory irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

### 2.2. Label elements

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

#### Pictograms and Signal Words



Warning

#### Hazard statements

H226 Flammable liquid and vapour.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

#### 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.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
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.

**Contains**

Hexamethylene-1,6-diisocyanate  
Homopolymer

Cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-, homopolymer, polyethylene glycol mono-Me ether-blocked

Reaction mass of ethylbenzene and xylene

**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: HYDROFAN HI-TECH CLEARCOAT HARDENER

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

Qty	Name	Ident. Numb.	Classification	Registration Number
≥40 - ≤50 %	Hexamethylene-1,6-diisocyanate Homopolymer	EC:931-297-3	Acute Tox. 4, H332; STOT SE 3, H335; Skin Sens. 1, H317	01-2119488934-20
≥20 - ≤25 %	Cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-, homopolymer, polyethylene glycol mono-Me ether-blocked	CAS:191427-71-1	Skin Sens. 1B, H317; STOT SE 3, H335	
≥15 - ≤20 %	2-methoxy-1-methylethyl acetate	CAS:108-65-6 EC:203-603-9 Index:607-195-00-7	STOT SE 3, H336; Flam. Liq. 3, H226	01-2119475791-29
≥5 - ≤7 %	Reaction mass of ethylbenzene and xylene	EC:905-588-0	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	01-2119539452-40

**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.

In case of eyes contact:

Wash immediately with water.

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**

N.A.

#### **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).

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### **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.

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### **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

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### **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 between 5° and 35°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

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Community Occupational Exposure Limits (OEL)

	OEL Type	Country	Occupational Exposure Limit
Hexamethylene-1,6-diisocyanate Homopolymer	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 0,02 mg/m <sup>3</sup> 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 <sup>3</sup> The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the category
2-methoxy-1-methylethyl acetate CAS: 108-65-6	EU		Long Term: 275 mg/m <sup>3</sup> - 50 ppm; Short Term: 550 mg/m <sup>3</sup> - 100 ppm Behaviour Indicative 2000/39/EC
	EU		Identifies the possibility of significant uptake through the skin
	EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 274 mg/m <sup>3</sup> - 50 ppm; Short Term: 548 mg/m <sup>3</sup> - 100 ppm Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to

#### Predicted No Effect Concentration (PNEC) values

Hexamethylene-1,6-diisocyanate Homopolymer  
Exposure Route: Fresh Water; PNEC Limit: 0,1 mg/l

Exposure Route: Freshwater sediments; PNEC Limit: 2530 mg/kg dry weight (d.w.)

Exposure Route: Marine water; PNEC Limit: 0,01 mg/l

Exposure Route: Marine water sediments; PNEC Limit: 253 mg/kg dry weight (d.w.)

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l

Exposure Route: Soil; PNEC Limit: 505 mg/kg dry weight (d.w.)

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1 mg/l

2-methoxy-1-methylethyl acetate  
CAS: 108-65-6  
Exposure Route: Fresh Water; PNEC Limit: 0,635 mg/kg

Exposure Route: Intermittent releases (fresh water); PNEC Limit: 6,35 mg/l

Exposure Route: Marine water; PNEC Limit: 0,064 mg/kg

Exposure Route: Freshwater sediments; PNEC Limit: 3,29 mg/kg

Exposure Route: Marine water sediments; PNEC Limit: 0,329 mg/kg

Exposure Route: Soil; PNEC Limit: 0,29 mg/kg

Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l

## Derived No Effect Level (DNEL) values

Hexamethylene-1,6-diisocyanate Homopolymer	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects Worker Professional: 0,5 mg/m <sup>3</sup>
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 1 mg/m <sup>3</sup>
2-methoxy-1-methylethyl acetate CAS: 108-65-6	Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute) Consumer: 33 mg/m <sup>3</sup>
	Exposure Route: Oral; Exposure Frequency: Long Term, systemic effects Consumer: 36 mg/kg
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Consumer: 320 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Consumer: 33 mg/m <sup>3</sup>
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term (acute) Worker Professional: 550 mg/m <sup>3</sup>
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker Professional: 796 mg/kg
	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 275 mg/m <sup>3</sup>

## 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.

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## SECTION 9: Physical and chemical properties

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

Physical State Liquid

Color: Colourless

Odour: N.A.

pH: Not Relevant

Kinematic viscosity: > 20,5 mm<sup>2</sup>/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: 1.07 g/cm<sup>3</sup>

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 m<sup>2</sup>/s (40°C) > 20,5 mm<sup>2</sup>/sec (40 °C)

Viscosity: = 61.00 s - Method: ASTM D 1200 82 - Section: 2.00 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 : 20952.4 mg/kg bw ATEmix - Inhalation (Mist) : 2.98762 mg/l
b) skin corrosion/irritation	Not classified Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1B(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)
i) STOT-repeated exposure	Not classified Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified Based on available data, the classification criteria are not met

**Toxicological information on main components of the mixture:**

Hexamethylene-1,6-diisocyanate Homopolymer	a) acute toxicity	LD50 Oral Rat > 2000, mg/kg	OECD Test Guideline 423
		LD50 Skin Rat > 2000, mg/kg	OECD Test Guideline 402
		LC50 Inhalation Rat = 0,39 mg/l 4h	OECD Test Guideline 403
2-methoxy-1-methylethyl acetate	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg	
		LC0 Inhalation Rat > 2000 Ppm 3h	
		LD50 Skin Rabbit > 5000 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.

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## 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
Hexamethylene-1,6-diisocyanate Homopolymer	EINECS: 931-297-3	a) Aquatic acute toxicity : LC50 Fish Danio rerio (zebra fish) > 100 mg/L 96 H - „Directive 67/548/EEC, Annex V, C.1.  a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) > 100 mg/L 48h
2-methoxy-1-methylethyl acetate	CAS: 108-65-6 - EINECS: 203-603-9 - INDEX: 607-195-00-7	a) Aquatic acute toxicity : LC50 Fish Oncorhynchus mykiss (rainbow trout) 100 mg/L 96 H  a) Aquatic acute toxicity : EC50 Invertebrates Daphnia magna (Water flea) > 500 mg/L 48 H  e) Plant toxicity : EC50 Algae Selenastrum capricornutum (green algae) > 1000 mg/L 96 H  b) Aquatic chronic toxicity : NOEC Fish Oryzias latipes (Japanese medaka) = 47,5 mg/L 14 D  b) Aquatic chronic toxicity : NOEC Invertebrates Daphnia magna (Water flea) >= 100 mg/L 21 D  e) Plant toxicity : NOEC Algae Selenastrum capricornutum (green algae) >= 1000 mg/L 96 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 Ingredients are present

### 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

N.A.

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## 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.

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## 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-Technical name: PAINT RELATED MATERIAL

IMDG-Technical 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 Qty: 0.00

High Toxicity Ingredients Qty: 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 Provisioning: A3 A72 A192

Sea ( IMDG ) :

IMDG-Stowage Code: Category A

IMDG-Stowage Note: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisioning: 163 223 367 955

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

N.A.

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**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**

Product belongs to category: P5c	5000	Upper-tier threshold (tonnes)	50000
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Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

**German Water Hazard Class.**

3: Severe hazard to waters

**SVHC Substances:**

No data available

**Dir. 2010/75/EC (VOC directive)**

Volatile Organic compounds - VOCs = 30.50 %

Volatile Organic compounds - VOCs = 326.96 g/L

Estimated Total Content of Water 0.00 %

Estimated Total Solid Content 69.50 %

**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	2091	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
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.
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.

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
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
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

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

<b>Classification according to Regulation (EC) Nr. 1272/2008</b>	<b>Classification procedure</b>
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2.6/3	On basis of test data
3.1/4/Inhal	Calculation method
3.4.2/1B	Calculation method
3.8/3	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.

**Paragraphs modified from the previous revision:**

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