



according to Regulation (EC) No 1907/2006

#### 8930 PU Hardener

Revision date: 25.06.2024 Product code: 50065 Page 1 of 12

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

### 1.1. Product identifier

8930 PU Hardener

Substance name: Homopolymer of Hexamethylene Diisocyanate

REACH Registration Number: 01-2119488934-20-0000

CAS No: 28182-81-2 EC No: 931-297-3

UFI: 5ANF-V4VW-400R-793Y

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

#### Use of the substance/mixture

Hardener (Crosslinker)

#### Uses advised against

Do not use for injecting or spraying.

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

Company name: Kisling (Deutschland) GmbH

Street: Salzstraße 15
Place: D-74676 Niedernhall
Telephone: +49 7940 50961 61

E-mail: customerservice@kisling.com

Contact person: Product Compliance Telephone: +49 7940 5096 143

E-mail: compliance@kisling.com

Internet: www.kisling.com

<u>1.4. Emergency telephone</u> 24 hr. emergency phone number +1 872 5888271 (KAR)

number: Medicines & Poisons Info Office +356 2545 6508

#### **SECTION 2: Hazards identification**

#### 2.1. Classification of the substance or mixture

## Regulation (EC) No 1272/2008

Acute Tox. 4; H332 Skin Sens. 1; H317 STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

## 2.2. Label elements

# Regulation (EC) No 1272/2008

Signal word: Warning

Pictograms:



# **Hazard statements**

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

# **Precautionary statements**

P261 Avoid breathing Vapour.

P280 Wear protective gloves and eye protection/face protection.



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P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Special labelling of certain mixtures

EUH204 Contains isocyanates. May produce an allergic reaction.

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

use

Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

Pictograms:



**Hazard statements** 

H317

**Precautionary statements** 

P261-P280-P333+P313-P362+P364

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

### 3.1. Substances

### Relevant ingredients

CAS No	Chemical name				
	EC No	Index No	REACH No		
	Classification (Regulati	on (EC) No 1272/2008)	·		
28182-81-2	Homopolymer of Hexamethylene Diisocyanate			50 - < 100 %	
	931-297-3		01-2119488934-20-0000		
	Acute Tox. 4, Skin Sen	s. 1, STOT SE 3; H332 H317 H335	·		
822-06-0	hexamethylene-di-isoc	yanate		0.1 - < 1 %	
	212-485-8	615-011-00-1			
	Acute Tox. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT SE 3; H330 H302 H315 H319 H334 H317 H335				

Full text of H and EUH statements: see section 16.

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No Chemical name Specific Conc. Limits, M-factors and ATE		Quantity
G772 772			
28182-81-2	931-297-3	Homopolymer of Hexamethylene Diisocyanate	50 - < 100 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1.5 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg		
822-06-0	212-485-8	hexamethylene-di-isocyanate	0.1 - < 1 %
inhalation: ATE = 0.5 mg/l (vapours); inhalation: ATE = 0.05 mg/l (dusts or mists); dermal: LD50 = > 7000 mg/kg; oral: LD50 = 959 mg/kg Resp. Sens. 1; H334: >= 0.5 - 100 Skin Sens. 1; H317: >= 0.5 - 100			

# **SECTION 4: First aid measures**

# 4.1. Description of first aid measures

### **General information**

Never give anything by mouth to an unconscious person or a person with cramps.

If unconscious but breathing normally, place in recovery position and seek medical advice.





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#### After inhalation

Remove casualty to fresh air and keep warm and at rest.

#### After contact with skin

Wash with plenty of water/soap. Do not wash with:

### After contact with eyes

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

### After ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Call a physician immediately. Do NOT induce vomiting.

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

No information available.

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

No information available.

## **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

#### Suitable extinguishing media

Powder

In case of major fire and large quantities: Water spray jet

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

Burning produces heavy smoke.

Carbon monoxide, Carbon dioxide, Nitrogen oxides (NOx), Isocyanates, Hydrogen cyanide (hydrocyanic acid),

Danger of serious damage to health by prolonged exposure. Use appropriate respiratory protection.

Emergency cooling must be provided for in case of a fire in the vicinity.

## 5.3. Advice for firefighters

Use water spray jet to protect personnel and to cool endangered containers.

#### Additional information

No information available.

## **SECTION 6: Accidental release measures**

# 6.1. Personal precautions, protective equipment and emergency procedures

# General advice

Keep away from sources of ignition - No smoking. Ventilate affected area.

Avoid breathing dust/fume/gas/mist/vapours/spray.

See protective measures under point 7 and 8.

# For non-emergency personnel

No information available.

# For emergency responders

No information available.

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

# 6.3. Methods and material for containment and cleaning up

# For containment

Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

Dispose of contents/container to hazardous or special waste collection point.



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#### Other information

The contaminated area should be cleaned up immediately with:

- 1 a mixture of 95% water and 5% sodium carbonate & Soap
- 2 20ml anionic surfactants in aqueous solution, 700 ml Water, 350 ml Polyethylene glycol 400
- 3 30% Laundry detergents (monoethanolamine), 70 %

Add the decontaminant to the remnants and let stand for several days in a non-sealed container until no further reaction is observed. Once reaction is finished, close container and dispose of.

#### 6.4. Reference to other sections

Disposal: see section 13

### **SECTION 7: Handling and storage**

# 7.1. Precautions for safe handling

#### Advice on safe handling

Examination of lung function should be carried out on a regular basis on persons spraying this product.

Avoid release to the environment. In use, may form flammable/explosive vapour-air mixture.

Only use the material in places where open light, fire and other flammable sources can be kept away. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Provide earthing of containers, equipment, pumps and ventilation facilities. Use non-sparking tools.

Handle and open container with care. Formation of: Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

Never use pressure to empty container. Keep/Store only in original container.

### Advice on general occupational hygiene

Avoid contact with skin, eyes and clothes. Avoid breathing dust/fume/gas/mist/vapours/spray. When using do not eat, drink or smoke.

# Further information on handling

Do not allow to enter into surface water or drains.

# 7.2. Conditions for safe storage, including any incompatibilities

# Hints on joint storage

Do not store together with:

# Further information on storage conditions

Keep container dry.

Keep away from sources of ignition - No smoking. Protect from direct sunlight.

# **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

# **DNEL/DMEL values**

CAS No	Name of agent				
DNEL type		Exposure route	Effect	Value	
28182-81-2	28182-81-2 Homopolymer of Hexamethylene Diisocyanate				
Worker DNEL, long-term		inhalation	local	0.5 mg/m³	
Worker DNEL, acute		inhalation	local	1 mg/m³	
822-06-0 hexamethylene-di-isocyanate					
Worker DNEL, long-term		inhalation	local	0,035 mg/m³	
Worker DNEL,	acute	inhalation	local	0,07 mg/m³	



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#### **PNEC values**

CAS No	Name of agent			
Environment	al compartment	Value		
28182-81-2	11-2 Homopolymer of Hexamethylene Diisocyanate			
Freshwater		0.1 mg/l		
Freshwater (	intermittent releases)	1 mg/l		
Marine water	r	0.01 mg/l		
Freshwater s	sediment	2530 mg/kg		
Marine sedin	253 mg/kg			
Micro-organisms in sewage treatment plants (STP)				
Soil		505 mg/kg		
822-06-0	hexamethylene-di-isocyanate			
Freshwater		0,049 mg/l		
Marine water	ſ	0,005 mg/l		
Freshwater s	0,674 mg/kg			
Marine sedin	0,067 mg/kg			
Micro-organi	8,42 mg/l			
Soil		0,523 mg/kg		

### Additional advice on limit values

Examination of lung function should be carried out on a regular basis on persons spraying this product.

#### 8.2. Exposure controls





# Appropriate engineering controls

Provide adequate ventilation.

If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

# Individual protection measures, such as personal protective equipment

## Eye/face protection

Wear eye/face protection.

# **Hand protection**

Suitable material: Butyl caoutchouc (butyl rubber) See information supplied by the manufacturer.

# Skin protection

(Natural fibres (e.g. cotton) / heat-resistant synthetic fibres )

# **Respiratory protection**

During spraying wear suitable respiratory equipment.

# Thermal hazards

No information available.

### **Environmental exposure controls**

Do not allow to enter into surface water or drains.



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### **SECTION 9: Physical and chemical properties**

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

Physical state: Liquid
Colour: colourless
Odour: characteristic

Test method

Melting point/freezing point:

Boiling point or initial boiling point and

not determined
not determined

boiling range:

Flammability: not applicable

Lower explosion limits:

Upper explosion limits:

not determined

Tlash point:

not determined

203 °C

Auto-ignition temperature: ca. 440 °C DIN 51794

Decomposition temperature: ca. 151 °C pH-Value: not determined Water solubility: Immiscible

(at 15 °C)

Solubility in other solvents

not determined

Partition coefficient n-octanol/water: not determined Vapour pressure: <0,00001 hPa

(at 20 °C)

Density (at 20 °C): 1,15 g/cm³
Relative vapour density: not determined

# 9.2. Other information

#### Information with regard to physical hazard classes

Explosive properties not determined Oxidizing properties not determined

# Other safety characteristics

Evaporation rate: not determined Solid content: not determined Pour point: - 24 °C

Viscosity / dynamic: 958 mPa·s DIN 53019

(at 20 °C)

# **SECTION 10: Stability and reactivity**

# 10.1. Reactivity

(Yes, slowly) Formation of:

# 10.2. Chemical stability

No information available.

# 10.3. Possibility of hazardous reactions

Due to gaseous decomposition products, overpressure can occur in tightly sealed containers. Danger of



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bursting container.

### 10.4. Conditions to avoid

In case of warming: Thermal decomposition.

### 10.6. Hazardous decomposition products

Carbon monoxide (monomer)

### **Further information**

No information available.

# **SECTION 11: Toxicological information**

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

#### **Acute toxicity**

Harmful if inhaled.

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
28182-81-2	Homopolymer of Hexam	ethylene Dii	socyanate			
	oral	LD50 mg/kg	> 2000	Rat	Study report (2006)	OECD Guideline 423
	dermal	LD50 mg/kg	> 2000	Rat	Study report (2004)	OECD Guideline 402
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1.5 mg/l			
822-06-0	hexamethylene-di-isocyanate					
	oral	LD50 mg/kg	959	Rat	Study report (1970)	OECD Guideline 401
	dermal	LD50 mg/kg	> 7000	Rat	Study report (1985)	OECD Guideline 402
	inhalation vapour	ATE	0.5 mg/l			
	inhalation dust/mist	ATE	0.05 mg/l			

# Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

### Sensitising effects

May cause an allergic skin reaction. (Homopolymer of Hexamethylene Diisocyanate;

hexamethylene-di-isocyanate)

Contains isocyanates. May produce an allergic reaction.

### Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

## STOT-single exposure

May cause respiratory irritation. (Homopolymer of Hexamethylene Diisocyanate)

## STOT-repeated exposure

Based on available data, the classification criteria are not met.

# **Aspiration hazard**

Based on available data, the classification criteria are not met.

## Information on likely routes of exposure

No information available.



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# Specific effects in experiment on an animal

No information available.

#### Additional information on tests

No information available.

#### **Practical experience**

May cause respiratory irritation. Potential hazards:

The product is skin resorptive.

Irritating to eyes. (reversible.)

# 11.2. Information on other hazards

### Other information

Isocyanate containing product.

Respiratory or skin sensitisation/ May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

### **Further information**

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

# **SECTION 12: Ecological information**

### 12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h]   [d]	Species	Source	Method
28182-81-2	Homopolymer of Hexamethylene Diisocyanate						
	Acute bacteria toxicity	EC50 mg/l ( )	> 10000		activated sludge, domestic	Study report (2005)	other: Directive 88/302/EEC, Part C
822-06-0	hexamethylene-di-isocyanate						
	Acute algae toxicity	ErC50 mg/l	> 100		Desmodesmus subspicatus	REACh Registration Dossier	EU Method C.3
	Acute bacteria toxicity	EC50	842 mg/l	3 h	Activated sludge	REACh Registration Dossier	other: Commission Directive 88/302/EEC;

# 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential

No information available.

#### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
28182-81-2	Homopolymer of Hexamethylene Diisocyanate	8.38
822-06-0	hexamethylene-di-isocyanate	3,2



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#### **BCF**

CAS No	Chemical name	BCF	Species	Source
28182-81-2	Homopolymer of Hexamethylene Diisocyanate	706	none, estimated by calculation	Study report (2014)
822-06-0	hexamethylene-di-isocyanate	59,6	none, estimated by calculation	REACh Registration D

# 12.4. Mobility in soil

No information available.

### 12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

### 12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

#### 12.7. Other adverse effects

No information available.

#### **Further information**

Do not allow to enter into surface water or drains.

## **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

#### **Disposal recommendations**

Do not allow to enter into surface water or drains.

## List of Wastes Code - residues/unused products

080501 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF

COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes not otherwise specified in 08; waste isocyanates; hazardous waste

### List of Wastes Code - used product

080501 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF

COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes not otherwise specified in 08; waste isocyanates; hazardous waste

# List of Wastes Code - contaminated packaging

080501 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF

COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes not otherwise specified in 08; waste isocyanates; hazardous waste

#### Contaminated packaging

Completely emptied packages can be recycled.

## **SECTION 14: Transport information**

# Land transport (ADR/RID)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

## Inland waterways transport (ADN)

• • •	
14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

## Marine transport (IMDG)

**14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.



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14.2. UN proper shipping name:No dangerous good in sense of this transport regulation.14.3. Transport hazard class(es):No dangerous good in sense of this transport regulation.14.4. Packing group:No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:No dangerous good in sense of this transport regulation.14.2. UN proper shipping name:No dangerous good in sense of this transport regulation.14.3. Transport hazard class(es):No dangerous good in sense of this transport regulation.14.4. Packing group:No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

Moisture-sensitive.

Short-term maximum storage temperature permitted: +50°C

Store separately.

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

No dangerous good in sense of this transport regulation.

# **SECTION 15: Regulatory information**

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

### **EU** regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 74

Information according to Directive

2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

# National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile

work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of

child-bearing age.

Water hazard class (D): 1 - slightly hazardous to water

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

#### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

# **SECTION 16: Other information**



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#### Abbreviations and acronyms

Acute Tox: Acute toxicity Skin Irrit: Skin irritation Eye Irrit: Eye irritation

Resp. Sens: Respiratory sensitisation

Skin Sens: Skin sensitisation

STOT SE: Specific target organ toxicity - single exposure

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

**UN: United Nations** 

CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate LC50: Lethal concentration, 50%

LD50: Lethal dose, 50% LL50: Lethal loading, 50% EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic vPvB: very persistent, very bioaccumulative

ADR: Accord européen sur le transport des marchandises dangereuses par Route

(European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Regulations concerning the international carriage of dangerous goods by rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)

IMDG: International Maritime Code for Dangerous Goods

EmS: Emergency Schedules MFAG: Medical First Aid Guide

IATA: International Air Transport Association ICAO: International Civil Aviation Organization

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container SVHC: Substance of Very High Concern

# Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed. H315 Causes skin irritation.

H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

H330 Fatal if inhaled. H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

EUH204 Contains isocyanates. May produce an allergic reaction.

#### **Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of





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processing, the information on this safety data sheet is not necessarily valid for the new made-up material.