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

1.1. Product identifier

PU Hardener 8930

Substance name:	Hexamethylen-1,6-diisocyanat homopolymer
CAS No:	28182-81-2
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

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 5096161	
E-mail:	info@kisling.com	
Contact person:	Isabel Winter	Telephone: +49 7941 92054087
E-mail:	info@kisling.com	
Internet:	www.kisling.com	

1.4. Emergency telephone number:

24 hr. emergency phone number +1 872 5888271 (KAR)
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 dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves and eye/face protection.
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

2.3. Other hazards

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.
This mixture does not contain any substances presenting a health or environmental hazard within the means of Regulation (EC) No. 1272/2008, assigned a Community workplace exposure limit, classified as PBT/vPvB or included in the Candidate List.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer			50 - < 100 %
	Acute Tox. 4, Skin Sens. 1, STOT SE 3; H332 H317 H335			
822-06-0	hexamethylene-di-isocyanate			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	Quantity
	Specific Conc. Limits, M-factors and ATE		
28182-81-2		Hexamethylen-1,6-diisocyanat homopolymer	50 - < 100 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = 0,390 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

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes

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

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Non-flammable.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe vapour/aerosol. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

Hints on joint storage

No special measures are necessary.

7.3. Specific end use(s)

No information available.

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	Hexamethylen-1,6-diisocyanat homopolymer			
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

PNEC values

CAS No	Name of agent	
Environmental compartment		Value
28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer	
Freshwater		0,1 mg/l
Freshwater sediment		2530 mg/kg
Marine sediment		253 mg/kg
Micro-organisms in sewage treatment plants (STP)		100 mg/l
Soil		505 mg/kg
822-06-0	hexamethylene-di-isocyanate	
Freshwater		0,049 mg/l
Marine water		0,005 mg/l
Freshwater sediment		0,674 mg/kg
Marine sediment		0,067 mg/kg
Micro-organisms in sewage treatment plants (STP)		8,42 mg/l
Soil		0,523 mg/kg

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

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:	not determined	
Boiling point or initial boiling point and boiling range:	not determined	
Flammability:	not applicable not applicable	
Lower explosion limits:	not determined	
Upper explosion limits:	not determined	
Flash point:	203 °C	
Auto-ignition temperature:	ca. 440 °C	DIN 51794
Decomposition temperature:	ca. 151 °C	
pH-Value:	not determined	
Water solubility: (at 15 °C)	Immiscible	
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:	not determined	
Vapour pressure: (at 20 °C)	<0,00001 hPa	
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: (at 20 °C)	958 mPa·s	DIN 53019

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

none

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

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	Hexamethylen-1,6-diisocyanat homopolymer					
	oral	LD50 mg/kg	>2000	Rat	Pre-supplier/manufacturer	OECD 423
	dermal	LD50 mg/kg	>2000	Rat	Pre-supplier/manufacturer	OECD 402
	inhalation vapour	ATE	11 mg/l			
	inhalation (4 h) dust/mist	LC50 mg/l	0,390	Rat	Pre-supplier/manufacturer	OECD 403
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

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

Sensitising effects

Contains isocyanates. May produce an allergic reaction.May cause an allergic skin reaction. (Hexamethylen-1,6-diisocyanat homopolymer; hexamethylene-di-isocyanate)

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation. (Hexamethylen-1,6-diisocyanat homopolymer)

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.

11.2. Information on other hazards

Other information

No data available

Further information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

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	Hexamethylen-1,6-diisocyanat homopolymer						
	Acute fish toxicity	LC50	>100 mg/l	96 h	Danio rerio (zebrafish)	Pre-supplier/manufacturer	
	Acute algae toxicity	ErC50	199 mg/l	72 h	Scenedesmus subspicatus	Pre-supplier/manufacturer	
	Acute crustacea toxicity	EC50	>100 mg/l	48 h	Daphnia magna (Big water flea)	Pre-supplier/manufacturer	
	Acute bacteria toxicity	(EC50	>10000 mg/l)	3 h	Activated sludge	Pre-supplier/manufacturer	
822-06-0	hexamethylene-di-isocyanate						
	Acute algae toxicity	ErC50	> 100 mg/l	72 h	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

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer	8,38
822-06-0	hexamethylene-di-isocyanate	3,2

BCF

CAS No	Chemical name	BCF	Species	Source
822-06-0	hexamethylene-di-isocyanate	59,6	none, estimated by calculation	REACh Registration D

12.4. Mobility in soil

No data 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

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

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

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

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.
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 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 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

Abbreviations and acronyms

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
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
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

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 information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible

for adhering to existing laws and regulations.