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

#### 1.1 Product identifier

**HENSOTOP 2K PU Härter** 

Registration number 01-2119488934-20-XXXX

IUPAC Hexane, 1,6-diisocyanato-, homopolymer

**EINECS/ELINCS** 931-297-3 **CAS** 28182-81-2

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

1.2.1 Relevant uses

Top coat

1.2.2 Uses advised against

None known.

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

**Company** Rudolf Hensel GmbH

Lauenburger Landstr. 11 21039 Börnsen / GERMANY Phone +49 (0)40-72 10 62 10 Fax +49 (0)40-72 10 62 52 Homepage www.rudolf-hensel.de E-mail info@rudolf-hensel.de

Address enquiries to

Technical information info@rudolf-hensel.de

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)

Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Company +49 (0)40-72 10 62 10 (7:00 - 17:00) 0172 4115390 (17:00 - 07:00)

# **SECTION 2: Hazards identification**

# 2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Skin Sens. 1: H317 May cause an allergic skin reaction.

Acute Tox. 4: H332 Harmful if inhaled.

STOT SE 3: H335 May cause respiratory irritation.

# 2.2 Label elements

**Hazard pictograms** 



Signal word WARNING

Contains: Hexane, 1,6-diisocyanato-, homopolymer EINECS: 931-297-3

**Hazard statements** H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

**Precautionary statements** P261 Avoid breathing vapours.

P280 Wear protective gloves / protective clothing / eye protection / face protection. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P333+P313 If skin irritation or rash occurs: Get medical advice / attention. P362+P364 Take off contaminated clothing and wash it before reuse. P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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

Special labelling EUH204 Contains isocyanates. May produce an allergic reaction.



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#### 2.3 Other hazards

Human health dangers Contains no ingredients with endocrine-disrupting properties.

**Environmental hazards** Does not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.

# SECTION 3: Composition / Information on ingredients

#### **Substances**

#### The product is a substance.

Range [%]	Substance
~ 100	Hexane, 1,6-diisocyanato-, homopolymer
	CAS: 28182-81-2, EINECS/ELINCS: 931-297-3, Reg-No.: 01-2119488934-20-XXXX
	GHS/CLP: Acute Tox. 4: H332 - STOT SE 3: H335 - Skin Sens. 1: H317
<0.1	Hexamethylene-diisocyanate
	CAS: 822-06-0, EINECS/ELINCS: 212-485-8, EU-INDEX: 615-011-00-1, Reg-No.: 01-2119457571-37-XXXX
	GHS/CLP: Acute Tox. 4: H302 - Acute Tox. 1: H330 - Skin Irrit. 2: H315 - Eye Irrit. 2: H319 - Resp. Sens. 1: H334 - STOT SE 3: H335 - Skin Sens. 1: H317
	SCL [%]: >=0.5: Resp. Sens. 1: H334, >=0.5: Skin Sens. 1: H317

Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%. Comment on component parts

For full text of H-statements: see SECTION 16.

#### 3.2 Mixtures

not applicable

### **SECTION 4: First aid measures**

### **Description of first aid measures**

General information Take off contaminated clothing and wash before reuse.

Inhalation Remove the victim into fresh air and keep him calm.

In the event of symptoms seek medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.

Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Ingestion Consult a doctor immediately.

Do not induce vomiting.

Rinse out mouth and give plenty of water to drink.

# Most important symptoms and effects, both acute and delayed

Irritant effects Allergic reactions

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

Treat symptomatically.

# SECTION 5: Fire-fighting measures

#### **Extinguishing media** 5.1

Suitable extinguishing media Water spray jet.

Carbon dioxide. Foam. Dry powder.

Extinguishing media that must not

be used

Full water jet.



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

In the event of fire the following can be released:

Carbon monoxide (CO) Nitrogen oxides (NOx). Hydrogen cyanide (HCN).

#### 5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

Collect contaminated firefighting water separately, must not be discharged into the drains.

# **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment (protective gloves, safety glasses, protective clothing). Ensure adequate ventilation.

### 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

# 6.3 Methods and material for containment and cleaning up

Take up mechanically.

Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder,

diatomaceous earth).

Dispose of absorbed material in accordance within the regulations.

## 6.4 Reference to other sections

See SECTION 8+13

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Provide suitable vacuuming at the processing machines and in the processing area.

Do not eat, drink, smoke or take drugs at work.

Take off contaminated clothing and wash before reuse.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.

Use barrier skin cream.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Prevent penetration into the ground.

Do not store together with food and animal food/diet.

Keep container tightly closed.

Keep container in a well-ventilated place. Keep in a cool place. Store in a dry place.

# 7.3 Specific end use(s)

See product use, SECTION 1.2



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# SECTION 8: Exposure controls / personal protection

### 8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Substance	
Hexamethylene-diisocyanate	
CAS: 822-06-0, EINECS/ELINCS: 212-485-8, EU-INDEX: 615-011-00-1, Reg-No.: 01-2119457571-37-XXXX	
Long-term exposure: 0,02 mg/m³, as NCO, Sen	
Short-term exposure (15-minute): 0,07 mg/m³	
Hexane, 1,6-diisocyanato-, homopolymer	
CAS: 28182-81-2, EINECS/ELINCS: 931-297-3, Reg-No.: 01-2119488934-20-XXXX	
Long-term exposure: 0,02 mg/m³, as NCO, Sen	
Short-term exposure (15-minute): 0,07 mg/m³	

### **DNEL**

Substance	
Hexamethylene-diisocyanate, CAS: 822-06-0	
Industrial, inhalative, Long-term - local effects, 0.035 mg/m³	
Industrial, inhalative, Acute - local effects, 0.07 mg/m³	
Hexane, 1,6-diisocyanato-, homopolymer	
Industrial, inhalative, Long-term - local effects, 0.5 mg/m³	
Industrial, inhalative, Acute - local effects, 1 mg/m³	

### **PNEC**

Substance		
Hexamethylene-diisocyanate, CAS: 822-06-0		
soil, 0.523 mg/kg soil dw		
sediment (seawater), 0.067 mg/kg sediment dw		
sediment (freshwater), 0.674 mg/kg sediment dw		
seawater, 0.005 mg/L		
freshwater, 0.049 mg/L		
sewage treatment plants (STP), 8.42 mg/l		
Hexane, 1,6-diisocyanato-, homopolymer		
sewage treatment plants (STP), 100 mg/l		
soil, 505 mg/kg		
sediment (seawater), 253 mg/kg		
sediment (freshwater), 2530 mg/kg		
seawater, 0.01 mg/L		
freshwater, 0.1 mg/L		



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#### 8.2 Exposure controls

Additional advice on system design Ensure adequate ventilation on workstation.

Measurement methods for taking workplace measurements must meet the performance

requirements of DIN EN 482. For example, recommendations are given in the IFA's list of

hazardous substances.

Eye protection Safety glasses. (EN 166:2001)

0.5mm Butyl rubber, >480 min (EN 374-1/-2/-3). Hand protection

The details concerned are recommendations. Please contact the glove supplier for further

information.

Skin protection Protective clothing (EN 340)

Other Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols.

Personal protective equipment should be selected specifically for the working place,

depending on concentration and quantity handled. The resistance of this equipment to

chemicals should be ascertained with the respective supplier.

In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear Respiratory protection

appropriate respiratory protection.

Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)

Thermal hazards

Delimitation and monitoring of the

environmental exposition

Protect the environment by applying appropriate control measures to prevent or limit

emissions.

# SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Physical state liquid **Form** liquid Color colourless Odor faintly

**Odour threshold** not determined not applicable pH-value pH-value [1%] not applicable Boiling point [°C] not determined

Flash point [°C] 203

Flammability (solid, gas) [°C] not applicable Lower explosion limit not applicable **Upper explosion limit** not applicable

**Oxidising properties** 

Vapour pressure/gas pressure [kPa] < 0.000001 (20°C) Density [g/cm<sup>3</sup>] 1.15 (20 °C / 68,0 °F) Relative density not determined Bulk density [kg/m³] not applicable Solubility in water insoluble

reacts with water

Solubility other solvents No information available.

Partition coefficient [n-octanol/water] ca. 8.38

Kinematic viscosity ca. 958 mPa.s (20°C)

Relative vapour density not relevant **Evaporation speed** not relevant Melting point [°C] not determined **Auto-ignition temperature** ca. 440 Decomposition temperature [°C] ca. 150 Particle characteristics not relevant

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# 9.2 Other information

none

# **SECTION 10: Stability and reactivity**

# 10.1 Reactivity

No dangerous reactions known if used as directed.

# 10.2 Chemical stability

The product is stable under standard conditions.

### 10.3 Possibility of hazardous reactions

Reactions with water, with formation of carbon dioxide.

### 10.4 Conditions to avoid

See SECTION 7

# 10.5 Incompatible materials

Water

# 10.6 Hazardous decomposition products

No hazardous decomposition products known.



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# **SECTION 11: Toxicological information**

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

#### Acute oral toxicity

Product

ATE-mix, oral, > 2000 mg/kg

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

LD50, oral, Rat, 746 mg/kg bw

Hexane, 1,6-diisocyanato-, homopolymer

LD50, oral, Rat, > 2000 mg/kg (OECD 423)

#### Acute dermal toxicity

Product

ATE-mix, dermal, > 2000 mg/kg

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

LD50, dermal, Rat, > 7000 mg/kg bw

Hexane, 1,6-diisocyanato-, homopolymer

LD50, dermal, Rat, > 2000 mg/kg (OECD 402)

LD50, dermal, Rabbit, > 2000 mg/kg

## Acute inhalational toxicity

Product

ATE-mix, inhalativ (mist), 1 - <5 mg/l 4h

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

LC50, inhalative, Rat, 0.124 mg/l 4h

NOAEL, inhalative, Rat, < 0.055 mg/l

Hexane, 1,6-diisocyanato-, homopolymer

LC50, inhalative, Rat (female), 0.390 mg/l/4h (OECD 403)

Conversion value, inhalativ (mist), 1.5 mg/l/4h

## Serious eye damage/irritation

Non-corrosive / non-irritating.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

Eye, irritant

Hexane, 1,6-diisocyanato-, homopolymer

Eye, non-irritating

## Skin corrosion/irritation

Non-corrosive / non-irritating.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

dermal, irritant

Hexane, 1,6-diisocyanato-, homopolymer



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dermal, non-irritating

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

inhalative, sensitising

dermal, sensitising

Hexane, 1,6-diisocyanato-, homopolymer

dermal, sensitising

Specific target organ toxicity — single exposure

May cause respiratory irritation.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

inhalative, irritant

Hexane, 1,6-diisocyanato-, homopolymer

inhalative, irritant

Specific target organ toxicity — repeated exposure

No classification.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, oral, Rat, 35 μg/m³ (chronic), The effects observed are not sufficient for classification.

Hexane, 1,6-diisocyanato-, homopolymer

NOAEC, oral, Rat, 3.3 mg/m³ (subchronic), The effects observed are not sufficient for classification.

Mutagenicity

There is no evidence of any mutagenic effects.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

in vivo, no adverse effect observed

in vitro, no adverse effect observed

Reproduction toxicity

There is no evidence of any reproductive toxicity effects.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, inhalative, Rat, 2.03 mg/m³ (subchronic), no adverse effect observed

Carcinogenicity

There is no evidence of any carcinogenic effects.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, inhalative, Rat, 1.15 mg/m³ (chronic), no adverse effect observed

**Aspiration hazard** 

No classification.

General remarks

none

11.2 Information on other hazards

**Endocrine disrupting properties** 

Contains no ingredients with endocrine-disrupting properties.

Other information



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# SECTION 12: Ecological information

#### 12.1 Toxicity

Product

Based on the available information, the classification criteria are not fulfilled.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

EC50, (72h), Desmodesmus subspicatus, > 77.4 mg/l (IUCLID)

LC0, (96h), Brachidanio rerio, > 82.8 mg/l (IUCLID)

Hexane, 1,6-diisocyanato-, homopolymer

EC50, (3h), Bacteria, > 10 000 mg/L

EL0, (48h), Daphnia magna, >= 100 mg/L

LL50, (96h), Danio rerio, > 100 mg/L

ErL50, (72h), Desmodesmus subspicatus, 199 mg/L

# 12.2 Persistence and degradability

Behaviour in environment not determined

compartments

Behaviour in sewage plant not determined Biological degradability not determined

# 12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

### 12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

### 12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

# 12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

## 12.7 Other adverse effects

None known.



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# **SECTION 13: Disposal considerations**

#### 13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

**Product** 

Dispose of as hazardous waste.

Disposal in an incineration plant in accordance with the regulations of the local authorities.

080501\* Waste no. (recommended)

Contaminated packaging

Uncontaminated packaging may be taken for recycling.

Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150110\* packaging containing residues of or contaminated by hazardous substances

### **SECTION 14: Transport information**

#### 14.1 UN number or ID number

Transport by land according to

ADR/RID

not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with

**IMDG** 

not applicable

Air transport in accordance with IATA not applicable

# 14.2 UN proper shipping name

Transport by land according to

ADR/RID

NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

**IMDG** 

Marine transport in accordance with NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

# 14.3 Transport hazard class(es)

Transport by land according to

not applicable

ADR/RID

Inland navigation (ADN) not applicable

Marine transport in accordance with

IMDG

Air transport in accordance with IATA not applicable

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#### 14.4 Packing group

Transport by land according to

ADR/RID

not applicable

Inland navigation (ADN)

not applicable

Marine transport in accordance with

**IMDG** 

not applicable

Air transport in accordance with IATA not applicable

#### 14.5 Environmental hazards

Transport by land according to

ADR/RID

no

no

Inland navigation (ADN)

Marine transport in accordance with no

IMDG

Air transport in accordance with IATA no

### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

# 14.7 Maritime transport in bulk according to IMO instruments

not applicable

## SECTION 15: Regulatory information

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

**EEC-REGULATIONS** 2008/98/EC 2000/532/EC); 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006

(REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131;

(EU) 517/2014

TRANSPORT-REGULATIONS ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2022)

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK

REACH; GB CLP.

- Observe employment restrictions

for people

Observe employment restrictions for mothers-to-be and nursing mothers. Observe

employment restrictions for young people.

- VOC (2010/75/CE) 0 %

# 15.2 Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

#### **SECTION 16: Other information**

# 16.1 Hazard statements (SECTION 3)

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

H319 Causes serious eye irritation.

H315 Causes skin irritation. H330 Fatal if inhaled.

H302 Harmful if swallowed. H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H332 Harmful if inhaled.



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#### 16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route

RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses

ADN = Accord européen relatif au transport international des marchandises dangereuses par

voie de navigation intérieure ATE = acute toxicity estimate CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging

DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau

EEC = European Economic Community

EINECS = European Inventory of Existing Commercial Chemical Substances

EL50 = Median effective loading

ELINCS = European List of Notified Chemical Substances

EmS = Emergency Schedules

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC-Code = International Code for the Construction and Equipment of Ships carrying

Dangerous Chemicals in Bulk IC50 = Inhibition concentration, 50%

IMDG = International Maritime Code for Dangerous Goods

IUCLID = International Uniform ChemicaL Information Database

IVIS = In vitro irritation score LC50 = Lethal concentration, 50% LD50 = Median lethal dose LC0 = lethal concentration, 0%

LOAEL = lowest-observed-adverse-effect level

LL50 = Median lethal loading LQ = Limited Quantities

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

NOAEL = No Observed Adverse Effect Level NOEC = No Observed Effect Concentration

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC = Predicted No-Effect Concentration

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals

STP = Sewage Treatment Plant

TLV®/TWA = Threshold limit value – time-weighted average TLV®STEL = Threshold limit value – short-time exposure limit

VOC = Volatile Organic Compounds

vPvB = very Persistent and very Bioaccumulative

# 16.3 Other information

Classification procedure Skin Sens. 1: H317 May cause an allergic skin reaction. (On basis of test data)

Acute Tox. 4: H332 Harmful if inhaled. (On basis of test data)

STOT SE 3: H335 May cause respiratory irritation. (On basis of test data)

Modified position SECTION 2 deleted: Hexamethylene-diisocyanate

SECTION 3 been added: Hexamethylene-diisocyanate SECTION 3 deleted: Hexamethylene-diisocyanate

SECTION 2 deleted: - - - - - -

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

. - - - - - - - -

SECTION 15 deleted: As from 24 August 2023: The employer or self-employed ensures that industrial or professional user(s) have successfully completed training on the safe use of diisocyanates prior to the use of the substance(s) or mixture(s).

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