

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

1.1. Product identifier

Product form	: Substance
Substance name	: SL-PU UV HD B-component
IUPAC name	: HDI oligomers, isocyanurate
EC-No.	: 931-274-8
CAS-No.	: 28182-81-2
Formula	: $(C_8H_{12}N_2O_2)_n$
Product group	: Coatings and paints, fillers, putties, thinners

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

1.2.1. Relevant identified uses

Main use category	: Industrial use, Professional use
Use of the substance/mixture	: B-component corresponding to A-component

1.2.2. Uses advised against

No additional information available.

1.3. Details of the supplier of the safety data sheet

Quartzline BV
W.A. Boogaerdtstraat 5
3316 BN Dordrecht - Nederland
T +31 (0)78 6513100 - F +31 (0)78 6177390
info@quartzline.nl - www.quartzline.nl

1.4. Emergency telephone number

Emergency number	: +31 (0)78 6513100 This number is serviced during office hours.
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Country	Official advisory body	Address	Emergency number	Remark
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	Only for the purpose of informing medical personnel in cases of acute intoxications

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin sensitisation, Category 1	H317
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335

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

Adverse physicochemical, human health and environmental effects

Harmful if inhaled. May cause respiratory irritation. May cause an allergic skin reaction.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H317 - May cause an allergic skin reaction.
H332 - Harmful if inhaled.
H335 - May cause respiratory irritation.

Precautionary statements (CLP)

: P261 - Avoid breathing vapours, mist.
P280 - Wear protective gloves.
P312 - Call doctor, a POISON CENTER if you feel unwell.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.

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	P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
EUH-statements	: EUH204 - Contains isocyanates. May produce an allergic reaction.
Extra phrases	: As from 24 August 2023 adequate training is required before industrial or professional use.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	: SL-PU UV HD B-component
CAS-No.	: 28182-81-2
EC-No.	: 931-274-8

Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
HDI oligomers, isocyanurate	CAS-No.: 28182-81-2 EC-No.: 931-274-8 REACH-no: 01-2119485796-17	≤ 100	Acute Tox. 4 (Inhalation), H332 Skin Sens. 1, H317 STOT SE 3, H335
hexamethylene-di-isocyanate (Note 2)	CAS-No.: 822-06-0 EC-No.: 212-485-8 EC Index-No.: 615-011-00-1 REACH-no: 01-2119457571-37	< 1	Acute Tox. 4 (Oral), H302 Acute Tox. 1 (Inhalation:vapour), H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335

Specific concentration limits

Name	Product identifier	Specific concentration limits
hexamethylene-di-isocyanate	CAS-No.: 822-06-0 EC-No.: 212-485-8 EC Index-No.: 615-011-00-1 REACH-no: 01-2119457571-37	(0,5 ≤C < 100) Skin Sens. 1, H317 (0,5 ≤C < 100) Resp. Sens. 1, H334

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

Note 2 : The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture.

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If medical advice is needed, have product container or label at hand. Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, consult a specialist.
First-aid measures after ingestion	: Rinse mouth out with water. Do not induce vomiting without medical advice. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: May cause an allergic skin reaction.

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

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Water spray. sand. Foam. Dry powder.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Presents no particular fire or explosion hazard.
Hazardous decomposition products in case of fire : On burning: release of harmful/irritant gases/vapours. Carbon oxides (CO, CO₂). Nitrogen oxides. Hydrogen cyanide. Isocyanates.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Avoid breathing vapours, mist. Avoid contact with skin and eyes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing vapours, mist, spray. Avoid contact with skin and eyes. Wear personal protective equipment.
Handling temperature : < 40 °C
Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container tightly closed. Protect from moisture. Store locked up.
Incompatible products : Amines. Oxidizing agent. water. alcohols.
Storage temperature : ≈ 20 °C
Heat and ignition sources : Keep away from heat and direct sunlight.

7.3. Specific end use(s)

Curing agent.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

No additional information available.

8.1.2. Recommended monitoring procedures

No additional information available.

8.1.3. Air contaminants formed

No additional information available.

8.1.4. DNEL and PNEC

No additional information available.

8.1.5. Control banding

No additional information available.

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Gloves. Wear respiratory protection.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses. Standard EN 166 - Personal eye-protection - specifications

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing. EN 340

Hand protection:

Wear suitable gloves resistant to chemical penetration. Chemical resistant gloves (according to European standard NF EN 374 or equivalent).

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	butyl rubber	6 (> 480 minutes)	>0.5		EN 374
Gloves	Fluoroelastomer (FKM)	6 (> 480 minutes)	>0.4		EN 374

8.2.2.3. Respiratory protection

Respiratory protection:

Wear respiratory protection. EN 143

Respiratory protection			
Device	Filter type	Condition	Standard
Breathing apparatus	Type A - High-boiling (>65 °C) organic compounds	Vapour protection, Protection for Liquid particles	EN 143

8.2.2.4. Thermal hazards

No additional information available.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: colourless to yellow.
Odour	: Odourless.
Odour threshold	: No data available.
pH	: No data available.

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Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: -51,3 – -28,4 °C
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: 190 °C (Open cup)
Auto-ignition temperature	: > 200 °C (DIN 51794)
Decomposition temperature	: 250 °C
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Density	: 1,16 g/cm ³ (20 °C)
Solubility	: Reacts with water.
Partition coefficient n-octanol/water (Log Pow)	: No data available.
Partition coefficient n-octanol/water (Log Kow)	: 9,81
Viscosity, kinematic	: 431,034 mm ² /s
Viscosity, dynamic	: 500 mPa·s (25 °C)
Explosive properties	: Product is not explosive.
Oxidising properties	: Non oxidizing.
Explosive limits	: No data available.

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with water.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts violently with water.

10.4. Conditions to avoid

Extremely high or low temperatures. Do not allow water (or moist air) contact with this material.

10.5. Incompatible materials

alcohols. Amines. Oxidizing agent. Water.

10.6. Hazardous decomposition products

Combustion generates: Carbon oxides (CO, CO₂). Nitrogen oxides (NO_x). Hydrocyanic acid (hydrocyanic acid). Isocyanates.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.

HDI oligomers, isocyanurate (28182-81-2)	
LD50 oral rat	> 2500 mg/kg
LD50 dermal rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
ATE gases	4500 ppmv/4h
ATE vapours	11 mg/l/4h
ATE dust/mist	1,5 mg/l/4h
hexamethylene-di-isocyanate (822-06-0)	
LD50 oral rat	746 mg/kg
LD50 dermal rat	> 7000 ml/kg
LC50 Inhalation - Rat	0,124 mg/l/4h
ATE oral	746 mg/kg bodyweight

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hexamethylene-di-isocyanate (822-06-0)	
ATE vapours	0,124 mg/l/4h
ATE dust/mist	0,124 mg/l/4h
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
HDI oligomers, isocyanurate (28182-81-2)	
STOT-single exposure	May cause respiratory irritation.
hexamethylene-di-isocyanate (822-06-0)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
HDI oligomers, isocyanurate (28182-81-2)	
Viscosity, kinematic	431,034 mm²/s
Potential adverse human health effects and symptoms	: Fatal if inhaled.
SECTION 12: Ecological information	
12.1. Toxicity	
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
HDI oligomers, isocyanurate (28182-81-2)	
EC50 - Crustacea [1]	127 mg/l (Daphnia magna; EU Method C.2)
ErC50 algae	> 1000 mg/l (Desmodesmus subspicatus; DIN 38 412, Part 9)
hexamethylene-di-isocyanate (822-06-0)	
LC50 - Fish [1]	≥ 82,8 mg/l 96 h.
EC50 - Crustacea [1]	≥ 89,1 mg/l 48 h.
EC50 - Other aquatic organisms [1]	> 77,4 mg/l 72 h.
12.2. Persistence and degradability	
HDI oligomers, isocyanurate (28182-81-2)	
Persistence and degradability	Not readily biodegradable.
12.3. Bioaccumulative potential	
HDI oligomers, isocyanurate (28182-81-2)	
Partition coefficient n-octanol/water (Log Kow)	9,81
12.4. Mobility in soil	
HDI oligomers, isocyanurate (28182-81-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4,432 – 5,786
12.5. Results of PBT and vPvB assessment	
HDI oligomers, isocyanurate (28182-81-2)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

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12.6. Other adverse effects

No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Ecology - waste materials : Avoid release to the environment.
European List of Waste (LoW) code : 08 00 00 - WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available.				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	HDI oligomers, isocyanurate ; HDI oligomers, isocyanurate ; hexamethylene-di-isocyanate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10

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EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
74.	hexamethylene-di-isocyanate	Diisocyanates, $O = C=N-R-N = C=O$, with R an aliphatic or aromatic hydrocarbon unit of unspecified length

HDI oligomers, isocyanurate is not on the REACH Candidate List

HDI oligomers, isocyanurate is not on the REACH Annex XIV List

HDI oligomers, isocyanurate is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

HDI oligomers, isocyanurate is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ATE	Acute Toxicity Estimate
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative

Data sources : ECHA (European Chemicals Agency). according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878.

Other information : REACH Disclaimer:
This information is based on current knowledge. Consistency of data in the SDS with CSR is considered, as far as the information is available at the time of compilation (cfr Revision date and Version number). **DISCLAIMER OF LIABILITY** The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Full text of H- and EUH-statements	
Acute Tox. 1 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 1
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
EUH204	Contains isocyanates. May produce an allergic reaction.
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2

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Full text of H- and EUH-statements	
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.
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation

Safety Data Sheet applicable for regions : GB - United Kingdom

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