

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
CAS-No. : 28182-81-2
Formula (Override) : $(C_8H_{12}N_2O_2)_n$
Product group : Coatings and paints, fillers, putties, thinners

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

Relevant identified uses

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

1.3. Details of the supplier of the safety data sheet

Quartzline B.V.
W.A. Boogaerdtstraat 5
NL 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.

Country/Area	Organisation/Company	Address	Emergency number	Comment
Austria	Vergiftungsinformationszentrale	Stubenring 6 1010 Vienna	+43 1 406 43 43	
Belgium	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Militaire Reine Astrid	Rue Bruyn 1 1120 Brussels	+32 70 245 245	Please dial: 070 245 245 for any urgent questions about intoxication (free of charge 24/7), if not accessible, dial: 02 264 96 30 (standard fee)
Bulgaria	Национален токсикологичен информационен център Многопрофилна болница за активно лечение и спешна медицина "Н.И.Пирогов"	бул. Ген. Едуард И. Тотлебен 21 1606 Sofia	+359 2 9154 233	The phone is active 24/7 and calls to it are free
Croatia	Centar za kontrolu otrovanja Institut za medicinska istraživanja i medicinu rada	Ksaverska Cesta 2 p.p. 291 10000 Zagreb	+385 1 234 8342	Information available 24/7 in Croatian and English
Cyprus	Κέντρου Δηλητηριάσεων Τμήμα Επιθεώρησης Εργασίας	P.O. Box 24855 Nicosia	1401	Operating hours 24 hours / 24 hours, 7 days a week

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Country/Area	Organisation/Company	Address	Emergency number	Comment
Czech Republic	Toxikologické informační středisko Klinika pracovního lékařství VFN a 1. LF UK	Na Bojišti 1 120 00 Prague	+420 224 919 293 +420 224 915 402	and only in the event of a malfunction, phone 725 103 658 (otherwise there may not be a toxicologist on this phone!) Questions about ACUTE INTOXICATION of people and animals are dealt with exclusively on TIS direct telephone lines 24 hours a day
Denmark	Giftlinjen Bispebjerg Hospital	Bispebjerg Bakke 23E Opgang 20 C 2400 Copenhagen	+45 82 12 12 12	
Estonia	Mürgistusteabekeskus Terviseamet	Paldiski mnt 81 10614 Tallinn	16662 +372 7943 794	Calling the hotline is anonymous and at the cost of a local call.
Finland	Myrkytystietokeskus	Stenbäckinkatu 9 PO BOX 100 00029 Helsinki	+358 800 147 111 +358 9 471 977	Open 24 hours a day 0800 147 111 (free of charge) 09 471 977 (normal rate call)
France	ORFILA		+33 1 45 42 59 59	This number automatically directs calls to the nearest poison control center, based on the caller's location. These poison and toxicovigilance centers provide free medical assistance (excluding call costs), 24 hours a day, 7 days a week.
France	Centre antipoison de Marseille Hôpital Sainte Marguerite	270 boulevard de Sainte Marguerite 13274 Marseille Cedex 09	+33 4 91 75 25 25	
France	Centre antipoison de Paris Hôpital Fernand Widal	200 rue du Faubourg Saint-Denis 75475 Paris Cedex 10	+33 1 40 05 48 48	

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Country/Area	Organisation/Company	Address	Emergency number	Comment
Germany	Informationszentrale gegen Vergiftungen Klinik und Poliklinik für Allgemeine Pädiatrie, Zentrum für Kinderheilkunde, Universitätsklinikum Bonn	Gebäude 30, ELKI (Eltern-Kind-Zentrum) Venusberg-Campus 1 53127 Bonn	+49 (0) 228 19240	
Germany	Vergiftungs-Informations-Zentrale Universitätsklinikum Freiburg, Zentrum für Kinder- und Jugendmedizin	Breisacher Str. 86b 79110 Freiburg	+49 (0) 761 19240	
Germany	Giftinformationszentrum-Nord der Länder Bremen, Hamburg, Niedersachsen und Schleswig-Holstein (GIZ-Nord) Universitätsmedizin Göttingen - Georg-August-Universität	Robert-Koch Straße 40 37075 Göttingen	+49 (0) 551 19240	
Greece	Poisons Information Centre Children's Hospital P&A Kyriakou	11762 Athens	+30 21 07 79 37 77	
Hungary	Nemzeti Népegészségügyi Központ Egészségügyi Toxikológiai Tájékoztató Szolgálat	Albert Flórián út 2-6 1097 Budapest	+36 80 20 11 99 +36 1 476 6464	Emergency number 1: (0-24 hours, free of charge - only from Hungary) Emergency number 2: (0-24 hours, can be called for a normal fee - also from abroad)
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
Italy	Centro Antiveleni di Bergamo Azienda Ospedaliera Papa Giovanni XXII	Piazza OMS - Organizzazione Mondiale della Sanità, 1 24127 Bergamo	800 88 33 00	
Italy	Centro Antiveleni di Milano Ospedale Niguarda Ca' Granda	Piazza Ospedale Maggiore 3 20162 Milan	02 6610 1029	
Italy	Centro Antiveleni di Roma CAV Policlinico "A. Gemelli", Dipartimento di Tossicologia Clinica Università Cattolica del Sacro Cuore	Largo Agostino Gemelli, 8 00168 Rome	06 305 4343	
Italy	Centro Antiveleni di Firenze Az. Osp. "Careggi" U.O. Tossicologia Medica, S.O.D. di Tossicologia Clinica	Largo Brambilla, 3 50134 Florence	055 794 7819	
Italy	Centro Antiveleni di Pavia CAV Centro Nazionale di Informazione Tossicologica, Istituti Clinici Scientifici Maugeri Spa	Via Salvatore Maugeri, 10 27100 Pavia	03 822 4444	

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Country/Area	Organisation/Company	Address	Emergency number	Comment
Italy	Centro Antiveleni di Foggia Az. Osp. Univ. Foggia	V.le Luigi Pinto, 1 71122 Foggia	800 183 459	
Italy	Centro Antiveleni di Napoli Az. Osp. "A. Cardarelli"	Via A. Cardarelli, 9 80131 Naples	081 54 53 333	
Italy	Centro Antiveleni di Verona Azienda Ospedaliera Integrata Verona	Piazzale Aristide Stefani, 1 37126 Verona	800 011 858	
Latvia	Valsts ugunsdzēsības un glābšanas dienests Toksikoloģijas un sepses klīnikas Saindēšanās un zāļu informācijas centrs	Hipokrāta 2 1038 Riga	112 +371 67 04 24 73	works 24 hours a day
Lithuania	Apsinuodijimų informacijos biuras	Šiltanamių g. 29 04130 Vilnius	+370 (5) 236 20 52	
Luxembourg	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Militaire Reine Astrid	Rue Bruyn 1 1120 Brussels	+352 8002 5500	Free telephone number with a 24/7 access. Experts answer all urgency questions on dangerous products in French, Dutch and English
Malta	Medicines & Poisons Info Office	Mater Dei Hospital Msida MSD 2090 Msida	112 +356 2545 6508	
Netherlands	Nationaal Vergiftigingen Informatie Centrum (NVIC)	Huispostnummer Q03.2.315 Postbus 85500 3508 GA Utrecht	+31 88 755 80 00	Only for the purpose of informing medical personnel in cases of acute intoxications (24 hours a day, 7 days a week)
Poland	Instytut Medycyny Pracy imienia prof. dra med. Jerzego Nofera	ul. św. Teresy od Dzieciątka Jezus 8 91-348 Łódź	+48 42 631 45 02 +48 42 655 25 05	
Portugal	Centro de Informação Antivenenos Instituto Nacional de Emergência Médica	Rua Almirante Barroso, 36 1000-013 Lisbon	+351 800 250 250	
Romania	Spitalul Clinic de Urgenta Bucuresti Secția Clinică ATI II - Toxicologie Clinică	Calea Floreasca nr. 8 sector 1 Bucharest	+40 21 599 23 00	(information provided in Romanian and English)
Slovakia	Národné toxikologické informačné centrum Univerzitná nemocnica Bratislava, pracovisko Kramáre, Klinika pracovného lekárstva a toxikológie	Limbová 5 833 05 Bratislava	+421 2 54 77 41 66 +421 911 166 066	

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Country/Area	Organisation/Company	Address	Emergency number	Comment
Slovenia	Center za klinično toksikologijo in farmakologijo Univerzitetni klinični, Center Ljubljana	Zaloška 7 1000 Ljubljana	112	
Spain	Servicio de Información Toxicológica Instituto Nacional de Toxicología y Ciencias Forenses, Departamento de Madrid	C/José Echegaray nº4 28232 Las Rozas de Madrid	+34 91 562 04 20 +34 91 411 26 76 (teléfono solo para médicos)	(Toxicological emergencies only). Information in Spanish (24/7)
Sweden	Giftinformationscentralen	Solna Strandväg 21 171 54 Solna	112 – begär Giftinformation	

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.
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

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : SL-PU UV HD B-component

CAS-No. : 28182-81-2

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Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hexamethylene diisocyanate, oligomers	CAS-No.: 28182-81-2 EC-No.: 500-060-2 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	< 0.5	Acute Tox. 4 (Oral), H302 (ATE=746 mg/kg bodyweight) Acute Tox. 1 (Inhalation:vapour), H330 (ATE=0.124 mg/l/4h) 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 (Conc. (% w/w))
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.

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.

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.
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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

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

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

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".

Emergency procedures : Evacuate unnecessary personnel.

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

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.

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

Technical measures : Keep in a cool, well-ventilated place away from heat.

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.

Germany

Storage class (LGK, TRGS 510) : LGK 12 - Non-combustible liquids

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Joint storage table	:	LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
		LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
		LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
		LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
		LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for	:	LGK 1, LGK 6.2, LGK 7
Joint storage with restrictions permitted for	:	LGK 4.1A, LGK 4.3, LGK 5.1C
Joint storage permitted for	:	LGK 2A, LGK 2B, LGK 3, LGK 4.1B, LGK 4.2, LGK 5.1A, LGK 5.1B, LGK 5.2, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13

7.3. Specific end use(s)

Curing agent.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

hexamethylene-di-isocyanate (822-06-0)	
Austria - Occupational Exposure Limits	
Local name	Hexamethylen-1,6-diisocyanat
MAK (OEL TWA)	0.035 mg/m³
	0.035 mg/m³
	0.005 ppm
	0.005 ppm
MAK (OEL STEL)	0.035 mg/m³ (Mow)
	0.005 ppm (Mow)
OEL C	0.035 mg/m³
	0.005 ppm
Remark	Sah Sah
Regulatory reference	BGBI. II Nr. 238/2018 BGBI. II Nr. 156/2021
Belgium - Occupational Exposure Limits	
Local name	Diisocyanate d'hexaméthylène # Hexamethyleendi-isocyanaat
OEL TWA	0.034 mg/m³
	0.005 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Хексаметилендиизоцианат
OEL TWA	0.1 mg/m³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 28 от 2024 г., в сила от 05.04.2024 г.)
Czech Republic - Occupational Exposure Limits	
Local name	Hexamethylen-1,6-diisokyanát (Diisokyanatohexan)

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hexamethylene-di-isocyanate (822-06-0)	
PEL (OEL TWA)	0.035 mg/m³
	0.005 ppm
NPK-P (OEL C)	0.07 mg/m³
	0.01 ppm
Remark	I - dráždí sliznice (oči, dýchací cesty), resp. kůže, S - látka má senzibilizující účinek (s větou H317, H334).
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 20/2025 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Hexamethylendiisocyanat (1,6-Diisocyanatohexan; HDI)
OEL TWA	0.035 mg/m³
	0.005 ppm
Regulatory reference	BEK nr 1619 af 19/12/2024
Estonia - Occupational Exposure Limits	
Local name	1,6-diisotsüanato-heksaan (heksametüleendiiso-tsüanaat)
OEL TWA	0.03 mg/m³
	0.005 ppm
OEL STEL	0.07 mg/m³ lühiajalise kokkupuute piirnorm, arvatatud viieminutisele kokkupuuteajale
	0.01 ppm lühiajalise kokkupuute piirnorm, arvatatud viieminutisele kokkupuuteajale
Remark	S (Sensibiliseeriv aine)
Regulatory reference	Vabariigi Valitsuse 20. märtsi 2001. a määruse nr 105 (RT I, 02.04.2024, 13)
France - Occupational Exposure Limits	
Local name	Diisocyanate d'hexaméthylène
VME (OEL TWA)	0.075 mg/m³
	0.01 ppm
VLE (OEL C/STEL)	0.15 mg/m³ (La VLEP est définie sur une période de référence de 5 minute)
	0.02 ppm (La VLEP est définie sur une période de référence de 5 minute)
Remark	Valeurs recommandées/admises. Risques d'allergie respiratoire
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Hexamethylen-1,6-diisocyanat
AGW (OEL TWA)	0.035 mg/m³
	0.005 ppm
Peak exposure limitation factor	1;=2=(I)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); 11 - Summe aus Dampf und Aerosolen; 12 - Der Arbeitsplatzgrenzwert gilt in der Regel nur für die Monomeren. Zur Beurteilung von Oligomeren oder Polymeren siehe TRGS 430 "Isocyanate"; Sa - Atemwegssensibilisierender Stoff

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hexamethylene-di-isocyanate (822-06-0)	
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Hexamethylendiisocyanat
Biological limit value	15 µg/g creatinine Parameter: Hexamethylendiamin (nach Hydrolyse) - Untersuchungsmaterial: U = Urin - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 05/2013 DFG
Regulatory reference	TRGS 903
Hungary - Occupational Exposure Limits	
Local name	DIIZOCIANÁTOK: hexametilén-diizocianát (HDI)
AK (OEL TWA)	0.035 mg/m³
CK (OEL STEL)	0.035 mg/m³
Remark	i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármát), sz (Túlérzékenységet okozó (szenzibilizáló) tulajdonságú anyag. Az anyagra érzékeny egyénekben „túlérzékenységen” alapuló bőr-, légzőrendszeri, esetleg más szervet/szervrendszert károsító megbetegedést okozhat); T (Azok az anyagok, amelyek egészségkárosító hatása TARTÓS expozíciót követően jelentkezik)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Ireland - Occupational Exposure Limits	
Local name	Hexamethylene diisocyanate (as -NCO)
OEL TWA	0.005 ppm
Remark	Advisory OELV (Advisory Occupational Exposure Limit Values), Sens (In the workplace, respiratory or dermal exposures to sensitising agents may occur. Sensitisers may evoke respiratory or dermal reactions, e.g. asthma, rhinitis and allergic contact dermatitis. The “sens” notation alone does not distinguish between respiratory or dermal sensitisation. Chemical agents that are sensitisers present special problems in the workplace. Should an employee become sensitised, subsequent exposure may cause intense responses, even at low exposure concentrations well below the OELV. Exposure should be eliminated or significantly reduced through control measures such as engineering and process controls and use of personal protective equipment (PPE))
Regulatory reference	Chemical Agents Code of Practice 2024
Latvia - Occupational Exposure Limits	
Local name	Heksametilēndiizocianāts (1,6-heksāndiizocianāts)
OEL TWA	0.05 mg/m³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2024. gada 26. martā noteikumiem Nr. 191).
Lithuania - Occupational Exposure Limits	
Local name	Heksametilendiizocianatas (HDI)
IPRV (OEL TWA)	0.03 mg/m³
	0.005 ppm
NRV (OEL C)	0.07 mg/m³ Nustatytas 5 min. poveikio trukmės NRD
	0.01 ppm Nustatytas 5 min. poveikio trukmės NRD

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hexamethylene-di-isocyanate (822-06-0)	
Remark	Ū (ūmus poveikis); J (jautrinantis poveikis); Tas pats RD, išreikštas ppm, taikomas izocianatams, kurių RD nenustatytas. Ši nuostata taikoma ir dulkių ar lašelių (aerozolių) pavidalo izocianatams, įskaitant prepolimerizuotus izocianatus (aduktus). Tačiau skirtingų medžiagų RD, išreikšti mg/m3, yra skirtingi.
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Poland - Occupational Exposure Limits	
Local name	Diizocyjanian heksano-1,6-diylu
NDS (OEL TWA)	0.04 mg/m³
NDSch (OEL STEL)	0.08 mg/m³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Di-isocianato de hexametileno
OEL TWA	0.005 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Hexametilen-diizocianat
OEL TWA	0.05 mg/m³
	0.007 ppm
OEL STEL	1 mg/m³
	0.14 ppm
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 179/2024)
Slovakia - Occupational Exposure Limits	
Local name	Izokyanáty: Hexametylén-1,6-diizokyanát (HDI)
NPHV (OEL TWA)	0.035 mg/m³
	0.005 ppm
Remark	S – znamená, že faktor môže spôsobiť senzibilizáciu
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z. (122/2024 Z. z.)
Slovenia - Occupational Exposure Limits	
Local name	heksametilen-1,6-diizocianat
OEL TWA	0.035 mg/m³
	0.005 ppm
OEL STEL	0.035 mg/m³
	0.005 ppm
Remark	BAT (Biološka mejna vrednost)

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hexamethylene-di-isocyanate (822-06-0)	
Regulatory reference	Uradni list RS, št. 29/2024 z dne 4. 4. 2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
Slovenia - Biological limit values	
Local name	heksametilendiizocianat
BLV	15 µg/g creatinine Parameter: heksametilendiamin (po hidrolizi) - Biološki vzorec: urin - Čas vzorčenja: ob koncu delovne izmene
Regulatory reference	Uradni list RS, št. 29/24 z dne 4. 4. 2024 - Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
Spain - Occupational Exposure Limits	
Local name	Diisocianato de 1,6-hexametileno (HDI)
VLA-ED (OEL TWA)	0.035 mg/m³
	0.005 ppm
Remark	Sen (Sensibilizante).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2025. INSHT
Sweden - Occupational Exposure Limits	
Local name	Hexametylendiisocyanat (HDI)
NGV (OEL TWA)	0.02 mg/m³
	0.002 ppm
KGV (OEL STEL)	0.03 mg/m³ (Korttidsgränsvärdet för en 5-minutersperiod)
	0.005 ppm (Korttidsgränsvärdet för en 5-minutersperiod)
Remark	M (Medicinska kontroller kan krävas för hantering av ämnet); SH (Ämnet tas lätt upp genom huden. Gränsvärdet bedöms ge tillräckligt skydd om huden är skyddad); SL (Sensibiliserande ämnen som kan ge allergi eller annan överkänslighet i övre och nedre luftvägarna)
Regulatory reference	Arbetsmiljöverkets föreskrifter och allmänna råd (AFS 2023:14) om gränsvärden för luftvägsexponering i arbetsmiljön

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment:

Gloves. Protective clothing. Protective goggles.

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

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

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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 ISO 374-1 or equivalent)

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Butyl rubber	6 (> 480 minutes)	>0.5		ISO 374-1
Gloves	Fluoroelastomer (FKM)	6 (> 480 minutes)	>0.4		ISO 374-1

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

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	: Not available
Melting point	: -51.3 – -28.4 °C
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not available
Explosive properties	: Product is not explosive.
Oxidising properties	: Non oxidizing.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: 190 °C (Open cup)
Auto-ignition temperature	: > 200 °C (DIN 51794)
Decomposition temperature	: 250 °C
pH	: Not available
Viscosity, kinematic	: 431.034 mm ² /s

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Viscosity, dynamic	: 500 mPa·s (25 °C)
Solubility	: Reacts with water.
Partition coefficient n-octanol/water (Log Kow)	: 9.81
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 1.16 g/cm ³ (20 °C)
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Inhalation:dust,mist: Harmful if inhaled.

Hexamethylene diisocyanate, oligomers (28182-81-2)

LD50 oral rat	> 2500 mg/kg
LD50 dermal rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

hexamethylene-di-isocyanate (822-06-0)

LD50 oral rat	746 mg/kg
LD50 dermal rat	> 7000 ml/kg
LC50 Inhalation - Rat (Vapours)	0.124 mg/l/4h

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: May cause respiratory irritation.

Hexamethylene diisocyanate, oligomers (28182-81-2)

STOT-single exposure	May cause respiratory irritation.
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hexamethylene-di-isocyanate (822-06-0)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

SL-PU UV HD B-component (28182-81-2)	
Viscosity, kinematic	431.034 mm ² /s

11.2. Information on other hazards

Other information

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 (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

Hexamethylene diisocyanate, oligomers (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 (EU Method C.1; Danio rerio)
EC50 - Crustacea [1]	> 89.1 mg/l (EU Method C.2; Daphnia magna)

12.2. Persistence and degradability

SL-PU UV HD B-component (28182-81-2)	
Persistence and degradability	Readily biodegradable.

Hexamethylene diisocyanate, oligomers (28182-81-2)	
Persistence and degradability	Not readily biodegradable.

hexamethylene-di-isocyanate (822-06-0)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

SL-PU UV HD B-component (28182-81-2)	
Partition coefficient n-octanol/water (Log Kow)	9.81

12.4. Mobility in soil

SL-PU UV HD B-component (28182-81-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.432 – 5.786

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation : Disposal must be done according to official regulations.

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Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: Avoid release to the environment.
European List of Waste (LoW, EC 2000/532)	: 08 00 00 - WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
HP Code	: HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration. HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure. HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
Not regulated for transport			
14.2. UN proper shipping name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
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

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	SL-PU UV HD B-component ; Hexamethylene diisocyanate, oligomers ; 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
74.	hexamethylene-di-isocyanate	Diisocyanates, $O = C=N-R-N = C=O$, with R an aliphatic or aromatic hydrocarbon unit of unspecified length

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Explosives Precursors Regulation (EU 2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (EC 273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

National regulations

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 9838).

Major Accidents Ordinance (12. BImSchV) : Is not subject to the Major Accidents Ordinance (12. BImSchV)

Netherlands

ABM category : A(4) - low hazard for aquatic organisms, may have longterm hazardous effects in aquatic environment

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

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Denmark

Danish National Regulations

: Young people below the age of 18 years are not allowed to use the product
Persons suffering from asthma or eczema and persons who have chronic lung diseases, skin or respiratory allergies to isocyanates should not work with the material
The requirements from the Danish Working Environment Authorities regarding work with epoxy resins and isocyanates must be observed during use and disposal

Poland

Polish National Regulations

: Act of 25 February 2011 on chemical substances and their mixtures (J. o L. No. 63, item 322 as amended; consolidated text J. o L. 2019, item 1225).
Act of 14 December 2012 on waste (J. o L. 2013, item 322 as amended; consolidated text J. o L. 2020, item 797).
The announcement of Marshal of the Sejm of the Republic of Poland dated 19 October 2016 concerning the consolidated text announcement of the decree on the management of packaging and packaging waste (J. o L. 2016, item 1863 as amended).
Decree of the Minister of Environment of 14 December 2014 on the catalogue of waste (J. o L. 2014, item 1923).
Act of 19 August 2011 on the Carriage of Dangerous Goods (J. o L. 2011 No. 227, item 1367 as amended; consolidated text J. o L. 2020, item 154).
Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the highest permissible concentration and intensity of noxious agents for health at work environment (J. o L. item 1286 as amended).
The announcement of Minister of Health dated 9 September 2016 concerning the consolidated text announcement of the decree of the Minister of Health of 30 December 2004 on health and safety at work related to exposure to chemical agents at work (J. o L. of 16 September 2016, item 1488)
Regulation of the Minister of Health of 2 February 2011 on tests and measurements of the noxious agents for health at work environment (J. o L. No. 33, item 166 as amended).
Regulation of the Minister of Environment of 9 December 2003 on particularly hazardous substances to the environment (J. o L. No. 217, item 2141).
ADR Agreement: Government Statement of 13 March 2023 on the entry into force of amendments to Annexes A and B to the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed in Geneva on 30 September 1957 (J. o. L. 2023, item 891)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes		
Section	Changed item	Comments
	Supersedes	Added
	Revision date	Added
1.1	EC-No.	Removed
12.2	Persistence and degradability	Added
13.1	H code	Added
16	Training advice	Added

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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).
Training advice	: As of August 24, 2023, a proper training must be completed in order to use isocyanates for industrial or professional purposes. This training can be accessed via the following link: https://safeusediisocyanates.eu/ .
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
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
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

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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.
EUH204	Contains isocyanates. May produce an allergic reaction.

This Safety Data Sheet is compiled by: ChemPros B.V. | +31(0)858881927 | info@chemprosbv.nl