Component B, PU 5100 Topcoat

Safety Data Sheet

pursuant to Regulation (EC) No 453/2010

Publication date: 03/08/2021

Revision date: / / Version: 1.0

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

	1.1	Substance name: HYDROPHILIC ALIPHATIC POLYISOCYANATE Brand name: PU5100 Topcoat Supermat Component B Synonyms: Hydrophilic hexamethylene diisocyanate oligomer Index number: Not applicable. EC number: 679-494-0 CAS number: 666723-27-9 REACH registration number: According to Article 2, paragraph 9 of REACH, polymers must be exempted from the general registration obligation. Type of material: Composition: polymer Origin: organic Product group: PU Flooring
	1,2	Relevant identified use Main usage category Industrial/Professional use spec. Use of the substance or the mixture; Forms of use that are advised against Industrial use For professional use only Flooring No additional information available
	1.3	Dutch Resin Group P.O. Box 1074 7301 BH Apeldoorn T +31 (0)55 312 44 65 info@dutchresin.nl Visiting address Gladsaxe 19 Apeldoorn
	1.4	Emergency number: T +31 (0)55 312 44 65 This number is only available during office hours.

Land	Official advisory body	Address	Emergency number
NETHERLANDS	National Poisons Information Center. University Medical Center Utrecht, The National Poisons Information Center (NVIC) informs doctors, veterinarians, pharmacists, and other healthcare professionals about the possible health effects and treatment options for poisonings. The NVIC is available for this purpose day and night, both by telephone and via the internet.	P.O. Box 85500 3508 GA Utrecht	+31 30 274 88 88

SECTION 2: Identification of hazards

2.1 Classification of the substance or mixture

Hazard class/ category code	Warning phrases
Acute Tox. 4	**H332** Harmful if inhaled.
Skin Sens. 1	**H317** May cause an allergic skin reaction.
STOTS SE 3	**H335** May cause respiratory irritation.
Aquatic Chronic 3	**H412** Harmful to aquatic organisms, with long-lasting effects.

	2.2	Labeling elements
		Labelling in accordance with Regulation 1272/2008/EC (CLP) Product identification: ???????? Dust: **HYDROPHILIC ALIFATHIC POLYISOCYANATE** CAS number: **666723-27-9** **Hazard pictogram:**  GHS07 **Signal word:** WARNING **Hazard statement: H317** May cause an allergic skin reaction. **H332** Harmful if inhaled. **H335** May cause respiratory irritation. **H412** Harmful to aquatic organisms, with long-lasting effects. **Safety recommendation:** **P260** Do not breathe dust/fumes/gas/mist/vapour/spray. **P273** Avoid release into the environment. **P280** Wear protective gloves/protective clothing/eye protection/face protection. **P302+P352** IF IN CONTACT WITH SKIN: Wash with plenty of water. **P304+P340** AFTER INHALATION: move the person to fresh air and ensure they can breathe easily. **P312** If you feel unwell, consult a POISON CENTER / doctor. **Additional information on hazardousness (EU):** Not applicable. **Note:** Not applicable.
	2.3	Other dangers
		The substance does not meet the criteria regarding persistent, bioaccumulative and toxic substances (PBT) and highly persistent and highly bioaccumulative substances (vPvB) under Annex XIII of Regulation 1907/2006/EC. No endocrine disrupting properties are attributed to the substance on the basis of the criteria of Regulation (EU) 2017/2100 or Regulation (EU) 2018/605. There is no information on other hazards that do not result in classification but which may increase the general hazard of the substance, such as dust formation, risk of explosion due to non-compliance with the classification criteria in point 2.1 of Part 2 of Annex I to Regulation (EC) No 1272/2008, risk of dust explosion, cross-sensitivity, asphyxiation, freezing, potential strong odor or taste, or environmental effects such as hazards to soil organisms or the photochemical ozone-forming potential.

SECTION 3: Composition and information on ingredients

	3.2	Mixture of hazardous and non-hazardous substances			
		name	Product identification	%	Classification in accordance with Regulation (EC) No 1272/2008 [CLP]

		Hydrophilic, aliphatic polyisocyanate	CAS No.: 666723-27-9	>99.9	Classification (1272/2008/EC): Acute Tox. 4 Inhalative H332 Skin Sens. 1B H317 STOT SE 3 H335 Aquatic Chronic 3 H412
		hexamethylene-1,6-diisocyanate	CAS No.: 822-06-0 Index no.: 615-011-00-1 REACH registration number: 01-2119457571-37-0000, 01-2119457571-37-0005, 01-2119457571-37-0006	<0.1	Classification (1272/2008/EC): Acute Tox. 4 Oral H302 Acute Tox. 1 Inhalative H330 Skin Irrit. 2 H315 Eye Irrit.2 H319 Resp. Sens. 1 H334 Skin Sens. 1 H317 STOT SE 3 H335 Specific Limit Concentrations (GHS): Resp. Sens. 1 H334 >= 0.5% Skin Sens. 1 H317 >= 0.5%
		No exposure scenarios are required for the above-mentioned contaminants of the substances under Article 3(1) of Regulation (EC) No 1907/2006. Candidate list of substances, great care regarding authorization This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).			
		Full content of the R, H and EUH phrases: see section 16			

SECTION 4: First aid measures

	4.1	Description of the first aid measures
		General advice: Immediately remove, disinfect, and dispose of soiled or soaked clothing and shoes. In case of inhalation: Move person to fresh air, keep warm, allow to rest; medical assistance is required if breathing difficulties occur. In case of contact with skin: In case of contact with skin, preferably wash with a cleanser based on polyethylene glycol or clean with plenty of warm water and soap. In case of skin reactions, consult a doctor. In case of contact with eyes: Rinse open eyes with lukewarm water for a sufficient length of time (at least 10 minutes), if possible. Consult an ophthalmologist. If swallowed: DO NOT induce vomiting. Rinse mouth with water. Medical advice required.
	4.2	Main acute and delayed symptoms and effects
		Notes for the physician: The product irritates the respiratory tract and can cause hypersensitivity of the skin and respiratory tract. Treatment of acute irritation or bronchoconstriction is primarily symptomatic. Depending on the degree of exposure and symptoms, prolonged medical care may be necessary.
	4.3	Indication of the required immediate medical care and special treatment
		Therapeutic measures: No data available.

SECTION 5: Firefighting measures

	5.1	Extinguishing equipment
		Suitable extinguishing agents: Foam. AFFF. Water mist. Unsuitable extinguishing agents: none
	5.2	Special hazards caused by the substance or mixture

		During a fire, carbon monoxide, carbon dioxide, nitrogen oxide, isocyanate vapors, and traces of hydrogen cyanide (prussic acid) are produced. Avoid inhaling smoke in the event of fire and/or explosion. In the event of a fire in the immediate vicinity, increased pressure, risk of bursting. Cool containers threatened by fire with water and, if possible, remove them from the danger zone.
	5.3	Advice for firefighters
		During firefighting, respiratory protection with independent air supply and a tight-fitting chemical protective suit are required. Do not allow contaminated extinguishing water to penetrate the soil, groundwater, or surface water.
SECTION 6: Measures in the event of accidental release of the substance or mixture		
	6.1	Personal precautions, protective equipment and emergency procedures
		Put on safety clothing (see section 8). Ensure adequate airflow and ventilation. Keep uninvolved persons at a distance
	6.11 For	persons other than emergency services
		Protective equipment: Equip cleaning staff with appropriate protection. Emergency procedures: Keep spectators at a distance.
	6.12 For	the emergency services
		additional information available
	6.2	Environmental precautions
		Prevent penetration into the soil/subsoil. Prevent runoff into surface water or the sewer. Store the contaminated rinse water and dispose of it. In the event of a gas leak or infiltration into watercourses, soil, or sewers, notify the responsible authorities. Suitable material for collection: absorbent material, organic matter, sand.
	6.3	Methods and material for containment and cleaning up
	6.3	Remove mechanically; cover the residue with damp, liquid-absorbent material (e.g., sawdust, calcium silicate hydrate-based chemical binder, sand). After approx. 1 hour, place in waste packaging; do not seal (CO2 generation!). Keep moist and leave outdoors in a safe place for several days. The spilled area can be cleaned with the following recommended disinfection solution: Disinfectant solution 1: 8-10% sodium carbonate and 2% liquid soap in water Disinfectant solution 2: liquid/traditional soap (potassium soap with ~15% anionic surfactant): 20 ml; water: 700 ml; polyethylene glycol (PEG 400): 350 ml Disinfectant 3: 30% liquid detergent for commercial purposes (contains monoethanolamine), 70% water.
	6.4	Reference to other sections.
		Regarding waste disposal after cleaning, see section 13. See section 8 regarding the use of personal protective equipment.
SECTION 7: Handling and storage		
	7.1	Precautions for the safe handling of the substance or mixture
		Specific recommendations: Sufficient ventilation/air exchange and/or extraction must be applied in the workshops. On every work floor or in every area of the establishment where a high concentration of isocyanate aerosols and/or vapors may occur (e.g. during pressure reduction, ventilation of

molds or the air-assisted cleaning of mixing heads), must have adequate local extraction ventilation is used so that the limit values for occupational hygiene are not are exceeded. Air extraction is recommended if the employee is directly in comes into contact with the product. The effectiveness of the extraction system must be checked regularly are checked to prevent defects. The concentration in the atmosphere the amount that ends up must be minimized and kept at such a low level that this is feasible in accordance with the occupational hygienic exposure limit.

Advice on general occupational hygiene:
Eating, drinking, smoking, and consuming tobacco products are prohibited in the workplace. Under all circumstances, direct contact with the skin and eyes and inhalation must be avoided. Prevent fumes. Keep the equipment clean. Avoiding contact with water is important during the manufacture, handling, and storage of molds.
Cleaning materials must be stored in a place that is immediately accessible.

7.2 Conditions for safe storage, including incompatible products. Keep dry and store in a tightly closed container. Further storage information to ensure quality can be found in our technical product information sheet.

7.3 Specific end-use

B Component coating

SECTION 8: Exposure control measures/personal protection

8.1 Control parameters

Substance: **Hexamethylene diisocyanate**
CAS-mmer: **222-06-0**

Limit value (8 hours)	**Limit value (short term)** 0.005
0.005 ppm 0.035 mg/m³	ppm 0.035 mg/m³

DNEL/PNEC values

HDI Trimer (CAS 28182-81-2): Workers:
Acute/short-term
exposure - local effects (inhalation): DNEL = 1.0 mg/m3 Long-term exposure -
local effects (inhalation): DNEL = 0.5 mg/m3

Population: Not applicable.
PNEC water (freshwater): 0.127 mg/l PNEC water (seawater): 0.013 mg/l
PNEC freshwater (variable emissions): 1.27 mg/
l PNEC STP: 88 mg/
l PNEC sediment (freshwater): 266701 mg/kg sediment (dry weight) PNEC sediment (seawater): 26670 mg/kg sediment (dry weight)
PNEC soil: 53183 mg/kg soil (dry weight)

8.2 Measures to control exposure

Appropriate technical measures: Proper extraction ventilation must be ensured for processing machines.
Individual protective measures Eye/face protection: Safety glasses with face shields (with frame) (e.g. EN 166).

Skin protection Hand protection: Chemical-resistant safety gloves (EN 374).
Recommended glove materials suitable for adequate protection:

		Butyl rubber (BR): thickness >= 0.5 mm; breakthrough time >= 480 min. Polychloroprene (Neoprene) (CR): thickness >= 0.5 mm; breakthrough time >= 480 min. Nitrile/butadiene rubber (NBR): thickness >= 0.35 mm; breakthrough time >= 480 min. Body protection: Protective footwear (e.g. according to EN 20346) and closed workwear. **Respiratory protection:** Breathing apparatus with full gas mask. Respiratory devices used for protection can be provided of a type A filter against organic gases, and in places where dust or also aerosol is formed, at least with an A/P2 filter. **General safety and hygiene measures:** Do not inhale vapor/mist. Keep away from beverages, food, and animal feed. Eating, drinking, smoking, and consuming tobacco products are prohibited in the workplace. Contaminated clothing must be removed immediately. Washing the face and hands is mandatory before work breaks and at the end of the shift. At the end of the shift, the skin surface must also be washed and a skin care product must be used. **Control of environmental exposure:** In accordance with local and national regulations, found in the individual exposure scenarios in the appendix. Use of this product is advised against in case of hypersensitivity of the respiratory tract and skin (asthma, chronic bronchitis, chronic skin diseases). Hand protection Suitable material for safety gloves; EN 374: Butyl rubber - IIR: thickness >=0.5mm; Breakthrough time >=480min. Fluororubber - FKM: thickness >=0.4mm; Breakthrough time >=480min. Advice: remove contaminated gloves. Eye protection Wear eye/face protection. Skin and body protection Wear suitable protective clothing.
SECTION 9: Physical and chemical properties		
	9.1	Information about basic physical and chemical properties
		Physical state: liquid (20 °C, 1013 hPa) **Color:** colorless to yellowish **Odor:** slight **Melting point/freezing point:** approx. -22 °C **Boiling point or initial boiling point and boiling range:** > 300 °C (1013 hPa) **Flammability:** Non-combustible. **Lower and upper explosion limits:** No data. **Flash point:** approx. 196 °C (1,013 hPa) **Autoignition temperature:** approx. 425 °C **Decomposition temperature:** No data. **pH:** No data. **Kinematic viscosity:** No data. **Solubility:** Water: Immiscible. (15 °C) Polar and non-polar solvents: No data. **Partition coefficient n-octanol/water:** No data. **Vapor pressure:** approx. 17 hPa (20 °C); approx. 26 hPa (50 °C); approx. 28 hPa (55 °C) **Density and/or relative density:** approx. 1.16 g/cm³ (20 °C) **Relative vapor tightness:** No data. **Particle characteristics:** Not applicable.
	9.2	Other information
		Information regarding physical hazard classes

		Dynamic viscosity: 1500-3500 mPa.s (25 °C) **Explosion properties:** Non-explosive. **Oxidizing properties:** No. **Other safety features:** No data.
SECTION 10: Stability and reactivity		
	10.1	Reactivity
		No additional information available
	10.2 Chemical stability	
		Not determined.
	10.3 Possible dangerous reactions	
		Exothermic reaction with amines and alcohols; with water, CO2 evolution; increased pressure in closed packaging; risk of bursting.
	10.4 Conditions to be avoided	
		This information is not available.
	10.5 Chemically interacting materials	
		Water, acids, alcohols, amines, bases and oxidizing agents.
	10.6	Dangerous decomposition products.
		No hazardous decomposition products with professional storage and handling.
SECTION 11: Toxicological information		
	11.1	Information about toxicological effects
		The data relate to hexamethylene diisocyanate oligomers (CAS 28182-81-2). **Regulation (EC) No 1272/2008** **Acute toxicity** Acute toxicity – oral: Rats (female) LD50 > 2500 mg/kg bw (14 days) Method: OECD Guideline 423 Acute toxicity – inhalation (aerosol): Rats (female/male) LC50 = 462 mg/m³ air (4 hours) Method: OECD Guideline 403 Acute toxicity – via the skin: Rats (female/male) LD50 > 2000 mg/kg body weight (24 hours) Method: OECD Guideline 402 **Skin corrosion/irritation** Rabbits Mildly irritating effect. (4 hours) Method: OECD Guideline 404 **Serious eye injury/eye irritation** Rabbits Mildly irritating effect. (72 hours) Method: OECD Guideline 405 **Sensitization of the respiratory tract/skin** Sensitization of the skin: Guinea pigs (female) Sensitization. (72 hours) Method: OECD Guideline 406 Airway sensitization Respiratory tract: Guinea pigs (aerosol; female) Non-sensitizing. (5 days) Method: OECD TG 403 **Germ** **cell mutagenicity** Gene mutation, in vitro: S. typhimurium Negative. Method: OECD Guideline 471

Carcinogenicity: No data available.
Reproductive toxicity
Developmental toxicity:
Rats (inhalation: vapor; female) NOAEC = 1.0 mg/m3 air (6-19 days, 6 hours/day)
Method: OECD Guideline 414 Cross-reference to isophorone diisocyanate – CAS 4098-71-9.)
SOT upon single exposure: May cause respiratory irritation.
SOT upon repeated exposure
Rats (inhalation: aerosol) NOAEL = 3.3 mg/m³ air (13 weeks, 6 hours/day, 5 days/week)
Method: OECD Guideline 413
Hazard upon inhalation: No data available.
Information on other hazards
Endocrine disrupting properties: Based on available data; the classification criteria have not been met.
Other information: No data.

SECTION 12: Ecological information

12.1 toxicity

The data relate to hexamethylene diisocyanate oligomers (CAS 28182-81-2).

Aquatic toxicity Short-term toxicity in fish: Freshwater fish (Danio rerio) LL0 ÿ 100 mg/l (96 hours) Method: EU Method C.1 Short-term toxicity in aquatic invertebrates: Freshwater invertebrates (Daphnia magna) EL50 = 127 mg/l (48 hours) Method: EU Method C.2 Toxicity of freshwater algae and cyanobacteria: Freshwater algae (Desemodesmus subspicatus) EC50 >1000 mg/l (72 hours) Method: OECD Guideline 201 Toxicity of microorganisms: Microorganisms (activated sludge) EC50 = 3828 mg/l (3 hours) Method: OECD Guideline 209.

12.2 Persistence and degradability

Phototransformation in air: Half-life (DT50) 0.427 days Method: AOP Program v1.92 Hydrolysis: Half-life (DT50) approx. 7.7 h (23 °C) Method: ASTM D4666 Biodegradation in water: 1 % (28 days) Method: OECD Guideline 301D

12.3 Bioaccumulation:

Bioaccumulation - in water/sediment: BCF 88.7 l/kg Method: BCFBAF v3.01

12.4 Mobility in the soil

Adsorption/desorption: log Koc (absorption coefficient) 6.266 Method: KOCWIN v2.00 Volatility: H (Henry constant) 1.3*10-12 Pa.m3 /mol (at 25 °C) Method: HENRYWIN v4.11

12.5 Results of PBT and zPzB assessment

This substance/mixture does not contain components that can be considered persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other harmful effects

Isocyanate reacts with water at the interface, forming CO2 and a solid, insoluble product with a high melting point (polyurea). This reaction is strongly promoted by surfactants (e.g., liquid soap) or water-soluble substances.
Based on current experience, polyurea is inert and non-biodegradable.

12.7 Other harmful effects

Not known

SECTION 13 Disposal instructions		
	13.1 Waste processing methods	
		After the final product withdrawal, product residues must be removed from the packaging (drip-free, powder-free, paste-free). After neutralization of the product residues remaining on the walls, the product and hazard warning must be removed. These packages may be handed over, specifically per packaging medium, to the collection points of the existing take-back systems of the chemical industry for recycling. Reuse or recycling must be carried out in accordance with national laws and regulations and environmental protection measures. No discharge via wastewater.
SECTION 14: Information regarding transport		
		Land transport (ADR / RID / GGVSEB
	14.1 UN number	
		ADR-UN Number: Non-dangerous goods IATA-UN Number: Non-dangerous goods IMDG-UN Number: Non-hazardous goods
	14.2	Proper shipping name in accordance with the UN Model Regulations:
		ADR Shipping Name: Non-dangerous goods IATA Shipping Name: Non-dangerous goods IMDG-Shipping Name: Non-hazardous goods
	14.3 Transport hazard class(es):	
		ADR Class: Non-dangerous goods ADR - Hazard identification number: Non-dangerous goods IATA Class: Non-dangerous goods IATA Label: Non-dangerous goods IMDG Class: Non-hazardous goods IMDG Class: Non-hazardous goods
	14.4 Packaging group:	
		ADR-Packing Group: Non-hazardous goods IATA Packing group: Non-dangerous goods IMDG-Packing group: Non-hazardous goods
	14.5 Environmental hazards:	
		ADR Environmental pollutant: Non-hazardous goods IMDG-Marine pollutant: Non-hazardous goods
	14.6 Special precautions for the user:	
		See sections 6-8. Further instructions: No dangerous goods to transport. Protect against moisture. Heat sensitive from +50 °C. Cold sensitive from +10 °C. Keep separate from foodstuffs, stimulants, acids, and alkalis
	14.7 Transport in bulk in accordance with Annex II to MARPOL 73/78 and the IBC Code	
		Not applicable
SECTION 15: Regulations		
	15.1	Specific safety, health and environmental regulations and legislation for the substance or mixture REGULATION (EC) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on ozone-depleting substances: Falls outside the scope thereof. REGULATION (EC) No 850/2004 OF THE EUROPEAN

		PARLIAMENT AND OF THE COUNCIL of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC: Does not fall within the scope of this. REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on the import and export of hazardous chemical substances: Does not fall within the scope of this. Directive 2012/18/EC of the European Parliament and of the Council of 4 July 2012 on major accident management involving hazardous substances, amending and subsequently repealing Council Directive 96/82/EC: Does not fall within the scope of this. European Union regulations • Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006. • Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives. Text relevant to the EEA. • International Chemical Safety Data Sheets (WHO/IPCS/ILO) • ISOPA Guidelines (www.isopa.org)
	15.2 Chemical safety assessment	
		No chemical safety assessment has been carried out for this substance/mixture, or its components, respectively.
SECTION 16: Other information		
	16.1 Reporting changes	
		no
	16.2	Abbreviations and acronyms
		Acute Tox.: Acute toxicity BCF: Bioconcentration factor CAS number: Register number Chemical Abstracts Service CLP: Classification, Labelling and Packaging Regulation DNEL: Derived No Effects EC: European Commission EC50: Effective concentration 50% EC number: EINECS and ELINCS number EINECS: European List of Substances on the Market (EU) ELINCS: European List of Notified Substances LC50: Concentration corresponding to a mortality rate of 50% LD50: Dose corresponding to a mortality rate of 50% lg: body weight LOAEC: Minimum concentration for observable adverse effect NOAEC: No adverse effect concentration NOEC: No adverse effect concentration PBT: Persistent, bioaccumulative and toxic PNEC: Predicted concentration no effect REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals and Mixtures Skin Sens.: Skin sensitization STOT SE: Specific Target organ toxicity upon single exposure STOT single STOT RE: Specific target organ toxicity upon repeated exposure STOT repeat STP: Wastewater treatment plants Tox.: Toxicity vPvB: Very persistent and very bioaccumulative
	16.3	Key literature references and data sources: Registration dossier of HDI Trimer (CAS 28182-81-2) and Wanhua product information.
	16.4	Classification of the substance and the assessment method used in accordance with Regulation 1272/2008/EC (CLP): Cross-reference to HDI Trimer (CAS 28182-81-2).
	16.5 Relevant H sentences	
		H302 Harmful if swallowed.

		H315 May cause an allergic skin reaction. 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 if inhaled or cause breathing difficulties. H335 May cause respiratory irritation. H412 Harmful to aquatic organisms, with long-lasting effects.