Version number:1
Date: 16 April 2021
Supersedes: Not applicable

SAFETY DATA SHEET

Vuba Resin Binder Part B

This Safety Data Sheet contains information concerning the potential risks to those involved in handling, transporting and working with the material, as well as describing potential risks to the consumer and the environment. This information must be made available to those who may come into contact with the material or are responsible for the use of the material. This Safety Data Sheet is prepared in accordance with formatting described in the REACH Regulation (EC) No 1907/2006, and the UK REACH Regulations SI 2019/758.

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

1.1 Product identifier

Trade Name:	**Vuba Resin Binder Part B**
Chemical name :	**Hexamethylene diisocyanate oligomers, Isocyanate**
EC no :	**931-274-8**
CAS No :	**28182-81-2**
EU REACH registration No :	**01-2119485796-17-XXXX**

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

Part B of 2-part resin system
No uses advised against. Use only as instructed.

1.3 Details of the supplier of the safety data sheet

Vuba Building Products Limited
Units B2, B3 and B4 Grovehill Industrial Estate,
Beverley, HU17 0LF.

Tel: 01482 778897
E mail: sales@vubagroup.com
Web: www.vubaresinproducts.com

1.4 Emergency telephone number

In case of emergency Tel. 01482 778897 (09:00-17:00 Mon-Fri)

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to the CLP Regulation (EC) No 1272/2008 and the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain:

Acute Tox. 4 (Inhalation)	H332 Harmful if inhaled
Skin Sens. 1	H317 May cause an allergic skin reaction
STOT SE 3	H335 May cause respiratory irritation

2.2 Label elements

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

P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P284 - In case of inadequate ventilation wear respiratory protection
P280 - Wear protective gloves, protective clothing, face shield, eye protection
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P403+P233 - Store in a well-ventilated place. Keep container tightly closed

2.3 Other hazards
Will set hard upon mixing with Part A of the product. Read instructions carefully before use
Contains no components known to be PBT or vPvB or to have endocrine disrupting properties.

SECTION 3: Composition

3.1 Substances

Name	CAS/EC nos	Conc. %w/w	Classification
Hexamethylene diisocyanate oligomers	CAS No 28182-81-2 EC no 931-274-8	>99.8%	Acute Tox. 4 H332 Skin Sens. 1 H317 STOT SE 3 H335
hexamethylene-di-isocyanate	CAS No 822-06-0 EC no 212-485-8	< 0,2	Acute Tox. 4 H302 Acute Tox. 1 H330 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Skin Sens. 1 H317 Resp. Sens. 1 H334 STOT SE 3 H335 Specific concentration limits: C >= 0.5 Resp. Sens. 1, H334 C >= 0.5 Skin Sens. 1, H317

3.2 Mixtures
Not applicable, product is a substance.

SECTION 4: First Aid Measures

4.1 Description of first aid measures
EYE CONTACT: Flush thoroughly with water, including under eyelids for several minutes. Obtain medical attention if continued signs of discomfort.
INHALATION: Remove from exposure. If breathing becomes difficult get immediate medical attention.
SKIN CONTACT: Wash off with soap and water. Seek medical attention if irritation or rash occurs.
INGESTION: If swallowed, rinse mouth with water and obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed
May cause an allergic skin reaction or asthmatic reaction in sensitive individuals.

4.3 Indication of any immediate medical attention and special treatments needed
Symptomatic treatment as required

SECTION 5: Firefighting Measures

5.1 Extinguishing media
Suitable extinguishing media: Water spray, foam, powders, carbon dioxide
Unsuitable extinguishing media: Water jet

5.2 Special hazards arising from the substance or mixture

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapours and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

5.3 Advice for fire fighters
Fire fighters should wear protective clothing and positive pressure self-contained breathing apparatus as appropriate.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Evacuate unnecessary personnel. Ensure adequate ventilation. Do not breathe vapours, use respiratory protection if ventilation is inadequate. Use eye protection (goggles recommended) and gloves suitable for resin liquids, such as nitrile or Viton.

6.2 Environmental precautions
Prevent entry into sewers and watercourses.

6.3 Methods and materials for containment and clearing up
Absorb liquid onto sand, earth or other suitable absorbent material. Collect into a suitable labelled container for disposal. Wash spill area thoroughly with water and detergent to remove residues. Prevent washings from entering water courses.

6.4 References to other sections
See section 8 and 13 for further advice.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling
Ensure adequate ventilation. Do not breathe vapours or mists. Avoid contact with eyes and skin. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities
Store in its original labelled container in a cool, dry, well ventilated area. Not to be stored next to foodstuffs and water supplies. Keep out of reach of children and animals.

7.3 Specific end uses(s)
No special precautions. Use only as directed in accordance with the label.

SECTION 8. Exposure Controls/Personal Protection

8.1 Control parameters

Occupational Exposure Limits

Name	8 hrTWA	15 min STEL	Notes, Source
Isocyanates, all (as –NCO)	0.02 mg/m3	0.07 mg/m3	Sen EH40, 2020

DNELS

	Worker			
Human inhalation	Long term local effects	Long term systemic effects	Short term local effects	Short term systemic effects
Hexamethylene diisocyanate oligomers (28182-81-2)	—	0.5 mg/m^3	1 mg/m^3	—
Hexamethylene-di-isocyanate (822-06-0)	0.035 mg/m^3	0.035 mg/m^3	0.07 mg/m^3	0.07 mg/m^3

PNECS

PNEC	**Hexamethylene diisocyanate oligomers (28182-81-2)**	**Hexamethylene-di-isocyanate (822-06-0)**
PNEC aqua (freshwater):	127 µg/l (Daphnia magna)	> 77.4 µg/l (Scenedesmus subspicatus)
PNEC aqua (marine water):	12.7 µg/l (Daphnia magna)	> 7.74 µg/l (Scenedesmus subspicatus)
PNEC aqua (intermittent releases):	1270 µg/l (Daphnia magna)	> 774 µg/l (Scenedesmus subspicatus)
PNEC sediment (freshwater):	266.7 g/kg (equilibrium partitioning)	> 0.01334 mg/kg dwt (equilibrium partitioning)
PNEC sediment (marine water):	—	> 0.001334 mg/kg dwt (equilibrium partitioning)
PNEC soil:	53.2 g/kg (equilibrium partitioning)	> 0.0026 mg/kg dwt equilibrium partitioning
PNEC STP:	38.28 mg/l (OECD 209)	8.42 mg/l (OECD 209)

8.2 Exposure controls

Engineering controls: None usually required for handling outside. Indoors, ensure adequate ventilation, especially in confined areas. Ensure good level of basic ventilation with at least 1-3 air exchanges per hour. Indoor use requires use of LEV with >80% efficiency.

Respiratory protection: None usually required unless ventilation rate is not possible to achieve. In case of insufficient ventilation: respirator with a vapour filter (EN 141). recommended Filter Type A3 / P3

Hand Protection: In case of contact, wear gloves suitable for polyurethane resin liquids.
Protective gloves: Neoprene. Glove thickness: >= 0.5 mm. Break through time: >= 480 min.
Glove manufacturers recommendations should always be consulted.

Eye protection: Tightly fitting goggles recommended.

Skin protection: Coveralls.

Environmental Exposure Controls: Prevent entry into drains and watercourses.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a) Physical state:	Liquid
b) Colour:	Colourless
c) Odour:	Odourless
d) Melting point:	-51.3 -28.4 °C
e) Boiling point:	No data available - decomposes
f) Flammability:	Not applicable, product is a liquid
g) Upper/lower flammability limits:	No data available
h) Flashpoint:	228°C (EN22719)
i) Autoignition temperature:	460°C
j) Decomposition temperature:	Approx 250°C
k) pH:	Not applicable
l) Viscosity, dynamic:	2400 mPa.s
m) Solubility:	Hydrolyses in water.
n) Partition coefficient (log Kow):	5.54 - 9.81

o) Vapour pressure:	0.002 Pa @ 20 °C
p) Density and/or relative density:	1.17 @ 20°C
q) Relative vapour density:	No data available
r) Particle characteristics	Not applicable, product is a liquid

9.2 Other information
None

SECTION 10: Stability and Reactivity

10.1 Reactivity
No reactive hazards known, but will react with curing agents and certain catalysts and set to solid form

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
None.

10.4 Conditions to avoid
Avoid exposure to moisture and high temperatures.

10.5 Incompatible materials
Avoid contact with strong oxidisers, acids and bases.

10.6 Hazardous decomposition products
None under normal conditions of use. On combustion or thermal decomposition: Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Isocyanates, Hydrogen cyanide.

SECTION 11: Toxicological Information

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

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components.

(a) acute toxicity	Based on available data, the substance is classified as harmful by inhalation. LD_{50} oral rat > 2500 mg/kg (OECD 423 (female)) LD_{50} dermal rat > 2000 mg/kg (OECD 402) LD_{50} dermal rabbit > 2000 mg/kg LC_{50} inhalation rat (mg/l) 0.39 mg/l/4h (OECD 403 (female))
(b) skin corrosion/irritation	Based on available data, the classification criteria are not met. Skin corrosion/irritation rabbit: Not classified (OECD 404 method)
(c) serious eye damage/irritation	Based on available data, the classification criteria are not met. Serious eye damage/irritation rabbit : Not classified (OECD 405 method)
(d) respiratory/skin sensitisation	Based on available data, the substance is classified as a skin sensitiser Mouse LLNA: sensitising (OECD 429)
(e) germ cell mutagenicity	Based on available data, the classification criteria are not met.
(f) carcinogenicity	Based on available data, the classification criteria are not met.

(g) reproductive toxicity	Based on available data, the classification criteria are not met.
(h) STOT-single exposure	Based on available data, the substance is classified as a respiratory irritant.
(i) STOT-repeated exposure	Based on available data, the classification criteria are not met. NOAEL (inhalation, rat, vapour, 90 days) 3.3 mg/l/6h/day (OECD 413)
(j) aspiration hazard	Based on available data, the classification criteria are not met.

11.2 Information on other hazards
No additional information.

SECTION 12: Ecological Information

12.1 Toxicity
Not expected to present a hazard to aquatic organisms.

LC50 fish 8.9 mg/l (Brachydanio rerio)
EC50 Daphnia 127 mg/l (48 h static / EU C.2)
EC50 other aquatic organisms > 1000 mg/l (72h / Scenedesmus subspicatus / DIN 38412)
ErC50 (algae) > 1000 mg/l (0-72 h static / Desmodesmus subspicatus / EU C.3)
EC50, ACTIVATED SLUDGE, 3828 mg/l (3 Hours, (OECD 209 method))

12.2 Persistence and degradability
Not considered to be readily biodegradable.

12.3 Bioaccumulative potential
Not considered to be bioaccumulative. Hydrolyses in water.

12.4 Mobility in soil
Expected to be of low mobility.

12.5 Results of PBT and vPvB assessment
None of the components are known to be PBT or vPvB.

12.6 Endocrine disrupting properties
None of the components are known to have endocrine disrupting properties.

12.7 Other adverse effects
None known.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods
Recover and recycle unused product if possible. If recovery and recycling are not possible incinerate or dispose of in accordance with local and national regulations.

SECTION 14: Transport Information

Not considered to be dangerous goods for transport.

	ADR	IMDG	ICAO
14.1 UN Number	NONE	NONE	NONE
14.2 UN Proper shipping name	NONE	NONE	NONE
14.3 Transport hazard class(es)	NONE	NONE	NONE
14.4 Packing group	NONE	NONE	NONE

14.5 Environmental hazards	NONE	NONE	NONE
14.6 Special precautions for user	NONE	NONE	NONE
14.7 Maritime transport in bulk according to IMO instruments	Not Applicable	Not Applicable	Not Applicable

SECTION 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
All components are listed as existing substances in Europe
All components are considered compliant with REACH

15.2 Chemical Safety Assessment
A Chemical Safety Assessment has not been carried out for this product.

SECTION 16: Other Information

Revision information:
This is a new SDS

List of Abbreviations used in this SDS:
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging Regulation (EC) no 1272/2008
EC European Community/Commission
PBT Persistent, Bioaccumulative and Toxic
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) no 1907/2006
vPvB very Persistent, very Bioaccumulative

References:
Source: European Chemicals Agency, http://echa.europa.eu/

Method used for classification of mixtures:
Ingredient based approaches

H Statements used in Section 3
None

Training requirements for workers
No special training requirements

Exposure Scenario 1 Professional End Use

Exposure Scenario Format -	
1.Title	
Free short title	Use in resin binding products
Sector of Use	Building and construction work (SU 19)
Processes, tasks activities covered	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC 5 Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8a Roller application or brushing PROC 10 Treatment of articles by dipping and pouring PROC 13
2. Operational conditions and risk management measures	
Product Characteristics	Physical form of product : Liquid Vapour pressure: <=0.003 Pa, at 40 °C Covers percentage in the product up to 100%
Operational Conditions	Maximum process temperature 40 °C Indoor/outdoor use
2.1 Control of workers exposure	
Contributing scenario 1	
PROC 5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
Frequency and duration of use/exposure	Covers daily exposures up to 8 hr/day
Operational conditions affecting workers exposure	Indoor use: Provide a basic standard of general ventilation (1 to 3 air changes per hour)
Technical conditions and measures to control dispersion from source towards the worker	Indoor use: Local exhaust ventilation - efficiency of at least 80.0 %
Contributing scenario 2	
PROC 8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
Frequency and duration of use/exposure	Covers daily exposures up to 8 hr/day
Operational conditions affecting workers exposure	Maximum process temperature 40°C Indoor use: Provide a basic standard of general ventilation (1 to 3 air changes per hour)
Technical conditions and measures to control dispersion from source towards the worker	Indoor use: Local exhaust ventilation - efficiency of at least 80.0 %
Contributing scenario 3	
PROC 10	Roller application or brushing (low energy spreading of coatings)
Frequency and duration of use/exposure	Covers daily exposures up to 8 hr/day

Operational conditions affecting workers exposure	Indoor use: Provide a basic standard of general ventilation (1 to 3 air changes per hour)
Technical conditions and measures to control dispersion from source towards the worker	Indoor use: Local exhaust ventilation - efficiency of at least 80.0 %
Contributing scenario 4	
PROC 13	Treatment of articles by dipping and pouring
Product characteristic	Covers percentage in the product up to 100%
Frequency and duration of use/exposure	Covers daily exposures up to 8 hr/day
Operational conditions affecting workers exposure	Indoor use: Provide a basic standard of general ventilation (1 to 3 air changes per hour)
Technical conditions and measures to control dispersion from source towards the worker	Indoor use: Local exhaust ventilation - efficiency of at least 80.0 %
2.2 Control of environmental exposure	
ERC 8c **ERC 8f**	Wide dispersive indoor use resulting in inclusion into or onto a matrix Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Amounts used	Daily amount for wide dispersive uses <= 50000 kg/day
Frequency and duration of use	Intermittent (< 12 time per year) or continuous use/release
Environment factors not influenced by risk management	Flow rate of receiving surface water: 18000 m^3/d
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Assumed on-site sewage treatment plant flow (m^3/d): 2000 m^3/d Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 100 %
Organizational measures to prevent/limit release from site	Specific organisational measures or measures needed to support the functioning of particular technical measures. Those measures need to be reported in particular for demonstrating strictly controlled conditions.
Conditions and measures related to municipal sewage treatment plant	Size of municipal sewage system/treatment plant (m3/d); specify degradation efficacy; sludge treatment technique (disposal orrecovery); measures to limit air emissions from sewage treatment (if applicable)
Conditions and measures related to external treatment of waste for disposal	Dispose of waste or used sacks/containers according to local regulations.
3 Exposure estimation	
Environmental release and exposure: Water 5.5E-7 kg/day Air 8.25E-6 kg/day Soil 2.75E-7 kg/day	
Worker exposure: Local – Inhalation DNEL : Acute: 1 mg/m^3 Long-term: 0.5 mg/m^3	

Route of exposure and type of effects	Exposure estimate	RCR
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC 5)		
Inhalation, local, long-term	0.42 mg/m³ (TRA Worker v3)	0.84
Inhalation, local, acute	0.42 mg/m³ (TRA Worker v3)	0.42
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities (PROC 8a)		
Inhalation, local, long-term	0.42 mg/m³ (TRA Worker v3)	0.84
Inhalation, local, acute	0.42 mg/m³ (TRA Worker v3)	0.42
Roller application or brushing (PROC 10)		
Inhalation, local, long-term	0.42 mg/m³ (TRA Worker v3)	0.84
Inhalation, local, acute	0.42 mg/m³ (TRA Worker v3)	0.42
Treatment of articles by dipping and pouring (PROC 13)		
Inhalation, local, long-term	0.42 mg/m³ (TRA Worker v3)	0.84
Inhalation, local, acute	0.42 mg/m³ (TRA Worker v3)	0.42

4. Guidance to DU to evaluate whether boundaries set by the ES are being met

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his implemented risk management measures are adequate.