TRIDRIVE UV RESISTANT RESIN BOUND PAVING SYSTEM PART B

Product Name:	**TriDrive UV Resistant Resin Bound Paving System Part B 1154670 Rev.2**
Revision Date:	13-June-2023 **According to Regulation (EC) No. 1907/2006**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name: TriDrive UV Resistant Resin Bound Paving System Part B

Product Description: PMDI

Pure Substance/Mixture: Mixture

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

Binder Component of a Polyurethane System

1.3. Details of the supplier of the safety data sheet

Tricel Composites (GB) Limited

Unit A, Foxway,
Off Atkinson Street,
Leeds, West Yorkshire,
LS10 1PS.
Tel: +44 (0)113 270 3133

Tricel Composites (NI) Limited

Unit 4, Milltown Ind. Estate, Greenan Road. Warrenpoint, Newry
Co. Down,
BT34 3FN.
Tel: +44 (0)284 175 3738

1.4. Emergency Telephone Number

Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.
Telephone Number: +353 (0)1 809 2166

Leeds:	**Newry:**
Tel: +44 (0)113 270 3133	Tel: +44 (0)284 175 3738

1.4.1. Poison Information Centre Telephone Number

European emergency phone number: 112
UK: National Poisons Emergency Number : 0344 892 0111
Ireland: National Poisons Information Centre (NPIC)Telephone Healthcare Professionals : +353 (01) 809 2566. (24 hour service)Telephone Members of Public: +353 (01) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)

2. Hazards Identification

2.1. Classification of the substance or mixture

Classification of the substance or mixture - GHS/CLP (n° 1272/2008)

GHS Classification

Skin Corrosion/Irritation :	Category 2
Serious Eye Damage/ Eye Irritation:	Category 2
Respiratory Sensitization:	Category 1
Skin Sensitization:	Category 1
Specific Target Organ Toxicity (Single Exposure):	Category 3
Specific Target Organ Toxicity (Repeated Exposure):	Category 2

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Extra labelling to display Extra classification(s) to display

Hazard Statements

GHS07

GHS08

Signal Word: Danger

2.2.1. Hazard Statements

H319: Causes serious eye irritation.

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

H373: May cause damage to organs through prolonged or repeated exposure.

H335: May cause respiratory irritation.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H351: Suspected of causing cancer.

H332: Harmful if inhaled.

2.2.2. Precautionary Statements

P260:	Do not breathe dust/fume/gas/mist/vapours/spray.
P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P284:	[In case of inadequate ventilation] wear respiratory protection.
P302+P352:	IF ON SKIN: Wash with plenty of water/…
P304+P340:	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P33:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+313:	IF exposed or concerned: Get medical advice/attention.

Hazard Statements:

Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.

Precautionary Statements:

Prevention:

Wear protective gloves. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well- ventilated area. Avoid breathing vapour. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace

Response:

IF ON SKIN: Take off contaminated clothing and wash before reuse. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. IF IN **EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Wash hands after handling. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Storage:

Store locked up. Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.

Disposal:

Dispose of contents and container in accordance with all local, regional, national and international regulations.

3. Composition/Information on Ingredients

Compound	CAS No	EC Number	REACH Registration number	Concentration %	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Polymeric MDI	9016-87-9	N/A	In accordance with Article 2 (9) of REACH polymers should be exempted from the general obligation to register.	50-70	Not Classified
4,4'-methylenediphenyl diisocyanate	101-68-8	202-966-0	01-2119457014-47-0005	30-50	Skin Sens. 1: H317; Acute Tox. 4: H332; STOT SE 3: H335;

4. First Aid Measures

4.1. Description of First Aid Measures

Eye

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Check for and remove any contact lenses. Get medical attention immediately.

Skin

After contact with skin, wash immediately with plenty of warm soapy water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-TamTM, PEG-400) or corn oil may be more effective than soap and water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhaled

Harmful if inhaled. May cause respiratory irritation. This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitized persons.
LC50 (rat): ca. 490 mg/m³ (4 hours) : using experimentally produced respirable aerosol having aerodynamic diameter <5microns.

Swallowed

No specific data.

Protection of first-aiders

Use proper personal protective equipment as indicated in Section 8.

Notes to an attending physician:

Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

5. Firefighting Measures

5.1. Extinguishing media

Foam, CO2 or dry powder.

5.2. Special Hazards arising from substance or mixture

In a fire or if heated, a pressure increase will occur and the container may burst.

5.3. Specific Extinguishing Methods

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. PVC boots, gloves, safety helmet and protective clothing should be worn.

5.4. Precautions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation.

Protective Equipment

Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment

6.2. Environmental Precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and Material for Containment and Cleaning Up

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. If the product is in its solid form: Spilled MDI flakes should be picked up carefully. The area should be vacuum cleaned to remove remaining dust particles completely. If the product is in its liquid form: Absorb spillages onto sand, earth or any suitable adsorbent material. Leave to react for at least 30 minutes. Do not absorb onto sawdust or other combustible materials. Shovel into open-top drums for further decontamination. Wash the spillage area with water. Test atmosphere for MDI vapour. Neutralise small spillages with decontaminant. Remove and dispose of

residues. The compositions of liquid decontaminants are given in Section 16. Note: see section 1 for emergency contact information and section 13 for waste disposal. Secondary disaster prevention measures

7. Handling and Storage

7.1. Precautions for safe handling

Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Atmospheric concentrations should be minimized and kept as low as reasonably practicable below the occupational exposure limit. The efficiency of the ventilation system must be monitored regularly because of the possibility of blockage. Wear appropriate respirator when ventilation is inadequate. When the product is sprayed or heated, suitable respiratory protection equipment with positive air supply is required. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. A basic essential in sampling, handling and storage is the prevention of contact with water. Empty containers retain product residue and can be hazardous. Do not reuse container. Keep equipment clean. Keep stocks of decontaminant readily available.

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

Store in accordance with local regulations. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use

appropriate containment to avoid environmental contamination. Unsuitable containers: copper, copper alloy and galvanized surfaces

8. Exposure Controls/Personal Protection

8.1. Control Parameters

Exposure limit values

Diphenylmethane 4,4'- diisocyanate : GBZ-2 (China, 4/2007). PC-TWA: 0.05 mg/m³ 8 hour(s). PC-STEL: 0.1 mg/m³ 15 minute(s).

Engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Diisocyanates can only be smelled if the occupational exposure limit has been exceeded considerably.

Personal protective equipment

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hand protection

Use chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms. Examples of glove materials that might provide suitable protection include :Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol copolymers laminated ("EVAL"), Polychloroprene (Neoprene*),
Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Fluoroelastomer (Viton*). When prolonged or frequently repeated contact may occur, a glove with protection class of 5 or higher (breakthrough time greater then 240 minutes according to EN374) is recommended. When only brief contact is expected, a glove with protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN374) is recommended. Contaminated gloves should be decontaminated and disposed of. Notice: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to : other chemicals that may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as instructions/specifications provided by the glove supplier. Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials which may be hazardous in contact with skin. Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at www.gisbau.de.

Skin and body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance:	Viscous. Liquid
Colour:	Dark brown
Physical data	
Odour:	Musty
pH:	Not applicable.
Melting point/freezing point:	
Boling Point (℃):	>204(decomposes) decomposes before boiling
Flash point(℃):	>230 °C
Explosive limits:	Not available
Vapor Pressure:	10-4 mm Hg at 40 °C
Saturated vapor pressure (mmHg) :	
Relative Vapor Density:	
Relative Density (water=1):	1.220～1.250at 25 °C
Solubility:	Insoluble in water.
Coefficient of Oil/Water Distribution (Partition Coefficient):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature(℃):	>300

10. Stability and Reactivity

10.1. Chemical stability

Stable at room temperature.

10.2. Conditions to avoid

Avoid high temperatures.

10.3. Incompatible materials

Water, alcohols, amines, bases, and acids.

10.4. Hazardous Decomposition Products

Combustion products may include: carbon oxides (CO, CO2) nitrogen oxides (NO, NO2 etc.) hydrocarbons and HCN.

10.5. Possibility of Hazardous Reactions

Reaction with water (moisture) produces CO2-gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.

11. Information on Toxicological Effects

Acute toxicity:

Product/ingredient name

Diphenylmethane 4,4'- diisocyanate

LD50 Dermal Rabbit 9400 mg/kg –

LD50 Oral Rat 2000 mg/kg -

LC50 Inhalation Rat Dusts and mists 2.24 mg/L 1 hour

Skin irritation/corrosion:

Adverse symptoms may include the following: irritation redness

Eye damage/irritation:

Causes eye irritation.

Respiratory or skin sensitization:

shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

Reproductive cell mutagenicity:

No known significant effects or critical hazards.

Carcinogenicity:

Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m3), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m3 and no effects at 0.2 mg/m3. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.

Reproductive toxicity:

Specific target organ toxicity —single exposure:

Specific target organ toxicity —repeated exposure:

Aspiration hazard:

12. Ecological Information

12.1. Ecotoxicity

Product/ingredient name	Result	Species	Exposure
Diphenylmethane 4,4'-diisocyanate	Acute EC50 >1000 mg/L	Daphnia	48 hours
	Acute LC50 >1000 mg/L	Fish	96 hours

12.2. 12.2. Persistence and Degradability

Not available

12.3. 12.3. Bio-accumulative potential

Not available

12.4. 12.4. Mobility in Soil

By considering the production and use of the substance, it is unlikely that significant environmental exposure in the air or water will arise. Immiscible with water, but will react with water to produce inert and non-biodegradable solids. Conversion to soluble products, including diamino- diphenylmethane (MDA), is very low under the optimal laboratory conditions of good dispersion and low concentration. In air, the predominant degradation process is predicted to be a relatively rapid OH radical attack, by calculation and by analogy with related diisocyanates.

13. Disposal Considerations

13.1. Waste Treatment Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by- products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. Transport Information

Product in accordance with the current provisions of the Transport of Dangerous Goods by Road Act (ADR) and Rail Systems it is not dangerous.

(RID), International Maritime Dangerous Goods Act (IMDG) and International Air Transport Association (IATA) subject to regulations.

Transport by Road:	Not applicable
Sea Transport:	Not applicable
Air Transportation:	Not applicable
Ship Transportation in inland waters :	Not applicable
Rail Transport:	Not applicable

15. Regulatory Information

The product is classified and label ed according to Regulation (EC) No. 1272/2008 (GHS/CLP). Contains isocyanates. See information supplied by the manufacturer.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet