

Version 3

Date Issued: 6th October 2007

conforms to Regulation (EC) no 1907/2006

1. Identification of the substance/preparation and company

Product Name: **Deckshield Elastomeric Membrane Hardener B**

Application: Part of the Deckshield system for Car Park Decking. Hardener B isocyanate component of a 2 pack, solvent free, flexible crack bridging polyurethane membrane. For application over asphalt, concrete and screeds in combination with an appropriate primer to provide a highly flexible waterproof membrane, normally used under a Deckshield wearing surface on car park decks or on suspended floors. When mixed, the product is applied using a squeegee and/or roller. A pre-polymer based on aromatic polyisocyanate.

Manufacturer:

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3. Hazards Identification

Harmful by inhalation. This hazard is most likely to arise when materials are heated, sprayed, used in a confined unventilated space or if correct handling procedures are not followed.

Irritating to eyes.

May cause sensitisation by inhalation and skin contact. Repeated and /or prolonged exposure may cause an allergic reaction/sensitisation. Once sensitised, an individual may produce an allergic reaction every time they are in contact with isocyanates. Individuals who have developed sensitivity may experience wheezing, tightness of the chest and shortness of breath. A hyper-reactive response to even minimal concentrations of isocyanate may develop in sensitised persons.

2. Composition/information on constituents

Chemical Name	EINECS No.	CAS No.	% by weight	Symbols and Risk Phrases
Prepolymer based on aromatic polyisocyanate	-	37273-56-6	> 90	Xi; R36. R43.
toluene 2,4-diisocyanate	209-544-5	584-84-9	0.1 - 0.5	T+; R26. R36/37/38. R42/43. R52/53. R40 (Carcinogenic, Category 3).
Polyisocyanate	-	28182-81-2	< 10	Xi; R43.
Hexamethylene-1, 6-diisocyanate	212-485-8	822-06-0	< 0.1	T; R23. R36/37/38. R42/43.

See section 16 Additional information, for full text regarding symbols and Risk phrases.

4. First Aid measures

Inhalation : Remove affected person from exposure, keep them warm and at rest. Obtain medical attention. Delayed appearance of the complaints (difficulty in breathing, coughing, asthma) are possible following severe exposure.

Skin contact : Wash with soap and plenty of water or a suitable skin cleanser as soon as possible. If irritation persists, seek medical advice.

Eye Contact : Hold eyelids apart and carefully and thoroughly flush with plenty of water for at least 15 minutes. Seek medical advice.

Ingestion : If the person is conscious, wash out mouth with water. Do not swallow mouth wash. Seek medical advice. Do not induce vomiting unless under medical supervision.

5. Fire-fighting measures

- Suitable extinguishing media** : Carbon dioxide (CO₂), foam, dry powder.
Water spray should be used for larger fires.
- Un-Suitable extinguishing media** : High volume water jet.
- Special exposure hazards** : Burning produces carbon oxides, hydrogen cyanide, nitrogen oxides and isocyanate vapour.
- Special protective equipment** : Wear self-contained breathing apparatus and protective suit.
- Additional information** : Do not allow contaminated extinguishing water to enter the soil, drains, sewers or water courses.

6. Accidental release measures

- Personal precautions** : Use personal protective equipment as detailed in Section 8.
Ensure adequate ventilation.
- Environmental precautions** : Prevent further leakage or spillage and prevent entry into drains, sewers and water courses. The reaction with water produces carbon dioxide and insoluble material which could cause the drains to block. If any enters drains, flush away with copious amounts of water.
If washing the spillage to drain will breach a consent condition, dispose of in another way. Make sure the disposal site is licensed to accept this type of waste.
- Methods for cleaning up** : Soak up with inert absorbent material (e.g. sand, sawdust) wetted out with water to expedite the process. Leave the material to react for 30 minutes.
Shovel into suitable open-top containers, do not close container for at least 24 hours (because of evolution of carbon dioxide) and keep damp in a safe, well ventilated area.
Dispose in accordance with Section 13.
Wash the area with plenty of water.

7. Handling and storage

- Handling** : Ensure adequate ventilation or provide exhaust ventilation in work area.
- If sprayed, exhaust ventilation is required and all other personnel to be excluded from area.
In all areas where isocyanate aerosols and/or vapour concentrations are produced, exhaust ventilation must be provided in such a way that the WEL (see section 8) is not exceeded. The air should be drawn away from the personnel handling the product.
- Use personal protective equipment as detailed in Section 8.
Handle and open container with care. Avoid skin and eye contact.
- Storage** : Store in a dry, cool, well-ventilated place. Keep container tightly closed.
Do not allow to freeze as some crystallisation will occur.
Maintain store between temperatures 5 - 35 °C.

8. Exposure controls/personal protection

- Workplace Exposure Limit (WEL)** : Isocyanates, all (expressed as –NCO)
0.02 mg/m³ 8 hour Time Weighted Average (TWA)
0.07 mg/m³ 15 minute Short Term Exposure Limit (STEL)
- Engineering measures to reduce exposure** : Ensure adequate ventilation, especially in confined areas.
If sprayed, exhaust ventilation is required.

Personal protective equipment :

- Respiratory protection** : Required in insufficiently ventilated working areas (especially during mixing and always if sprayed). An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter respirator.
In the case of hypersensitivity of the respiratory tract (e.g. asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with the product.
- Eye protection** : Goggles or full face mask.
- Hand protection** : Impermeable gloves -
Butyl rubber [IIR], thickness ≥ 0.5 mm, breakthrough time ≥ 480 mins
Fluorinated rubber [FKM], thickness ≥ 0.4 mm, breakthrough time ≥ 480 mins
Isocyanates can harden gloves and increase the risk of their splitting.
Check regularly for degradation and replace as necessary.
- Skin and body protection** : Protective suit and heavy duty work shoes.
- Protective measures** : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.

9. Physical and chemical properties

Appearance	: yellowish coloured liquid.	Viscosity	: ~7000 mPa's at 23°C
Odour	: Almost odourless	Relative Density	: ~1.06 at 20°C
Boiling Point	: decomposes/polymerises	Water solubility	: Insoluble, reacts to produce carbon dioxide and polyurea solid.
Flashpoint	: > 190°C		
Vapour pressure	: ~17 mbar at 50°C		

10. Stability and reactivity

Material is stable when stored and handled correctly.

- Conditions to avoid** : Avoid high temperatures. Do not allow to freeze.
- Materials to avoid** : Exothermic reaction with amines, alcohols.
Reacts with water forming carbon dioxide and polyurea solid.
- Hazardous decomposition products** : No hazardous decomposition products when stored and handled correctly.
Thermal decomposition > 200°C, polymerises with evolution of carbon dioxide.

11. Toxicological information

- Acute oral toxicity** : Prepolymer based on aromatic polyisocyanate
LD₅₀ Oral (rat) : >5,000 mg/kg
toluene 2,4-diisocyanate
LD₅₀ Oral (rat) : 5,800 mg/kg
- Irritation** : Over exposure, especially when spraying without the necessary precautions, entails the risk of concentration dependant irritating effects on eyes, nose, throat and respiratory tract.
In mild cases the affected person may experience slight irritation of the eyes, nose and throat, possibly combined with dryness of the throat. In more severe cases the person may suffer acute bronchial irritation and difficulty in breathing.
- Skin** : Prolonged contact with the skin may cause tanning and irritant effects.
There is some evidence of sensitising effects in testing with guinea pigs.

- Sensitisation** : Repeated and /or prolonged exposure, especially at levels above the MEL, may cause an allergic reaction/respiratory sensitisation. Once sensitised, an individual may produce an allergic reaction every time they are in contact with isocyanates. Individuals who have developed sensitivity may experience wheezing, tightness of the chest and shortness of breath. A hyper-reactive response to even minimal concentrations of isocyanate may develop in sensitised persons.
The onset of respiratory symptoms (difficulty in breathing, coughing, asthma) may be delayed for several hours after exposure.
Repeated and/or prolonged skin contact may cause skin sensitisation.
- Long term toxicity** : There are reports that chronic exposure by inhalation may result in decreases in lung function.

12. Ecological information

- Ecotoxicity** : Prepolymer based on aromatic polyisocyanate
Brachydanio rerio, 96 hour test, no toxic effects with saturated solution
Daphnia Magna, 48 hour test, no toxic effects with saturated solution
Bacteria, EC₅₀ > 10,000 mg/l
Algae, 72 hour test, no toxic effects with saturated solution
- Toluene 2,4-diisocyanate
Brachydanio rerio, 96 hour test, LC₅₀ >100 mg/l
Daphnia Magna, 48 hour test, EC₅₀: 12.5 mg/l
Bacteria, 3 hour test, EC₅₀ > 100 mg/l
Algae, 96 hour test, EC₅₀: 3,230 mg/l
- From Ecotoxicological reports on a comparable product.
- Mobility** : Reacts with water to produce carbon dioxide and polyurea solid.
- Persistence and degradability** : From Ecotoxicological reports of a comparable product the Prepolymer based on aromatic polyisocyanate is not readily biodegradable.
Toluene 2,4-diisocyanate - 0% 28 days (i.e. not degradable).
The polyurea produced on contact with water is insoluble, inert and non-biodegradable.
- Bioaccumulative potential** : Not expected to be bioaccumulative.
- Additional ecological information** : It is unlikely that significant environmental exposure in the air or water will arise.

13. Disposal considerations

- Unused Product/waste from cleaning etc.** : Dispose of in accordance with local and national regulations.
Do not empty into drains, sewers or water courses.
EC Waste Catalogue (EWC) code: 08 05 01*, a hazardous waste.
- Contaminated packaging** : **If the container has been used to mix the product**, dispose of as non-hazardous packaging waste in accordance with local and national regulations after removing/invalidating the warning label.
Use EWC Code 150102 for plastic, 150104 for metal.
- If the container has not been used to mix the product**, Fill used containers with water and a little detergent, allow to stand for at least 24 hours. Dispose of as non-hazardous waste in accordance with local and national regulations after removing/invalidating the warning label.
Use EWC Code 150102 for plastic, 150104 for metal..
- Untreated** well drained containers to be disposed of as hazardous packaging waste, use EWC Code 150110*.

14. Transport information

Not classified as hazardous for transport.

Other information:

Not dangerous cargo. Irritating to skin and mucous membranes. Avoid temperatures below 0 °C. Avoid heat above +50 °C. Keep dry. Keep away from foodstuffs, acids and alkalis.

15. Regulatory information

Classification according to EEC directive:

Labelling:



Harmful

R-phrases

- R20** : Harmful by inhalation.
- R42/43** : May cause sensitisation by inhalation and skin contact.
- R36** : Irritating to eyes.

S-phrases

- S23** : Do not breathe vapour/spray.
- S24** : Avoid contact with skin.
- S26** : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S45** : In case of accident or if you feel unwell, seek medical advice immediately (show this label where possible).
- S36/37/39** : Wear suitable protective clothing, gloves and eye/face protection.

Special provisions statement : Contains isocyanates. See information supplied by the manufacturer.

Hazardous component(s) which must be listed on the label : Toluene diisocyanate. Prepolymer based on aromatic polyisocyanate

EC Directives: Dangerous Substances Directive, 67/548/EEC & adaptations.
Dangerous Preparations Directive, 1999/45/EC.
Safety Data Sheets Directive, 91/155/EEC and adaptations.

Statutory Instruments: Chemicals (Hazard Information & Packaging for Supply) Regs 2002.
Control of Substances Hazardous to Health Regs 1999.
Environmental Protection (Duty of Care) Regs. 1991.

Codes of Practice Waste Management. The Duty of Care.

Denmark: Kodernr 5-3 (1993).

16. Other Information

The text has changed in sections 1, 2, 3, 11, 12, 13 15 and 16.

This safety data sheet has been prepared in accordance with REACH.

This is in addition to the Health and Safety at Work Act 1974.

Users of our products should take appropriate measures to ensure working practices are in accordance with the Control of Substances Hazardous to Health Regulations (COSHH).

This data sheet does not replace the obligation of the user to provide their own assessment of workplace risk as required by other Health & Safety legislation.

EC Directive relating to the classification, packaging and labelling of dangerous substances and preparations –
Classification(s) and Risk (R) phrase(s) referred to in this document:-

T+ : Very Toxic T : Toxic
Xi : Irritant

- R23 : Toxic by inhalation.
R26 : Very toxic by inhalation
R36 : Irritating to eyes.
R36/37/38 : Irritating to eyes, respiratory system and skin.
R40 : Limited evidence of a carcinogenic effect.
R42/43 : May cause sensitisation by inhalation and skin contact.
R43 : May cause sensitisation by skin contact.
R52/53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The European Committee of Paint, Printing Ink and Artist's Colours Manufacturers' Associations (CEPE) provides the following information on coatings containing isocyanates:-

"Ready-to-use paints containing isocyanates may have an irritant effect on mucous membranes – especially on breathing organs – and cause hypersensitivity reactions. Inhalation of vapour or spray mist may cause sensitisation. When handling paints containing isocyanates all precautions required for solvent-containing paints must be followed. Vapour and spray mist in particular should not be inhaled. Persons who are allergic, asthmatic or prone to respiratory ailments should not work with isocyanate-containing paints."

Training Advice

Applicators need to be trained in:-
Handling and hygiene associated with use of industrial chemicals.
Correct mixing and application of the product.
Correct cleaning and disposal methods.

Restrictions on Use

The product is intended for use by appropriately trained applicators in industrial situations.
It is not suitable for use in home DIY applications, especially because of its hazardous nature and the protective measures required.

The material has been designed for application by roller and squeegee - it is not recommended this material be sprayed.
The isocyanates in the hardener are respiratory sensitisers and the engineering requirements to allow spraying would have to include total exclusion of all none spraying personnel and prevention of all overspray/vapour/fumes from escaping. It would not be acceptable from a safety viewpoint to allow any escape of the material because even small concentrations can cause asthma like attacks in sensitised persons. In effect spraying can only be undertaken in a spray booth with appropriate water wash facilities for exhaust air.

Notes

Do not use organic solvents for skin cleansing, it will lead to defatting of the skin, skin irritation and/or dermatitis.
Some solvents can be absorbed through the skin.
Beware of cross contamination where different products are in use in the same location.
Take into account the Manual Handling regulations when dealing with the mixed product.

This safety data sheet is based on our present knowledge and experience and is intended to serve as a guide for safe handling of the product regarding to health and environmental aspects.