SAFETY DATA SHEET
Product: GeoBondX Standard Base

Revision: 30/4/2015

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

1.1 Product Identifier:

Product Name: GeoBondX Standard Base

1.2

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

Identified uses: Part of a resin system used to bond aggregate to surfaces

1.4 Details of supplier of the safety data sheet

Supplier: Adbruf Ltd
Gibbs Marsh Trading Estate
Stalbridge, Dorset, DT10 2RX
Tel: + 44 (0)1963 362640
Fax: + 44 (0)1963 363762
Email: sales@adbruf.com

Contact Person: David Fennell

1.5 Emergency telephone number

Please contact: +44 (0)1963 362640

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification:

Physical & chemical hazards / Fire and explosion hazards:
No Classification under CLP

Inhalation: No data available, not thought to be irritating
Skin contact: May be mildly irritating
Eye contact: Rinse thoroughly with running water and seek medical advice
Ingestion: Seek medical advice

2.2 Label elements:

This product has no label elements
Not identified as a PBT mixture

Hazard statements :

H303: May be harmful if swallowed
H316: Causes mild skin irritation
H320: Causes eye irritation
H335 May cause respiratory irritation

Precautionary statements:

P280	Wear protective gloves/protective clothing/eye rotection/ face protection
P331	Do not induce vomiting
P264	Wash skin thoroughly after handling
P370 + 378	In case of fire: use foam, carbon dioxide, dry powder or water fog for extinction
P501	Dispose of contents/container in accordance with local regulations

Supplementary precautionary statements :

P301+330+331:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302+350:	IF ON SKIN : Gently wash with soap and water
P337+313:	If eye irritation persists get medical advice/attention
P332+313:	If skin irritation occurs: Get medical advice/attention
P305++351+338:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so – continue rinsing.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Preparation:

Component	Mineral Oil	Branched Polyalcohol with Ester Groups
Wt%	10-20	30-90

Composition comments — Not identified as a PBT composition

SECTION 4: FIRST AID MEASURES

4.**1 Description of first aid measures:**

General information: Consult a physician for specific advice

Skin Contact: Wash immediately with plenty of soap and water. Remove contaminated clothing. If irritation occurs consult a doctor.

Eye Contact: Bathe the eye with running water for 15 minutes. Consult a doctor

Ingestion: Wash out mouth with water. Consult a doctor.

Inhalation: If irritation occurs, consult a doctor.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media:

Extinguishing media:	Use foam, Carbon dioxide (C02), Dry chemicals, sand, dolomite etc
	Keep run-off water out of sewers and water sources. Dike for water control. Move container from fire area if it can be done without risk. Avoid water in straight hose stream; will scatter and spread fire. Use water SPRAY only to cool Containers! Do not put water on leaked material.

5.2 Special hazards:

Unusual Fire & Explosion Hazards:	In combustion emits toxic fumes.
5.3 Advice for fire fighters:	Wear suitable respiratory protection when dealing with a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions:	Wear protective clothing and respiratory protection. Then follow as described in section 8 of this data sheet.
6.2 Precautions to environment:	Do not let the product or washing down water enter natural water courses or the sewers. Contain the spillage using bunding
6.3 Spill clean up methods:	Clean up personnel should use respiratory and/or liquid contact protection. Absorb with dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.
6.4 Reference Sections:	Section 8 and 13 of this data sheet.

SECTION 7: HANDLING & STORAGE

7.	Store in a cool, well ventilated area. Keep containers tightly closed.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8. Exposure controls:

Respiratory protection:	Not required
Hand protection:	Protective gloves
Eye protection:	Safety glasses. Ensure eye bath is to hand
Skin protection:	Protective clothing

SAFETY DATA SHEET
Product: GeoBondX Standard Base

Revision: 30/4/2015

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

These are indicative values only. Please refer to the product specification sheet.

Physical state:	Viscous liquid
Form/colour:	Brown
Odour:	Mild
Boiling Point (°C):	Not available
Specific Gravity (Water = 1):	1.0g/cm³
Vapour Density (Air = 1):	Not available
Vapour Pressure:	<0.1
Evaporation Rate:	Negligable
Viscosity:	Viscous
Flash Point (°C) (Closed Cup):	>250
Flammability Limit (lower %):	Not available
Flammability Limit (upper %):	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Stability: Avoid: Heat, sparks, flames. Air and oxidizers. Stable at normal temperatures and pressures.

10.2 Possible hazardous reactions: Strong oxidizing agents, strong acids

10.3 Hazardous decomposition products: In combustion emits toxic fumes of carbon dioxide / carbon monoxide

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects:

Ingestion:	There may be soreness and redness of the mouth and throat.
Skin contact:	There may be mild irritation at site of contact
Inhalation:	No data available. No symptoms
Eye contact:	There may be irritation and redness

SECTION 12: ECOLOGICAL INFORMATION

12. Toxicity

12.1 Mobility: Will be absorbed into the soil readily

12.2 Persistence and degradability: Some substances in the preparation are not readily biodegradable.

12.3 Bio-accumulative potential: Contains potentially bio-accumulating substances.

The information contained in the safety data sheet is given in good faith. It is accurate to the best of our knowledge and belief and has been compiled from data on raw materials. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risk as required by other health and safety legislation.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Waste is classified as hazardous waste. Disposal to a waste disposal site in accordance with the local waste disposal authority. Incinerate in suitable combustion chamber, with provision for removal of effluent gases by scrubber. Collect on absorbent material.
Dike ahead of spill for later disposal.

SECTION 14: TRANSPORT INFORMATION

14.1	UN Number:	Not classified
14.2	SHIPPING NAME:	N/a
14.3	Transport Hazard Class (ADR):	Not classified
14.4	Packaging Group:	Not classified
	IMDG:	
14.5	Emergency Action Code:	N/a
14.6	ICAD/IATA:	Not classified
14.7	TREM CARD:	N/a
14.8	Marine Pollutant:	No

SECTION 15: REGULATION INFORMATION

15.1 Safety, health and environmental regulations

UK Regulatory References:	Health and Safety at Work Act 1974
Statutory instruments:	Control of Substances Hazardous to Health
Guidance Notes:	Workplace Exposure Limits EH40
EU Legislation:	Dangerous Substance Directive 67/548/EEC
	Regulation (EC) No 1272/2008 CLP
	Regulation (EC) No 1907/2006 REACH

Reference should be made to Health and Safety at Work Act and the control of substances hazardous to Health Regulations.

SECTION 16: OTHER INFORMATION

16.1. Hazard Statements in full:

H316: Causes mild skin irritation
H335: May cause respiratory irritation
H320: Causes eye irritation
H303: May be harmful if swallowed

Classification in line with CLP

SAFETY DATA SHEET
Product: GeoBondX STD Activator

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

1.1 Product Identifier:

Product Name: GeoBondX STD Activator

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

Identified uses: Hardener for coatings and adhesives

1.3 Details of supplier of the safety data sheet

Supplier: Adbruf Ltd
Gibbs Marsh Trading Estate
Stalbridge, Dorset, DT10 2RX
Tel: + 44 (0)1963 362640
Fax: + 44 (0)1963 363762
Email: sales@adbruf.com

Contact Person: David Fennell

1.4 Emergency telephone number

Please contact: +44 (0)1963 362640

SECTION 2: HAZARDS IDENTIFICATION

2.1 **Classification:** Regulation (EC) No 1272/2008

Inhalation: Acute toxicity, inhalative, Category 4 (H332)
Sensitization of the respiratory airways, Category 1 (H334)

Skin Contact: Skin irritation, Category 2 (H315)
Sensitization of the skin, Category 1 (H317)

Eye Contact: Eye irritation, Category 2 (H319)

Carcinogenicity, Category 2 (H351)
Specific target organ toxicity(single exposure), Category 3 (H335)
Specific target organ toxicity (repeated exposure), inhalative, Category 2 (H373)

2.2 Label elements:

Regulation (EC) No 1272/2008

Contains: diphenylmethane-disocyanate, isomers and homologues

Signal word: **DANGER**

Hazard statements:

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritiation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

Precautionary statements:

P260 Do not breathe vapours/ spray.
P280 Wear protective gloves/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Supplementary precautionary statements:
EUH204 Contains isocyanates. May produce an allergic reaction.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Preparation:
Components:

Concentration [wt.-%]: >= 75 - < 100
CAS-No.: 9016-87-9
Classification (1272/2008/CE): Acute Tox. 4 Inhalative H332 Skin Irrit. 2 H315
Eye Irrit. 2 H319 Sens. Resp. 1 H334 Skin Sens. 1 H317 Carc. 2 H351
STOT SE 3 H335 STOT RE 2 Inhalative H373 Specific threshold concentration (GHS):

Sens. Resp. 1	H334	>= 0.1 %
Eye Irrit. 2	H319	>= 5 %
Skin Irrit. 2	H315	>= 5 %
STOT SE 3	H335	>= 5 %

Classification(67/548/EEC): Carc. Cat.3 H351 Xn H332 - H373 Xi R319/335/315 H317

Xn	H334	0.1 - <1%
Xn	H351/334/317	1 - <5%
Xn	H319/335/315. H351, H334/317	5 - <10%
Xn	H319/335/315, H351, R334/317, H373	10 - <25%
Xn	H332, H319/335/315, H351, H334/317, H373	>=25%

Composition Components: diphenylmethane-diisocyanate, isomers and homologues
CAS No. 9016-87-9 >75-<100%
diphenylmethane-4,4'-diisocyanate
CAS No. 101-68-8 <10 - >20%

diphenylmethane-2,4'-diisocyanate
CAS No. 5873-54-1 >5 - < 10%
2,2'-Methylenediphenyl diisocyanate
CAS No. 2536-05-2 <1 - >5%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

General information:
Consult a physician for specific advice

General advice:
Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.

If inhaled:
Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.

In case of skin contact:
In the event of contact with the skin, preferably wash with a cleanser based on polyethylene glycol or with plenty of warm water and soap. Consult a doctor in the event of a skin reaction.

In case of eye contact:
Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.

If swallowed:
DO NOT induce the patient to vomit, medical advice is required.

Most important symptoms and effects, both acute and delayed

Notes to physician:

The product irritates the respiratory tract and may trigger sensitisation of the skin and respiratory tract. Treatment of acute irritation or bronchial constriction is primarily symptomatic. Extended medical treatment may be required depending on the degree of exposure and the severity of the symptoms.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media:

Extinguishing media:
Carbon dioxide (CO2), Foam, extinguishing powder, in cases of larger fires water spray should be used.

Unsuitable extinguishing media:
High volume water jet.

5.2 Special hazards:
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. Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.

5.3 Advice for fire fighters:
During fire-fighting respirator with independent air-supply and airtight garment is required.
Do not allow contaminated extinguishing water to enter the soil, ground- water or surface waters.

SECTION 6: PERSONAL PROTECTIVE EQUIPMENT

6.1 Personal precautions, protective equipment & emergency procedures:
Put on protective equipment (see section 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

6.2 Environment related measures:
Do not allow to escape into waterways, wastewater or soil.

6.3 Methods and material for containment & cleaning up:
Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO2!). Keep damp in a safe ventilated area for several days. Spill area can be decontaminated with the following recommended decontamination solution:

Decontamination solution 1: 8-10% sodium carbonate and 2% of liquid soap in water Decontamination solution 2: Liquid/yellow soap (potassium soap with ~15% anionic tenside): 20ml; water:700ml; Polyethylenglycol (PEG 400): 350ml

6.4 Reference to other sections:
For further disposal measures see section 13.

SECTION 7 HANDLING & STORAGE

7.1 Precautions for safe handling:
Provide sufficient air exchange and/or exhaust in work rooms. Exhaust ventilation necessary if product is sprayed. The threshold limit values noted in Chapter 8 must be monitored.

In all areas where isocyanate aerosols and/or vapor concentrations are produced, in elevated concentrations, exhaust ventilation must be provided in such a way that the workplace exposure limits (WEL) is not exceeded. The air should be drawn away from the personnel handling the product

The personal protective measures described in Chapter 8 must be observed. The precautions required in the handling of isocyanates must be taken. Avoid contact with skin and eyes and the inhalation of vapor.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Take off all contaminated clothing immediately.

7.2 Conditions for sale, storage - iIncluding any incompatibilities:
Keep container tightly closed and dry. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.

Storage class (TRGS 510): 10: Combustible liquids

*SE*CTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 UK Workplace Exposure Limits (WEL), per EH40 document (Health & Safety Executive). If no UK value exists, EU exposure limits given where available.

Control parameters: EH40 WEL TWA 0.02 mg/m³ STEL 0.07 mg/m³ measured as NCO

Value type	Route of exposure	Health Effects	Value	Remarks
Worker (short-term)				
DNEL	Dermal	- systemic effects	50 mg/kg body weight/day	
DNEL	Inhalation	- systemic effects	0.1 mg/m³ air	
DNEL	Dermal	- local effects	28.7 mg/cm²	
DNEL	Inhalation	- local effects	0.1 mg/m³ air	
Worker (long-term)				
DNEL	Dermal	- systemic effects		No quantitative risk assessment possible.
DNEL	Inhalation	- systemic effects	0.05 mg/m³ air	
DNEL	Dermal	- local effects		No quantitative risk assessment possible.
DNEL	Inhalation	- local effects	0.05 mg/m³ air	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	liquid	
Colour:	brown	
Odour:	earthy, musty	
Odour Threshold:	not established	
pH:	not applicable	
Pour point:	ca. -30 °C	ISO 3016
Boiling point/boiling	> 300 °C at 1,013 hPa	DIN 53171
Flash point:	ca. 229 °C	DIN EN 22719
Evaporation rate:	not established	
Flammability (solid, gas):	not applicable	
Burning number:	not applicable	
Vapour pressure:	ca. 11 hPa at 20 °C	EG A4
	ca. 20 hPa at 50 °C	EG A4
	ca. 22 hPa at 55 °C	EG A4
	Diphenyl-methane-diisocyanate (MDI) < 0,00001 hPa at 20 °C	
Miscibility with water:	immiscible at 15°C	
Surface tension:	not established	
Partition coefficient (n-octanol/water):	not established	
Auto-ignition temperature:	not applicable	
Ignition temperature:	>500°C	DIN 51794
Decomposition temperature:	not established	
Viscosity, dynamic	ca. 145 mPa.s at 20°C	DIN 53019
Explosive properties:	not established	
Dust explosion class:	not applicable	
Oxidising properties:	not established	
Other information:	Please refer to the technical information sheet for specification data.	

SECTION 10: STABILITY & REACTIVITY

10.1 Chemical stability: Polymerises at about 200°C with evolution of CO2.

10.2 Possibility of hazardous reactions: Exothermic reaction with amines and alcohols; reacts with water forming CO2; in closed containers, risk of bursting owing to increase of pressure.

10.3 Hazardous decomposition products: No hazardous decomposition products when stored and handled correctly.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Ingestion:	Acute toxicity, oral:LD50 rat, male/female: > 2,000 mg/kg Method: Directive 84/449/EEC, B.1Toxicological studies of a comparable product.
Skin contact:	Acute toxicity, dermal: Acute toxicity, dermal:, LD50 rabbit, male/female: > 9,400 mg/kg Method: OECD Test Guideline 402
Inhalation:	Acute toxicity, inhalation: LC50 rat, male/female: 0.31 mg/l, 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 The substance was tested in a form (i.e. specific particle size distribution) that is different from the forms in which the substance is placed on the market and in which it can reasonably be expected to be used. Therefore, a modified classification for acute inhalation toxicity is justified. Assessment: Harmful by inhalation. Converted acute toxicity point estimate 1.5 mg/l Test atmosphere: dust/mist Method: Expert judgement
Primary skin irritation:	Species: rabbit Result: irritating Classification: Causes skin irritation. Method: OECD Test Guideline 404 Toxicological studies of a comparable product
Primary mucosae irritation:	Species: rabbit Result: non-irritant Method: OECD Test Guideline 405 Toxicological studies of a comparable product.
Sensitisation:	Skin sensitization (local lymph node assay (LLNA)): Species: mouse Result: positive Classification: May cause sensitization by skin contact. Method: OECD Test Guideline 429 Toxicological studies of a comparable product.
Respiratory sensitization	Species: rat Result: positive Classification: May cause sensitization by inhalation.
Respiratory sensitization	Species: guinea pig

Result: positive
Classification: May cause sensitization by inhalation.
Toxicological studies of a comparable product.

Subacute, subchronic and prolonged toxicity:NOAEL: 0,2 mg/m3

LOAEL (Lowest observable adverse effect level): 1 mg/m3
Application Route: Inhalative
Species: rat, male/female
Dose Levels: 0 - 0,2 - 1 - 6 mg/m3
Exposure duration: 2 a
Frequency of treatment: 6 hours a day, 5 days a week
Target Organs: Lungs, Nasal inner lining
Test substance: as aerosol
Method: OECD Test Guideline 453
Findings: Irritation to nasal cavity and to lungs.
Studies of a comparable product.

Carcinogenicity:

Species: rat, Male /female
Application Route: Inhalative
Dose Levels: 0 - 0,2 - 1 - 6 mg/m3
Test substance: as aerosol
Exposure duration: 2 a
Frequency of treatment: 6 hours/day, 5 days/week
Method: OECD Test Guideline 453
Occurrence of tumors in the highest dose group.

Reproductive toxicity/Fertility:

No data available.

Reproductive toxicity/Teratogenicity:

NOAEL (teratogenicity): 12 mg/m³
NOAEL (maternal): 4 mg/m³
NOAEL (developmental toxicity): 4 mg/m³
Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 1 - 4 - 12 mg/m3
Frequency of treatment: 6 hours/day (Exposure duration: 10 days (day 6 - 15p.c.))
Test period: 20 d
Test substance: as aerosol

Method: OECD Test Guideline 414
NOAEL (developmental toxicity): 4 mg/m3
Did not show teratogenic effects in animal experiments.
Studies of a comparable product.

Genotoxicity in vitro:	Test type: Salmonella/microsome test (Ames test) Test system: Salmonella typhimurium Metabolic activation: with/without Result: negative Method: OECD Test Guideline 471 Toxicological studies of a comparable product.
Genotoxicity in vivo:	Test type: Micronucleus test Species: rat, male Application Route: Inhalative (exposure period: 3x1h/day over 3 weeks) Result: negative Method: OECD Test Guideline 474 Toxicological studies of a comparable product.
STOT evaluation – one-time exposure:	Route of exposure: Inhalative Target Organs: Respiratory Tract May cause respiratory irritation.
STOT evaluation – repeated exposure:	Route of exposure: Initiative Target Organs: Respiratory Tract May cause damage to organs through prolonged or repeated exposure
Aspiration toxicity:	Based on available data, the classification criteria are not met
CMR Assessment:	Carcinogenicity: Suspected of causing cancer by inhalation (Carc. 2). Mutagenicity: In vitro an in vivo tests did not show mutagenic effects. Based on available data, the classification criteria are not met. Teratogenicity: Did not show teratogenic effects in animal experiments. Based on available data, the classification criteria are not met. Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.
Toxicology Assessment:	Acute effects: Harmful if inhaled. The product causes irritation of eyes, skin and mucous membranes. Sensitization: May cause sensitization by inhalation and skin contact
Additional information:	Special properties/effects: Over-exposure entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects.

SECTION 12: ECOLOGICAL INFORMATION

Do not allow to escape into waterways, wastewater or soil.

Please find below the ecotoxicological data available to us for the components

12.1 Toxicity:

Accute fish toxicity:	LC50 > 1,000 mg/l Test type: Acute Fish toxicity Species: Danio rerio (zebra fish) Exposure duration: 96 h
Method: OECD Test Guideline 203	Studies of a comparable product.
	EC50 > 1,000 mg/l Species: Daphnia magna (Water flea) Exposure duration: 24 h Method: OECD Test Guideline 202 Studies of a comparable product.
Chronic toxicity to daphnia:	NOEC (Reproduction) > 10 mg/l Species: Daphnia magna (Water flea) Exposure duration: 21 d Method: OECD Test Guideline 202 Studies of a comparable product
Acute toxicity for algae:	ErC50 > 1,640 mg/l Test type: Growth inhibition Species: scenedesmus subspicatus Exposure duration: 72 h Method: OECD Test Guideline 201 Studies of a comparable product
Acute bacterial toxicity:	EC50 > 100 mg/l Test type: Respiration inhibition Species: activated sludge Exposure duration: 3 h Method: OECD Test Guideline 209 Studies of a comparable product
Toxicity to soil dwelling organisms:	NOEC (mortality) > 1,000 mg/kg Species: Eisenia fetida (earthworms) Exposure duration: 14 d Method: OECD Test Guideline 207 Studies of a comparable product.
Toxicity to terrestrial plants:	NOEC (seedling emergence) > 1,000 mgkg Species: Avena Sativa (oats) Exposure duration: 14 d Method: OECD Test Guideline 208

NOEC (Growth rate) > 1,000 mg/kg

Species: Avena sativa (oats)
Exposure duration: 14 d
Method: OECD Test Guideline 208

NOEC (seedling emergence) > 1,000 mg/kg
Species: Lactuca sativa (lettuce)
Exposure duration: 14 d
Method: OECD Test Guideline 208

NOEC (Growth rate) > 1,000 mg/kg
Species: Lactuca sativa (lettuce) Exposure duration: 14 d
Method: OECD Test Guideline 208

12.2 Ecotoxicology Assessment:

Aute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: There is no evidence of a chronic aquatic toxicity.
Toxicity Data on Soil: Not expected to adsorb on soil. The substance is graded as non-critical to soil-dwelling organisms.

Impact on Sewage Treatment:

Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

12.3 Persistence and degradability:

Biodegradability

Test type: aerobic
Inokulum: activated sludge
Biodegradation: 0 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C
According to the results of tests of biodegradability this product is not readily biodegradable.

Stability in water:

Test type: Hydrolysis
Half life: 20 h at 25 °C
The substance hydrolyzes rapidly in water.
Studies of a comparable product.

Photodegradation:

Temperature: 25 °C
Studies of a comparable product.
Test type: Phototransformation in air
Sensitizer: OH-radicals
Concentration sensibilisator: 500,000 1/cm3
Rate constant: 1.16E-11 cm3/
Half-life indirect photolysis: 0.92 d
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be moderately degraded by photochemical processes.

Volatility (Henry's Law constant):

Calculated value = 0.0229 Pa*m3/mol

The substance has to be scored as being slightly volatile from water

12.4 Biaccumulative potential:

Bioaccumulation: Bioconcentration factor (BCF): 200
Species: Cyprinus carpio (Carp) Exposure duration: 28 d
Concentration: 0.00008 mg/l
Test substance: 14C-labelled
Method: OECD Test Guideline 305 E
An accumulation in aquatic organisms is not to be expected.
Studies of a comparable product.

12.5 Mobility in soil

Distribution among environmental compartments:

Environmental distribution:

no data available

Results of PBT and vPvB assessment

diphenylmethane-diisocyanate, isomers and homologues. This substance does not meet the criteria for classification as PBT or vPvB.

Additional information on ecotoxicology:

Isocyanate reacts with water at the interface forming CO2 and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods After final product withdrawal, all residues must be removed from containers (drip-free, powder-free or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. These containers can be returned for recycling to the appropriate centres set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations
None disposal into waste water.

SECTION 14: TRANSPORT INFORMATION

14.1 ADR/RID: Not dangerous goods

14.2 ADN:	Not dangerous goods This classification data does not apply to transportation by tanker. If required, additional information can be requested from the manufacturer.
14.3 IATA:	Not dangerous goods
14.4 IMDG:	Not dangerous goods Special precautions for user: Not dangerous cargo Keep dry. Avoid heat above +50 °C. Avoid temperatures below +10 °C. Keep away from foodstuffs, acids and alkalis.

SECTION 15: REGULATION INFORMATION

15.1 Safety, health and environmental regulations

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

Water contaminating class (Germany):
1 slightly water endangering (in accordance with Annex 4 to the Directive on Water-Hazardous Substances) Any existing national regulations on the handling of isocyanates must be observed

SECTION 16: CLP CLASSIFICATIONS

16.1 Full text of hazardous (H) warnings referred to under sections 2 and 3 of the CLP classification (1272/2008/CE).

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

Classification in line with CLP