



SDS according to Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex II-EU

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

Date issued 01.07.2014

### 1.1. Product identifier

Product name Hardener

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

Use of the substance/preparation Hardener for waterborne floor finishes.

### 1.3. Details of the supplier of the safety data sheet

#### Manufacturer

Company name Arboritec AB  
 Postal address Olof Wijksväg 9  
 Postcode SE-444 65  
 City Jörlanda  
 Country Sverige  
 Tel 0303-563 30  
 Fax 0303-563 32  
 E-mail post@arboritec.com  
 Website http://www.arboritec.com  
 Contact person Jörgen Kaldemark

### 1.4. Emergency telephone number

Emergency telephone In case of medical emergency call:112

## SECTION 2: Hazards identification

### 2.1. Classification of substance or mixture

Classification according to 67/548/EEC or 1999/45/EC R43,R52/53

### 2.2. Label elements

#### Hazard Pictograms (CLP)



Composition on the label Aliphatic polyisocyanat:60 - 70 , Dipropylene glycol Dimethyl ether:30 - 40 %  
 Signal word Warning  
 Hazard statements H317 May cause an allergic skin reaction. H412 Harmful to aquatic life with long lasting effects.  
 Precautionary statements P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P363 Wash contaminated clothing before reuse.  
 P501 Innehållet/behållaren lämnas till godkänd mottagare av farligt avfall.

### 2.3. Other hazards

Other hazards When spray applying see section 8.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

Substance	Identification	Classification	Contents
Aliphatic polyisocyanat	CAS no.: 160994-68-3	Xn; R20 Xi; R37 R43 R52/53 Acute tox. 4;H332; Skin Sens. 1;H317; STOT SE3;H335; Aquatic Chronic 3;H412;	60 - 70
Dipropylene glycol Dimethyl ether	CAS no.: 111109-77-4 EC no.: 404-640-5		30 - 40 %

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

General	Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.
Inhalation	Use with adequate ventilation.
Skin contact	Remove/Take off immediately all contaminated clothing. IF ON SKIN: Wash with plenty of soap and water. Do NOT use solvents or thinners.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

General symptoms and effects No specific symptoms exist.

### 4.3. Indication of any immediate medical attention and special treatment needed

Medical treatment No specific treatment necessary.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media Recommended extinguishing media : alcohol resistant foam, CO<sub>2</sub>, powders, water spray. Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards Fire will produce dense black smoke. Decomposition products can be hazardous. At high temperatures create: Carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), smoke, nitrogen gases (NO<sub>x</sub>).

### 5.3. Advice for firefighters

Personal protective equipment	Wear respiratory protection.
Other Information	Eliminate all ignition sources if safe to do so. Do not allow run-off from fire fighting to enter drains or water courses.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	Refer to protective measures listed in sections 7 and 8.
Personal protection measures	In case of inadequate ventilation wear respiratory protection. Wear fire / flame resistant / retardant clothing. Use personal protective equipment as required. Wear cold insulating gloves / face shield / eye protection. Wear protective gloves / protective clothing / eye protection / face protection. Avoid breathing dust / fume / gas / mist / vapours / spray. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

## 6.2. Environmental precautions

Environmental precautionary measures	Collect spillage. Avoid release to the environment. If the product contaminates lakes, rivers or sewers, inform appropriate authorities in accordance with local regulations.
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## 6.3. Methods and material for containment and cleaning up

Cleaning method	The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13).
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## 6.4. Reference to other sections

# SECTION 7: Handling and storage

## 7.1. Precautions for safe handling

Handling	Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Examination of lung function should be carried out on a regular basis on persons spraying this preparation. Vapours may form explosive mixtures with air. Avoid spilling, skin- and eye contact. Avoid breathing dust / fume / gas / mist / vapours / spray. Avoid breathing dust.
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## Protective Safety Measures

Protective Safety Measures	Remove contaminated clothing and protective gear before you get to an area where meals are taken.
Safety Measures To Prevent fire	Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits.  In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Preparation may charge electrostatically: always use earthing leads when transferring from one container to another.
Additional information	Never use pressure to empty : container is not a pressure vessel. For personal protection see Section 8.

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

Storage	Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Protect from sunlight. Store in a dry place. Comply with the health and safety at work laws. Store in accordance with applicable regulations for good chemical practice.
Conditions To Avoid	Keep away from heat / sparks / open flames / hot surfaces. — No smoking. Protect from sunlight. Prevent unauthorized access. Keep away from oxidizing

agents, from strongly alkaline and strongly acid materials. Use only non-sparking tools.

### Conditions for safe storage

Storage Temperature Value: 5-20 grader Celsius

### 7.3. Specific end use(s)

Recommendations Do not handle until all safety precautions have been read and understood.

### Specific end users

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational Exposure limit values

Substance	Identification	Value	TWA Year
Aliphatic polyisocyanat	CAS no.: 160994-68-3		
Dipropylene glycol Dimethyl ether	CAS no.: 111109-77-4 EC no.: 404-640-5	8-hour TWA: 20 ppm	

### 8.2. Exposure controls

#### Precautionary measures to prevent exposure

Appropriate engineering controls Use with adequate ventilation. If possible this should be achieved by local extraction and good exhaust ventilation. If these are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory equipment.

#### Respiratory protection

Respiratory protection Respiratory protection with gas filter (brown A) must be used if air concentration exceeds acceptable level (OEL).

Mask type When spraying, use half-or full face mask with filter P2 (IIB) to spray.

#### Hand protection

Hand protection Wear cold insulating gloves / face shield / eye protection.

Skin-/ hand protection, long term contact For prolonged or repeated contact use gloves made of butyl rubber.

Suitable materials Barrier creams may help to protect the skin, but they should however not be used once exposure has occurred.

#### Eye / face protection

Suitable Eye Protection Wear cold insulating gloves / face shield / eye protection.

#### Skin protection

Skin protection (except hands) Wear fire / flame resistant / retardant clothing.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Odour	Faint.
Comments, Odour limit	Not applicable.
Comments, pH (as supplied)	Not determined.
Comments, pH (aqueous solution)	Not determined.
Comments, Melting point / melting range	Not determined.
Comments, Boiling point / boiling range	Not determined.
Flash point	Value: 97 °C
Comments, Evaporation rate	Not determined.
Flammability (solid, gas)	Not determined
Comments, Vapour pressure	Not determined.

Comments, Vapour density	Not determined.
Specific gravity	Value: 1,1 g/ml Method of testing: ASTM 6450 Test temperature: 23 °C
Solubility in water	unlimited.
Comments, Partition coefficient: n-octanol / water	Not applicable.
Comments, Decomposition temperature	Not determined
Comments, Viscosity	Not determined. Does not affect the assessment.
Explosive properties	Not explosive.
Oxidising properties	Not Oxidising.

## 9.2. Other information

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Reactivity	No reactive.
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#### 10.2. Chemical stability

Stability	Stable under recommended storage and handling conditions (see section 7).
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#### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No dangerous if handled according to Technical Information.
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#### 10.4. Conditions to avoid

Conditions to avoid	No applicable.
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#### 10.5. Incompatible materials

Materials to avoid	Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reaction.
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#### 10.6. Hazardous decomposition products

Hazardous decomposition products	When exposed to high temperature may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, oxides of nitrogen.
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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

##### Toxicological data for substances

Substance	Aliphatic polyisocyanat
LD50 oral	Value: > 2000 mg/kg Animal test species: Rat Comments: Studies of comparable product.
LC50 inhalation	Value: > 0,39 mg/l Animal test species: Rat, female Duration: 4 h Test reference: Dust/mist Comments: Converted point estimate for acute toxicity of 1.5 mg / l. Studies of comparable product.
Other toxicological information for the substance	Harmful by inhalation.
Skin corrosion / irritation, other information	No skin irritation.
CMR effects	Carcinogenicity: Inte mutagen i Ames Test.
STOT-single exposure	May cause irritation respiratory tracts.
Eye damage or irritation other info	No eye irritation.
Respiratory sensitisation other info	No lungsensitization in animal studies.

Skin sensitisation, other info	H317: May cause an allergic skin reaction.
Comments	Special properties / effects: If over exposure especially when spraying with isocyanate-containing paints without protective preparation, there is risk of a concentration-dependent irritating effects on the eyes, nose, throat and respiratory tract . Delayed occurrence of symptoms and the development of over-sensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons can be affected even at low concentration of isocyanate, also below exposure limits. Prolonged or repeated contact can cause tanning and skin irritation. Animal tests and other research indicate that skin contact with diisocyanates can play a role in isocyanatesensibilising and respiratory reactions.
Substance	Dipropylene glycol Dimethyl ether
LD50 oral	Value: 3 300 mg/kg Animal test species: Rat
LD50 dermal	Value: > 2 000 mg/kg Animal test species: rat
LC50 inhalation	Value: > 5,25 mg/l Animal test species: Råtta Duration: 4h

### Other information regarding health hazards

General	There is no data available on the preparation itself. The preparation has been assessed and classified according to EU regulations.
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### Potential acute effects

Inhalation	Based on the properties of the isocyanate components and considering toxicological data on similar substances, this product may cause acute irritation and / or sensitization of the respiratory tract, leading to an asthmatic condition, wheezing and tightness in the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure can cause permanent damage to the respiratory tract.
Skin contact	May cause an allergic skin reaction.
Eye contact	May cause irritation in eyes.
Skin corrosion / irritation, other information	No information available.
Aspiration hazard, comments	When applying see section 8.
Eye damage or irritation other info	If splashed in the eyes, the liquid may cause irritation and reversible damage.

### Delayed effects / repeated exposure

General respiratory or skin sensitisation	Prolonged or repeated contact may defat the skin, resulting in non-allergic contact eczema and absorption through the skin.
STOT-single exposure	No information available.
STOT-repeated exposure	No information available.

### Carcinogenic, Mutagenic or Reprotoxic

Carcinogenicity human experience	No information is available.
Germ Cell Mutagenicity, human experience	No information available.
Reproductive toxicity	No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecotoxicity	Not ecotoxic.
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### Toxicological data for substances

Substance	Aliphatic polyisocyanat
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Acute aquatic, fish	Value: 28,3 mg/l Method of testing: LC50 Species: Danio rerio Duration: 96 h Test reference: OECD:s guidelines for test 203
Acute aquatic, algae	Value: > 100 mg/l Method of testing: ErC50 Species: Scenedesmus subspicatus Duration: 72 h Test reference: OECD TG 201
Acute aquatic, Daphnia	Value: > 100 mg/l Method of testing: EC50 Species: Daphnia magna Duration: 48 h Test reference: OECD TG 202
Biodegradability	Value: 2 % Test period: 28 days Method of testing: OECD TG 301 F Comments: Not easily degradable.
Other negative effects	Isocyanate reacts with the water on the surface and form CO <sub>2</sub> and a solid, water-insoluble product with high melting point (polyurea). This reaction is strongly accelerated by surfactants (eg, liquid soaps) or water-soluble solvents. Polycarbamide is, according to the experience, inert and non-degradable.
Substance	Dipropylene glycol Dimethyl ether
Acute aquatic, fish	Value: > 1000 mg/l Method of testing: LC50 Species: Poecilia reticulata (Guppy) Duration: 96h
Acute aquatic, Daphnia	Value: > 1000 mg/l Method of testing: LC50 Species: Daphnia magna Duration: 24h Test reference: immobilisering
Bioconcentration factor (BCF)	Value: 4 Comments: Bioconcentration potential is low. Log Pow <3

## 12.2. Persistence and degradability

Persistence and degradability Not determined.

## 12.3. Bioaccumulative potential

Bioaccumulation evaluation Not determined.

## 12.4. Mobility in soil

Mobility Not determined.

## 12.5. Results of PBT and vPvB assessment

PBT assessment results Not classified as PBT / vPvB of current EU criteria.

## 12.6. Other adverse effects

Other adverse effects / Remarks None known.

# SECTION 13: Disposal considerations

## 13.1. Waste treatment methods

Specify the appropriate methods of disposal	Collect spillage. Avoid release to the environment. Wastes and empty containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.
Product classified as hazardous	Yes

waste	
EWC waste code	EWC: 08 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS, National waste code: 01, National wastegroup: 11

## SECTION 14: Transport information

### 14.1. UN number

Comments	Not dangerous goods. Transport in accordance with national law and ADR for road, RID for rail, IMDG for sea and ICAO / IATA for air. For complete information on transport, see transport document.
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### 14.2. UN proper shipping name

### 14.3. Transport hazard class(es)

### 14.4. Packing group

### 14.5. Environmental hazards

IMDG Marine pollutant	No
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### 14.6. Special precautions for user

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

## SECTION 15: Regulatory information

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

Legislation and regulations	Classification and labeling of substances under Directive 67/548/EC, 1999/45/EC, see section 3.  Classification and labeling of substances according to Regulation (EC) 1272/2008 (CLP) is in section 3. The labeling of the product according to EC directives 67/548/EEC, 1999/45/EC, see section 2.  Safety data sheet is designed according to EU Commission Regulation No. 1907/2006.
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### 15.2. Chemical safety assessment

Chemical safety assessment performed	No
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## SECTION 16: Other information

### Hazard symbol



R-phrases	R43 May cause sensitization by skin contact. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases	S24/25 Avoid contact with skin and eyes. S37 Wear suitable gloves.
List of relevant R-phrases (under headings 2 and 3).	R37 Irritating to respiratory system. R43 May cause sensitization by skin contact.



	R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R20 Harmful by inhalation.
List of relevant H-phrases (Section 2 and 3).	H412 Harmful to aquatic life with long lasting effects. H335 May cause respiratory irritation. H332 Harmful if inhaled. H317 May cause an allergic skin reaction.
Version	1
Responsible for safety data sheet	Arboritec AB
Comments	The information of this SDS is based on the present state of our knowledge and on current EU and national laws. The product is not to be used for other purposes than those specified under section 1 without first obtaining written handling instruction. It is always the responsibility of the user to take all necessary steps in order to fulfill the demand laid down in the local rules and legislation. The information in this SDS is meant as a description of the safety requirements of our product : it is not to be considered as a guarantee of the products' properties.