

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 04.06.2019

Revision: 03.06.2019

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

- **1.1 Product identifier**
- **Trade name:** HADALAN BM 2K 12P, Komp. B
- **Article number:** 50429 A
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Solvent-free, 2-component PU binder, comp. A
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Heinrich Hahne GmbH & Co. KG  
Heinrich-Hahne-Weg 11  
D-45711 Datteln  
Tel.: +49 2363 5663-0
- **Further information obtainable from:**  
Abteilung: Produktsicherheit  
Tel.: 02363 5663-0  
EMail: info@hahne-bautenschutz.de
- **1.4 Emergency telephone number:**  
Giftnormationszentrum Nord (GIZ Nord) Universität Göttingen,  
Tel.: 0551-19240

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



Acute Tox. 4 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**
- **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



- **Signal word** Warning
- **Hazard-determining components of labelling:**  
Poly (hexamethylene diisocyanate)  
Poly (Isophorone diisocyanate)  
Hexamethylene diisocyanate
- **Hazard statements**  
H332 Harmful if inhaled.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.

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- **Precautionary statements**

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P302+P352 IF ON SKIN: Wash with plenty of water.  
 P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**

- **Description:** Preparation based on aliphatic polyisocyanates

- **Dangerous components:**

Poly (hexamethylene diisocyanate) ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-100%
Poly (Isophorone diisocyanate) ⚠ Skin Sens. 1, H317; STOT SE 3, H335	10-25%
Hexamethylene diisocyanate ⚠ Acute Tox. 3, H311; Acute Tox. 1, H330; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.25%
Isophorone diisocyanate ⚠ Acute Tox. 3, H331; ⚠ Resp. Sens. 1, H334; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.1%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.

- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

- **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media** Use fire extinguishing methods suitable to surrounding conditions

- **Suitable extinguishing agents:** Foam, carbon dioxide, dry chemical, water mist, spray

- **For safety reasons unsuitable extinguishing agents:** Water jet

- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

- **5.3 Advice for firefighters** In case of fire: breathing protection with independent air supply

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### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Keep away non-protected persons. Ensure adequate ventilation.
- **6.2 Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Ensure adequate ventilation at the workplace.  
Avoid contact with the skin and eyes.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Keep cool and dry.
- **Information about storage in one common storage facility:** Store separate from eatables.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

<b>Hexamethylene diisocyanate (&lt;2.5%)</b>	
WEL	Short-term value: 0.07 mg/m <sup>3</sup> Long-term value: 0.02 mg/m <sup>3</sup> Sen; as -NCO
<b>Isophorone diisocyanate (&lt;0.1%)</b>	
WEL	Short-term value: 0.07 mg/m <sup>3</sup> Long-term value: 0.02 mg/m <sup>3</sup> Sen; as -NCO

- **Ingredients with biological limit values:**

<b>Hexamethylene diisocyanate (&lt;2.5%)</b>	
BMGV	1 µmol creatinine/mol Medium: urine Sampling time: At the end of the period of exposure Parameter: isocyanate-derived diamine

- **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**

- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.

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· **Protection of hands:**· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling

### SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form:	Fluid
Colour:	Colourless
Odour:	Weak, characteristic

· **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	>200 °C

· **Flash point:** 177 °C· **Ignition temperature:** 430 °C· **Auto-ignition temperature:** Product is not selfigniting.· **Explosive properties:** Product does not present an explosion hazard.· **Vapour pressure:** Not determined.· **Density at 20 °C:** 1.14 g/cm<sup>3</sup>· **Solubility in / Miscibility with water:** Not miscible or difficult to mix.· **Viscosity:**

Dynamic:	Not determined.
Kinematic:	Not determined.

· **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.· **10.3 Possibility of hazardous reactions** No dangerous reactions known.· **10.4 Conditions to avoid** No further relevant information available.· **10.5 Incompatible materials:** No further relevant information available.

### SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**

Acute toxicity, oral:

Hexamethylene-1,6-diisocyanate homopolymer

LD50 rat:&gt; 5,000 mg / kg

Isophorone diisocyanate homopolymer

LD50 rat, male / female:&gt; 14,000 mg / kg

Toxicological tests on the product in solvent

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**Acute toxicity, inhalation:***Hexamethylene-1,6-diisocyanate homopolymer:*LC50 rat, male: 543 mg / m<sup>3</sup>, 4 h

Method: OECD Test Guideline 403

LC50 rat, female: 390 mg / m<sup>3</sup>, 4 h

Method: OECD Test Guideline 403

The fabric was tested in a mold (i.e., specific particle size distribution) other than shapes such as they are marketed and, in all likelihood, used differs. On the basis of the "split-entry"

Concept and the available particle size data during end use of the substance is one modified classification of acute inhalation toxicity justified.

*Isophorone diisocyanate homopolymer*

LC50 rat, male / female: &gt; 5 mg / l, 4 h

Test atmosphere: dust / mist

Method: OECD Test Guideline 403

**Subacute, subchronic and long-term toxicity:***Hexamethylene-1,6-diisocyanate homopolymer*

Route of administration: Subacute inhalation toxicity, rat

Method: OECD Test Guideline 412

Test concentrations - 4.3; 14.7 and 89.8 mg aerosol / m<sup>3</sup>

Exposure time - 3 weeks

(6 hours a day, 5 days a week)

4.3 mg / m<sup>3</sup> harmless tolerated concentration (NOEL),14.7 mg / m<sup>3</sup> lung weight increase,89.8 mg / m<sup>3</sup> inflammatory changes in the respiratory tract.

Evidence of other organ damage except the respiratory system did not arise.

**Genotoxicity in vitro:***Hexamethylene-1,6-diisocyanate homopolymer*

Test type: Salmonella / microsome test (Ames test)

Result: No evidence of a mutagenic effect.

Method: OECD Test Guideline 471

Test Type: Chromosome aberration test in vitro

Result: negative

Method: OECD Test Guideline 473

Test type: point mutation on mammalian cells (HPRT test)

Result: negative

Method: OECD Test Guideline 476

**More information:***Hexamethylene-1,6-diisocyanate homopolymer*

Special properties / effects: In case of overexposure - especially in spray processing of isocyanate - containing paints without protective measures - there is a risk of concentration-dependent irritant effect on the eyes, nose, throat and airways. delayed Onset of discomfort and development of hypersensitivity (difficulty in breathing, Cough, asthma) are possible. Reactions may already occur in hypersensitive individuals very low isocyanate concentrations are triggered, even below the MAK value. After prolonged contact with the skin, tanning and irritation effects are possible. Animal experiments and other studies indicate that skin contact with Diisocyanates in isocyanate sensitization and respiratory reactions could play a role.

**· Acute toxicity**

Harmful if inhaled.

**· Primary irritant effect:****· Skin corrosion/irritation** Based on available data, the classification criteria are not met.**· Serious eye damage/irritation** Based on available data, the classification criteria are not met.**· Respiratory or skin sensitisation**

May cause an allergic skin reaction.

**· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****· Germ cell mutagenicity** Based on available data, the classification criteria are not met.**· Carcinogenicity** Based on available data, the classification criteria are not met.**· Reproductive toxicity** Based on available data, the classification criteria are not met.**· STOT-single exposure**

May cause respiratory irritation.

**· STOT-repeated exposure** Based on available data, the classification criteria are not met.

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· **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### · 12.1 Toxicity

Acute fish toxicity:

Hexamethylene-1,6-diisocyanate homopolymer

LC50 > 100 mg / l

Species: *Danio rerio* (zebrafish)

Exposure duration: 96 h

Method: OECD Test Guideline 203

Sample preparation due to the reactivity of the substance with water:

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Isophorone diisocyanate homopolymer

LC50 > 1.51 mg / l

Species: *Cyprinus carpio* (carp)

Exposure duration: 96 h

Method: Directive 67/548 / EEC, Annex V, C.1.

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

No toxic effects with saturated solution.

Ecotoxicological investigations on the product

Acute daphnia toxicity:

Hexamethylene-1,6-diisocyanate homopolymer

EC50 > 100 mg / l

Species: *Daphnia magna* (Great Water flea)

Exposure duration: 48 h

Method: OECD Test Guideline 202

Sample preparation due to the reactivity of the substance with water:

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Isophorone diisocyanate homopolymer

EC50 > 3.36 mg / l

Species: *Daphnia magna* (Great Water flea)

Exposure duration: 48 h

Method: OECD Test Guideline 202

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

No toxic effects with saturated solution.

Ecotoxicological tests on the product in solvents

Acute algae toxicity:

Hexamethylene-1,6-diisocyanate homopolymer

IC50 > 100 mg / l

Tested on: *Scenedesmus subspicatus* Test duration: 72 h

Method: OECD Test Guideline 201

Sample preparation due to the reactivity of the substance with water:

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

Isophorone diisocyanate homopolymer

ErC50 > 3.1 mg / l

Test Type: Growth Inhibition

Species: *Scenedesmus subspicatus*

Exposure duration: 72 h

Method: OECD Test Guideline 201

Ultra turrax: 60 sec. 8000 rpm; 24h magnetic stirrer; Filtration.

No toxic effects with saturated solution.

Ecotoxicological tests on the product in solvents

Acute bacterial toxicity:

Hexamethylene-1,6-diisocyanate homopolymer

EC50 > 1,000 mg / l

Tested on: activated sludge Test duration: 3 h

Method: OECD Test Guideline 209

Isophorone diisocyanate homopolymer

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EC50&gt; 10,000 mg / l

Test Type: Respiratory Inhibition

Species: activated sludge

Exposure duration: 3 h

Method: OECD Test Guideline 209

Ecotoxicological investigations on the product

· **Aquatic toxicity:** No further relevant information available.· **12.2 Persistence and degradability**

Hexamethylene diisocyanate, oligomerization product (uretdione type)

Test type: aerobic

Inoculum: activated sludge

Biodegradation: 1%, 21 d, i. not easily degradable

Method: Directive 67/548 / EEC, Annex V, C.4.E.

Test type: aerobic

Inoculum: activated sludge

Biodegradation: 18%, 28 d, i. not potentially degradable

Method: OECD Test Guideline 302 C

Hexamethylene-1,6-diisocyanate homopolymer

Test type: aerobic

Biodegradation: 2%, 28 d, i. not easily degradable

Method: Directive 67/548 / EEC, Annex V, C.4.E.

Ecotoxicological investigations on the product

Test type: aerobic

Biodegradation: 0%, 28 d, i. not potentially degradable

Method: OECD Test Guideline 302 C

Ecotoxicological investigations on the product

Isophorone diisocyanate homopolymer

Test type: aerobic

Inoculum: activated sludge

Biodegradation: 0%, 28 d, i. not easily degradable

Method: OECD Test Guideline 301 F

Ecotoxicological investigations on the product

· **12.3 Bioaccumulative potential**

Hexamethylene-1,6-diisocyanate homopolymer

Biodegradation: 0%, 28 d, i. not easily degradable

Method: OECD Test Guideline 301 C

Further information on ecotoxicology:

The resin settles with water at the interface to form carbon dioxide solid, high-melting and insoluble reaction product (polyurea). These Reaction is by surface-active substances (eg liquid soaps) or water-soluble Solvent strongly promoted. Polyurea is inert according to previous experience and not degradable.

· **12.4 Mobility in soil** No further relevant information available.· **Ecotoxicological effects:**· **Remark:** Harmful to fish· **Additional ecological information:**· **General notes:**

Harmful to aquatic organisms

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

· **12.5 Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **12.6 Other adverse effects** No further relevant information available.

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### SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**

08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
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· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, ADN, IMDG, IATA** Void

· **14.2 UN proper shipping name**

· **ADR, ADN, IMDG, IATA** Void

· **14.3 Transport hazard class(es)**

· **ADR, ADN, IMDG, IATA**  
· **Class** Void

· **14.4 Packing group**

· **ADR, IMDG, IATA** Void

· **14.5 Environmental hazards:** Not applicable.

· **14.6 Special precautions for user** Not applicable.

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

### SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	0.2

· **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

· **Other regulations, limitations and prohibitive regulations**

· **VOC (EU) 0.0 g/l**

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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**· Relevant phrases**

- H302 Harmful if swallowed.*
- H311 Toxic in contact with skin.*
- H315 Causes skin irritation.*
- H317 May cause an allergic skin reaction.*
- H319 Causes serious eye irritation.*
- H330 Fatal if inhaled.*
- H331 Toxic if inhaled.*
- H332 Harmful if inhaled.*
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
- H335 May cause respiratory irritation.*
- H411 Toxic to aquatic life with long lasting effects.*

**· Abbreviations and acronyms:**

- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*
- IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)*
- ICAO: International Civil Aviation Organisation*
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)*
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*
- IMDG: International Maritime Code for Dangerous Goods*
- IATA: International Air Transport Association*
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals*
- EINECS: European Inventory of Existing Commercial Chemical Substances*
- ELINCS: European List of Notified Chemical Substances*
- CAS: Chemical Abstracts Service (division of the American Chemical Society)*
- PBT: Persistent, Bioaccumulative and Toxic*
- SVHC: Substances of Very High Concern*
- vPvB: very Persistent and very Bioaccumulative*
- Acute Tox. 3: Acute toxicity – Category 3*
- Acute Tox. 1: Acute toxicity – Category 1*
- Acute Tox. 4: Acute toxicity – Category 4*
- Skin Irrit. 2: Skin corrosion/irritation – Category 2*
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2*
- Resp. Sens. 1: Respiratory sensitisation – Category 1*
- Skin Sens. 1: Skin sensitisation – Category 1*
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*
- Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2*

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