

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

- **Product identifier**
- **Trade name:** HADALAN LF68 12P
- **Article number:** 50222 A
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation**  
Single component, solvent-free polyurethane resin for interior and exterior use as a bonding agent for natural stone and decorative quartz coatings.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Heinrich Hahne GmbH & Co. KG  
Heinrich-Hahne-Weg 11  
45711 Datteln Tel.: 02363/5663-0
- **Further information obtainable from:**  
Abteilung: Produktsicherheit  
Tel.: 02363 5663-0  
EMail: info@hahne-bautenschutz.de
- **Emergency telephone number:**  
Giftinformationszentrum Nord (GIZ Nord) Universität Göttingen,  
Tel.: 0551-19240

## 2 Hazards identification

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



GHS07

Skin Sens. 1      H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Xi Irritant
- **Information concerning particular hazards for human and environment:**  
R 43 May cause sensitisation by skin contact.  
R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **Label elements**

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

- **Code letter and hazard designation of product:**



Xi Irritant

- **Hazard-determining components of labelling:** aliphatic polyisocyanate

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· **Risk phrases:**

- 43 May cause sensitisation by skin contact.  
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

- 24/25 Avoid contact with skin and eyes.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.  
36/37 Wear suitable protective clothing and gloves.  
46 If swallowed, seek medical advice immediately and show this container or label.

· **Other hazards**

· **Results of PBT and vPvB assessment**

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

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**  
· **Description:** Preparation based on aliphatic polyisocyanates

· **Dangerous components:**

CAS: 28182-81-2	Aliphatisches Polyisocyanat ☒ Xi R43 R52/53 ⚠ Skin Sens. 1, H317; Aquatic Chronic 3, H412	50-100%
CAS: 822-06-0 EINECS: 212-485-8	hexamethylene diisocyanate ☒ T R23; ☒ Xn R42/43; ☒ Xi R36/37/38 ☒ Acute Tox. 3, H331; ☒ Resp. Sens. 1, H334; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	< 0.5%

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

### 4 First aid measures

· **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.

· **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.  
· **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
Use fire extinguishing methods suitable to surrounding conditions.  
Foam, carbon dioxide, dry chemical, water fog, water spray jet.
- **For safety reasons unsuitable extinguishing agents:** water jet
- **Special hazards arising from the substance or mixture**  
In case of fire: formation of carbon monoxide, nitrogen oxides, isocyanate vapors and traces of hydrogen possible.
- **Advice for firefighters**
- **Protective equipment:**  
Do not breathe fumes.  
Wear self-contained breathing apparatus.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Keep unprotected persons away.  
Wear protective gloves, goggles and suitable protective clothing.
- **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.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **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.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Provide adequate ventilation in the workplace.  
Avoid contact with skin and eyes.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in unopened original container.
- **Information about storage in one common storage facility:** Store separate from eatables.
- **Further information about storage conditions:** Store in Cool, dry place Protect from frost.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

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

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· **Control parameters**

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

**822-06-0 hexamethylene diisocyanate (< 2.5%)**

WEL	Short-term value: 0.07 mg/m <sup>3</sup> Long-term value: 0.02 mg/m <sup>3</sup> Sen; as -NCO
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· **Additional information:** The lists valid during the making were used as basis.

· **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.

· **Respiratory protection:** Not required if good ventilation

· **Protection of hands:** Protective gloves

· **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.

Suitable protective gloves made from rubber, nitrile rubber, butyl rubber

· **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

· **Body protection:** Protective clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Fluid

**Colour:** colourless

· **Odour:** Characteristic

· **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** Undetermined.

· **Flash point:** 160°C

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20°C:** 1.14 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**water:** Not miscible or difficult to mix.

· **Viscosity:**

**Dynamic at 20°C:** 400 mPas

· **Other information** Reacts with water.

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### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**  
Exothermic reactions with amines and alcohols.  
Reacts with water -CO<sub>2</sub> development in containers, pressure build-up, risk of bursting.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

### 11 Toxicological information

- **Information on toxicological effects**  
Hexamethylene-1,6-diisocyanate homopolymer  
LD50 for rats is > 5,000 mg / kg  
Acute toxicity, by 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  
It was manufactured in a form (ie, special particle size distribution) tested which of the forms as they are marketed and used in all likelihood, is different. On the basis of the "split-entry" Concept and the available data on particle size during the end use of the substance, a modified classification of acute inhalation toxicity is warranted.  
Subacute, subchronic and prolonged 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 of aerosol / m<sup>3</sup>  
Exposure time - 3 weeks  
(6 hours per day, 5 days per week)  
4.3 mg / m<sup>3</sup> without compensation tolerated concentration (NOEL)  
14.7 mg / m<sup>3</sup> increase in lung weight,  
89.8 mg / m<sup>3</sup> inflammatory changes in the respiratory tract.  
References to other organ damage other than the respiratory organs were raised.  
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: in vitro chromosome aberration test  
Result: negative  
Method: OECD Test Guideline 473  
Test Type: point mutation in mammalian cells (HPRT test)  
Result: negative  
Method: OECD Test Guideline 476  
For more information:  
Hexamethylene-1,6-diisocyanate homopolymer  
Special properties / effects: Over-exposure - especially when spraying isocyanate paints without protection - there is a risk of concentration-dependent irritation of eyes, nose, throat and respiratory tract. Delayed appearance of symptoms and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. With hypersensitive people, reactions may be triggered at low isocyanate, also below the OEL.

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- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** slightly irritating
- **on the eye:** slightly irritating
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant

## 12 Ecological information

- **Toxicity**  
toxicity  
*Acute toxicity to fish:*  
Hexamethylene-1,6-diisocyanate homopolymer  
LC50> 100 mg / l  
Species: *Danio rerio* (zebrafish)  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Sample preparation because of the reactivity of the substance with water:  
Ultra turrax: 60 sec 8000 rpm, 24 magnetic stirrer; filtration.  
*Acute daphnia:*  
Hexamethylene-1,6-diisocyanate homopolymer  
EC50> 100 mg / l  
Species: *Daphnia magna* (water flea)  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Sample preparation because of the reactivity of the substance with water:  
Ultra turrax: 60 sec 8000 rpm, 24 magnetic stirrer; filtration.  
*Acute Toxicity to algae:*  
Hexamethylene-1,6-diisocyanate homopolymer  
IC50> 100 mg / l  
Tested on: *Scenedesmus subspicatus* Duration of test: 72 h  
Method: OECD Test Guideline 201  
Sample preparation because of the reactivity of the substance with water:  
Ultra turrax: 60 sec 8000 rpm, 24 magnetic stirrer; filtration.  
*Acute bacterial toxicity:*  
Hexamethylene-1,6-diisocyanate homopolymer  
EC50> 1,000 mg / l  
Tested on: Activated Sludge Test time: 3 hours  
Method: OECD Test Guideline 209
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential**  
Biodegradation: 0%, 28 d, i.e. not readily biodegradable  
Method: OECD Guideline 301 C  
Additional information on ecotoxicology:  
The resin reacts with water at the interface with the formation of carbon dioxide to form a solid, high-melting and insoluble product (polyurea). this Reaction is accelerated by surfactants (eg detergents) or water-soluble Solvent strongly encouraged. Polyurea is inert Previous experience and not degradable.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish

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- **Additional ecological information:**
- **General notes:** Harmful to aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **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 dangerous substances |
|-----------|---|
- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |  |  |                 |
|--|--|-----------------|
| · <b>UN-Number</b>   |  |                 |
| · <b>ADR, ADN, IMDG, IATA</b>  |  | Void            |
| · <b>UN proper shipping name</b>   |  |                 |
| · <b>ADR, ADN, IMDG, IATA</b>  |  | Void            |
| · <b>Transport hazard class(es)</b>  |  |                 |
| · <b>ADR, ADN, IMDG, IATA</b>  |  |                 |
| · <b>Class</b>   |  | Void            |
| · <b>Packing group</b>   |  |                 |
| · <b>ADR, IMDG, IATA</b>   |  | Void            |
| · <b>Special precautions for user</b>  |  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> |  | Not applicable. |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **National regulations:**
  - **Technical instructions (air):**
- | Class | Share in % |
|-------|------------|
| I     | 0.4        |
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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**

- H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H331 Toxic if inhaled.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation.  
 H412 Harmful to aquatic life with long lasting effects.
- R23 Toxic by inhalation.  
 R36/37/38 Irritating to eyes, respiratory system and skin.  
 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.

· **Recommended restriction of use**

From the European Committee of Paint, Printing Ink and Artists' Colours producers - CEPE - is given for isocyanate paints the following information: Ready paints containing isocyanates, may lead to irritation of the mucous membranes - particularly on the respiratory system - and exercise cause hypersensitivity reactions. Inhalation of vapor or spray mist may cause sensitization. When dealing with isocyanates all precautions required for solvent-containing paints must be followed carefully. In particular, spray mist or vapors are not inhaled. Allergies, asthma, and people who are prone to respiratory ailments should not work with paints containing isocyanates can not be used.

· **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 Organization  
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (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 Harmonized System of Classification and Labelling of Chemicals