



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

Printing date 15.08.2019


Version-No. 1

Revision: 12.08.2019

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

- **1.1. Product identifier**
- Trade name / Article-No: **KLEIBERIT 701.4**
- **1.2. Relevant identified uses of the substance / mixture or uses advised against**  
Restricted to professional users.
- **Application of the substance / the mixture** Adhesives
- **1.3. Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
KLEBCHEMIE  
M.G.Becker GmbH & Co. KG  
Max Becker Str. 4  
D - 76356 Weingarten / Baden  
Germany
- **Further information obtainable from:**  
phone: +49-7244-62-0  
FAX: +49-7244-700-0  
e-mail: hse@kleiberit.com
- **1.4. Emergency telephone number:**  
**+44 1235 239670**  
European regional number (European languages)  
**+44 1235 239671**  
Middle Eastern/African regional number (Middle Eastern/African languages)  
**+1 215 207 0061**  
Americas regional number (English, Spanish, Portuguese)  
**+65 3158 1412**  
Asia Pacific regional number (English, Bahasa, Malaysia, Hindi, Japanese, Korean, Mandarin, Tagalog)

### SECTION 2: Hazards identification

- **2.1. Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008 - GHS/CLP**  
Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Skin Sens. 1 H317 May cause an allergic skin reaction.  
Carc. 2 H351 Suspected of causing cancer.
- **2.2. Label elements**
- **Hazard pictograms**  
  
GHS08
- **Signal word** Danger
- **Hazard-determining components of labelling:**  
diphenylmethane-4,4'-diisocyanate
- **Hazard statements**  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H317 May cause an allergic skin reaction.  
H351 Suspected of causing cancer.
- **Precautionary statements**  
P261 Avoid breathing vapours.

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P280 Wear protective gloves.

P314 Get medical advice/attention if you feel unwell.

**Additional information:**

Contains isocyanates. May produce an allergic reaction.

**Information concerning particular hazards for human and environment:**

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- Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

- Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.

- This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

**2.3. Other hazards****Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

Registry-No's	Identification / Classification GHS-CLP	%
CAS: 101-68-8 Reg.nr.: 01-2119457014-47-XXXX	diphenylmethane-4,4'-diisocyanate Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	<2.5%
CAS: 3068-76-6	Phenylaminopropyltrimethoxysilan Acute Tox. 4, H302	<2%

· **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:**

After contact with the molten product, cool rapidly with cold water.

Treat affected skin with cotton wool or cellulose. Then wash and rinse thoroughly with water and a mild cleaning agent.

If skin irritation continues, consult a doctor.

· **After eye contact:** Rinse opened eye for several minutes under running water.

**Information for doctor:****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****Suitable extinguishing agents:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*(Contd. on page 3)*

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

In case of fire, the following can be released:

Nitrogen oxides (NO<sub>x</sub>)

Isocyanates

Traces: Hydrogen cyanide (HCN)

**5.3. Advice for firefighters**
**Protective equipment:** Wear self-contained respiratory protective device.

**SECTION 6: Accidental release measures**
**6.1. Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust/aerosol.

**6.2. Environmental precautions:** No special measures required.

**6.3. Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13.

**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**
**Handling:**
**7.1. Precautions for safe handling**

Appropriate regular employee training.

Handle the substance preferably in closed system

Enclosure or extractor facilities are required.

Ensure good ventilation. This can be achieved by using a local exhaustion or general exhaust system. If these measures are insufficient to keep the vapour concentration below the workplace limit, wear an adequate respiratory protective device.

Not less than 3-5 air exchanges per hour

Contact with skin and inhalation of aerosols/ vapours of the preparation should be avoided.

Spraying: in vented cabin with laminar air flow

Wear protective gloves/protective clothing/eye protection/face protection.

Use only in well ventilated areas.

Prevent formation of dust.

Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.

Avoid contact with skin and eyes.

Absorb spilled amount immediately.

It is advised against using the product if there is a sensitivity of the airways or skin (asthma, chronic bronchitis, chronic skin disease)

additional to professional application with multiple and/or significant contact

limit the exposure to 4 hours

**General protective and hygienic measures:** Immediately remove all soiled and contaminated clothing

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage:**
**Requirements to be met by storerooms and receptacles:** Keep container tightly closed.

**Information about storage in one common storage facility:** Observe the national regulations.

**Further information about storage conditions:** Protect from humidity and water.

**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.

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- **8.1. Control parameters**

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

- **DNELs**

**101-68-8 diphenylmethane-4,4'-diisocyanate**

Dermal DNEL short 50 mg/kg (human being)  
 Inhalative DNEL short 0.1 mg/m<sup>3</sup> (human being)  
 DNEL long term 0.05 mg/m<sup>3</sup> (human being)

- **PNECs**

**101-68-8 diphenylmethane-4,4'-diisocyanate**

PNEC- Freshwater 1 mg/l (x00)  
 PNEC-seawater 0.1 mg/l (x00)  
 PNEC-periodic release 10 mg/l (x00)  
 PNEC-soil 1 mg/kg (x00)  
 PNEC-wastewater treatment plant 1 mg/l (x00)

- **Ingredients with biological limit values:**

**101-68-8 diphenylmethane-4,4'-diisocyanate**

BGW (Germany) 10 µg/g Kreatinin  
 Untersuchungsmaterial: Urin  
 Probennahmezeitpunkt: Expositionsende bzw. Schichtende  
 Parameter: 4,4'-Diaminodiphenylmethan

BMGV (Great Britain) 1 µmol creatinine/mol  
 Medium: urine  
 Sampling time: At the end of the period of exposure  
 Parameter: isocyanate-derived diamine

- **CAS No. Designation of material % Type Value Unit**

**101-68-8 diphenylmethane-4,4'-diisocyanate**

AGW (Germany) Long-term value: 0.05 E mg/m<sup>3</sup>  
 1;=2=(I);DFG, 11, 12, H, Sah, Y

WEL (Great Britain) Short-term value: 0.07 mg/m<sup>3</sup>  
 Long-term value: 0.02 mg/m<sup>3</sup>  
 Sen; as -NCO

PEL (USA) Ceiling limit: 0.2 mg/m<sup>3</sup>, 0.02 ppm

REL (USA) Long-term value: 0.05 mg/m<sup>3</sup>, 0.005 ppm  
 Ceiling limit: 0.2\* mg/m<sup>3</sup>, 0.02\* ppm  
 \*10-min

TLV (USA) Long-term value: 0.051 mg/m<sup>3</sup>, 0.005 ppm

- **8.2. Exposure controls**

limit the exposure to:  
 8 hours  
 additional to professional application with multiple and/or significant contact  
 limit the exposure to 4 hours

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

- **Respiratory protection:**

Filter A/P2 (EN 14387)  
 Filter A (DIN EN 14 387)

- **Protection of hands:**

Heat resistant gloves

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- Protective gloves
- **Material of gloves**  
Leather gloves  
A Nitrile rubber - NBR: AlphaTec® (coating thickness not applicable)
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing

### SECTION 9: Physical and chemical properties

- **9.1. Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - **Form:** Solid
  - **Colour:** According to product specification
- **Odour:** Light
- **Odour threshold:** Not determined.
- **pH-value:** Not applicable.
- **Change in condition**
  - **Melting point/freezing point:** Undetermined.
  - **Initial boiling point and boiling range:** Undetermined.
- **Flash point:** Not applicable.
- **Flammability (solid, gas):** Not determined.
- **Ignition temperature:** >300 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product does not present an explosion hazard.
- **Explosion limits:**
  - **Lower:** Not determined.
  - **Upper:** Not determined.
- **Vapour pressure:** Not applicable.
- **Density at 20 °C:** ca. 1.1 g/cm<sup>3</sup>
- **Relative density** Not determined.
- **Vapour density** Not applicable.
- **Evaporation rate** Not applicable.
- **Solubility in / Miscibility with water:** Insoluble.
- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:** At room temperature: not applicable
- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.
- **9.2. Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1. Reactivity**  
see item 10.3  
No further relevant information available.
- **10.2. Chemical stability** Stable when stored and used properly.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3. Possibility of hazardous reactions** No dangerous reactions known.
- **10.4. Conditions to avoid** No further relevant information available.

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- **10.5. Incompatible materials:** No further relevant information available.
- **10.6. Hazardous decomposition products:** No dangerous decomposition products known.
- **Additional information:**  
When hotmelt adhesives are melted and applied, vapours are set free and an unpleasant odour can occur, even if the recommended working temperature has been observed. Moreover if the prescribed working temperature is exceeded over a longer period, harmful decomposition products can develop. Precautions should be taken to eliminate the vapours, e.g. by using a suitable ventilation system.  
Therefore measures for the elimination of the vapours have to be taken, e.g. by means of an appropriate ventilation/ exhaust device.

### SECTION 11: Toxicological information

- **11.1. Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC<sub>50</sub> values relevant for classification:**
  - 101-68-8 diphenylmethane-4,4'-diisocyanate**
  - Oral LD<sub>50</sub> >10,000 mg/kg (rat) (84/449/EWG, B.1)
  - Dermal LD<sub>50</sub> >9,400 mg/kg (rabbit) (OECD 402)
  - Inhalative LC<sub>50</sub>/4h<sub>(dust,mist)</sub> 1.5 mg/l (rat) (Calculation (ATE))
  - 3068-76-6 Phenylaminopropyltrimethoxysilan**
  - Oral LD<sub>50</sub> 1,379 mg/kg (rat)  
männliche Ratten: 1379mg/kg  
weibliche Ratten: 2843 mg/kg
  - Dermal LD<sub>50</sub> >2,000 mg/kg (rat)
- **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 allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**  
Suspected of causing cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1. Toxicity**
- **Aquatic toxicity:**
  - 101-68-8 diphenylmethane-4,4'-diisocyanate**
  - LC<sub>50</sub> >1,000 mg / l / 96h (fish)
  - EC<sub>50</sub> >1,000 mg / l / 24h (water flea - daphnia)
  - IC<sub>50</sub> >1,640 mg / l / 72h (algae)
- **12.2. Persistence and degradability** No further relevant information available.
- **12.3. Bioaccumulative potential** No further relevant information available.
- **12.4. Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Behaviour in sewage processing plants:**
- **Remark:**  
At correct sewage disposal in small quantities to biological sewage plants failures of the activated sludge are not expected.

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- **Additional ecological information:**
- **General notes:** Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
- **12.5. Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6. Other adverse effects** No further relevant information available.

### 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 04 09\*: waste adhesives and sealants containing organic solvents or other dangerous substances  
Adhesive reacted completely:  
08 04 10: waste adhesives and sealants other than those mentioned in 08 04 09
- **Uncleaned packaging:**
- **Recommendation:**  
Non contaminated packagings may be recycled.  
Empty contaminated packagings thoroughly. Disposal must be made according to official regulations.

### SECTION 14: Transport information

- **14.1. UN-Number**
- **ADR, IMDG, IATA** Void
- **14.2. UN proper shipping name**
- **DOT, ADR, IMDG, IATA** Void
- **14.3. Transport hazard class(es)**
- **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**  
See position no 2 - Hazards Identification
- **EU-Regulations**  
  
101-68-8 diphenylmethane-4,4'-diisocyanate: REACH, Annex XVII, No. 56a
- **Directive 2012/18/EU - Seveso-III:**
- **Named dangerous substances - ANNEX I** None of the ingredients is included.
- **National regulations:**
- **D: Waterhazard class** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations:** Restricted to professional users.
- **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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- **JAPAN**

**Building Standard Law on Sick House Issues, enforced on July 1,2003**

Registration 701.4 :

J A I A 010172 F☆☆☆☆

- **Volatile Organic Compounds**

**4 VOC Emission Rate Standard :**

Registration 701.4 :

J A I A 404167 **4VOC**

- **Relevant phrases**

H302 Harmful if swallowed.

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 the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

- **Department issuing SDS: Safety & Environment**

- **Abbreviations and acronyms:**

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

DOT: US Department of Transportation

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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