

Safety data sheet
 according to Regulation (EC) No. 1907/2006 as amended from
 time to time

Printing date 08.08.2023



Version-No. 5 (replaces version 4)

Revision: 08.08.2023

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

- **1.1. Product identifier**
- Trade name / Article-No: **KLEIBERIT 641.0**
- **UFI:** QY6G-D0X8-P00C-1MWS
- **1.2. Relevant identified uses of the substance / mixture or uses advised against**
 For professional users only.
- **Application of the substance / the mixture** Adhesives
- **1.3. Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 KLEIBERIT SE & Co. KG
 Max-Becker-Str. 4
 76356 Weingarten
 Germany
- **Further information obtainable from:**
 phone: +49 (0) 7244 62-0
 FAX: +49 (0) 7244 700-0
 E-Mail: hse@kleiberit.com
- **1.4. Emergency telephone number:**
+44 1235 239670 European regional number (European languages)
112 Emergency telephone number for Malta
543 22 22 Icelandic University Hospital

SECTION 2: Hazards identification

- **2.1. Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008 - GHS/CLP**
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2 H319 Causes serious eye irritation.
 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.
 STOT SE 3 H335 May cause respiratory irritation.
- **2.2. Label elements**
- **Hazard pictograms**


 GHS07 GHS08
- **Signal word** Danger
- **Hazard-determining components of labelling:**
 diphenylmethane-4,4'-diisocyanate
- **Hazard statements**
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317 May cause an allergic skin reaction.
 H351 Suspected of causing cancer.

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H335 May cause respiratory irritation.

Precautionary statements

- P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves / eye protection / face protection.
 P302+P352 IF ON SKIN: Wash with plenty of water and soap.
 P304+P340 IF INHALED: Remove person to fresh air and keep 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.
 P314 Get medical advice/attention if you feel unwell.

Additional information:

Contains isocyanates. May produce an allergic reaction.
 As from 24 August 2023 adequate training is required before industrial or professional use.

Information concerning particular hazards for human and environment:

- - 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, EUH204 ATE: LC ₅₀ /4 h inhalative: 11 mg/l Specific concentration limits: Skin Irrit. 2; H315: C ≥ 5 % Eye Irrit. 2; H319: C ≥ 5 % Resp. Sens. 1; H334: C ≥ 0.1 % STOT SE 3; C ≥ 5 %	≥5-<10%

- **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.
 Take affected persons into fresh air and keep quiet.

After skin contact:

Treat affected skin with cotton wool or cellulose. Then wash and rinse thoroughly with water and a mild cleaning agent.
 Immediately wash with water and soap and rinse thoroughly.
 If skin irritation continues, consult a doctor.

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- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **4.2. Most important symptoms and effects, both acute and delayed**
Asthma attacks
Allergic reactions
- **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:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2. Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Isocyanates
Nitrogen oxides (NO_x)
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.
Particular danger of slipping on leaked/spilled product.
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:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **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**
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
Appropriate regular employee training.
Skin contact 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.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Avoid contact with skin and eyes.
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

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- **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

- **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 term 50 mg/kg (human being)
 Inhalative DNEL short term 0.1 mg/m³ (human being)
 DNEL long term 0.05 mg/m³ (human being)

- **PNECs**

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

PNEC- Freshwater 1 mg/l (not specified)
 PNEC-seawater 0.1 mg/l (not specified)
 PNEC-periodic release 10 mg/l (not specified)
 PNEC-Freshwater sediment 1 mg/kg (not specified)
 PNEC-soil 1 mg/kg (not specified)
 PNEC-wastewater treatment plant 1 mg/l (not specified)

- **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

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

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

AGW (Germany) Long-term value: 0.05 E mg/m³
 1;=2=(I);DFG, 11, 12, H, Sah, Y

- **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

- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:** Do not inhale gases / fumes / aerosols.
- **Respiratory protection:**
 Use suitable respiratory protective device in case of insufficient ventilation:
 Filter A/P2 (EN 14387)
 At spray application respiratory protection must be worn.

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- **Hand protection**
Protective gloves
Heat resistant gloves
- **Material of gloves**
A Nitrile rubber - NBR: AlphaTec® (> 0,4 mm)
Leather gloves
- **Eye/face protection** Tightly sealed goggles
- **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

· 9.1. Information on basic physical and chemical properties

· General Information

- | | |
|---|------------------------------------|
| · Physical state | Fluid |
| · Colour: | According to product specification |
| · Odour: | Light |
| · Odour threshold: | Not determined. |
| · Melting point/freezing point: | Undetermined. |
| · Boiling point or initial boiling point and boiling range | Undetermined. |
| · Flammability | Not applicable. |
| · Lower and upper explosion limit | |
| · Lower: | Not determined. |
| · Upper: | Not determined. |
| · Flash point: | 250 °C |
| · Auto-ignition temperature: | >300 °C |
| · Decomposition temperature: | Not determined. |
| · pH | Not determined. |
| · Viscosity: | |
| · Kinematic viscosity | Not determined. |
| · Dynamic at 20 °C: | ca. 280.000 mPas |
| · Solubility | |
| · water: | Not miscible or difficult to mix. |
| · Partition coefficient n-octanol/water (log value) | Not determined. |
| · Vapour pressure: | Not determined. |
| · Density and/or relative density | |
| · Density at 20 °C: | ca. 1.1 g/cm ³ |
| · Relative density | Not determined. |
| · Vapour density | Not determined. |

· 9.2. Other information

- | | |
|--|---|
| · Appearance: | |
| · Form: | Fluid |
| · Important information on protection of health and environment, and on safety. | |
| · Ignition temperature: | Product is not selfigniting. |
| · Explosive properties: | Product does not present an explosion hazard. |
| · Change in condition | |
| · Evaporation rate | Not determined. |
| · Information with regard to physical hazard classes | |
| · Explosives | Void |
| · Flammable gases | Void |
| · Aerosols | Void |
| · Oxidising gases | Void |
| · Gases under pressure | Void |
| · Flammable liquids | Void |

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· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

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.
- **10.5. Incompatible materials:** No further relevant information available.
- **10.6. Hazardous decomposition products:** Isocyanates

SECTION 11: Toxicological information

- **11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC₅₀ values relevant for classification:**

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

Oral LD₅₀ >2,000 mg/kg (rat) (84/449/EWG, B.1)

Dermal LD₅₀ >9,400 mg/kg (rabbit) (OECD 402)

Inhalative LC₅₀ /4 h 11 mg/l (ATE)
- **Note:**
diphenylmethane-diisocyanate:
The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.
- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **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** May cause respiratory irritation.
- **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.

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- **11.2 Information on other hazards**
- **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1. Toxicity**
- **Aquatic toxicity:**

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

LC₅₀ >1,000 mg / l / 96h (fish)EC₅₀ >1,000 mg / l / 24h (water flea - daphnia)IC₅₀ >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.

- **12.5. Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

- **12.7 Other adverse 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.

- **Additional ecological information:**

- **General notes:**

Not known to be hazardous to water.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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 10: waste adhesives and sealants other than those mentioned in 08 04 09

08 04 09* waste adhesives and sealants containing organic solvents or other hazardous substances

- **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 or ID 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.

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- **14.6. Special precautions for user** Not applicable.
- **14.7. Maritime transport in bulk according to IMO instruments** 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

- **Directive 2012/18/EU - Seveso-III:**
- **Named dangerous substances - ANNEX I** None of the ingredients is included.
- **Regulation (EC) No 1907/2006 - REACH, ANNEX XVII** Conditions of restriction: 3, 56, 74
- **Regulation (EU) No 649/2012**

None of the ingredients is listed.

- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

- **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

- **National regulations:**

- **D: Waterhazard class** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations:** For professional users only.
- **VOC - 2010/75/EU [g/L]:** 0.0 g/l
- **VOC - 2010/75/EU [%]:** 0.00 %

- **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.

- **Relevant phrases**

- 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.
- EUH204 Contains isocyanates. May produce an allergic reaction.

- **Department issuing SDS:** Safety & Environment
- **Version number of previous version:** 4

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Trade name / Article-No: KLEIBERIT 641.0*(Contd. of page 8)***· Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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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