

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

Printing date 17.06.2024

Version-No. 1.0

Revision: 17.06.2024

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

- **1.1. Product identifier**
- Trade name / Article-No: **KLEIBERIT 704.3.57 ME**
- **1.2. Relevant identified uses of the substance / mixture or uses advised against**
Do not use for private purposes (household).
- **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)

SECTION 2: Hazards identification

- **2.1. Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008 - GHS/CLP**
The product is not classified as hazardous to health or environment according to the CLP regulation.
- **2.2. Label elements**
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**
Safety data sheet available on request.
Contains isocyanates. May produce an allergic reaction.
- **2.3. Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Determination of endocrine-disrupting properties** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

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· **Dangerous components:**

Registry-No's	Identification / Classification GHS-CLP	%
CAS: 28182-81-2 Reg.nr.: 01-2119485796-17-XXXX	aliphatic polyisocyanate, based on HDI Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335 ATE: LC ₅₀ /4 h inhalative: 11 mg/l	≥0.1-<1%
CAS: 5873-54-1 Reg.nr.: 01-2119480143-45-XXXX	Diphenylmethane-2,4'-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; H335: C ≥ 5 %	<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; consult doctor in case of complaints.
- **After skin contact:**
After contact with the molten product, cool rapidly with cold water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** 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**
- **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** No further relevant information available.
- **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** Not required.
- **6.2. Environmental precautions:** No special measures required.
- **6.3. Methods and material for containment and cleaning up:** Pick up mechanically.
- **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.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

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.

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

Prevent formation of dust.

Avoid contact with the skin.

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: None.

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

28182-81-2 aliphatic polyisocyanate, based on HDI

Inhalative DNEL short term 1 mg/m³ (human being)

DNEL long term 0.5 mg/m³ (human being)

5873-54-1 Diphenylmethane-2,4'-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

28182-81-2 aliphatic polyisocyanate, based on HDI

PNEC- Freshwater 0.127 mg/l (not specified)

PNEC-seawater 0.0127 mg/l (not specified)

PNEC-Freshwater sediment 266,701 mg/kg (not specified)

PNEC-Seawater sediment 26,670 mg/kg (not specified)

PNEC-soil 53.2 mg/kg (not specified)

PNEC-wastewater treatment plant 38.28 mg/l (not specified)

5873-54-1 Diphenylmethane-2,4'-diisocyanate

PNEC- Freshwater 1 mg/l (not specified)

PNEC-seawater 0.1 mg/l (not specified)

PNEC-soil 1 mg/kg (not specified)

PNEC-wastewater treatment plant 1 mg/l (not specified)

CAS No. Designation of material % Type Value Unit

5873-54-1 Diphenylmethane-2,4'-diisocyanate

AGW (Germany) Long-term value: 0.05 mg/m³

1;=2=(I);AGS, 11, 12

8.2. Exposure controls

limit the exposure to:

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- 8 hours
- **Appropriate engineering controls** No further data; see section 7.
 - **Individual protection measures, such as personal protective equipment**
 - **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
 - **Respiratory protection:** Not necessary if room is well-ventilated.
 - **Hand protection**
Protective gloves
Heat resistant gloves
 - **Material of gloves**
A Nitrile rubber - NBR: AlphaTec® (> 0,4 mm)
Leather gloves
 - **Eye/face protection** Safety glasses
 - **Body protection:** Protective work clothing
 - **Thermal hazards** Risk of burns during thermal processing.

SECTION 9: Physical and chemical properties

- **9.1. Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Solid
- **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 determined.
- **Lower and upper explosion limit**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Flash point:** Not applicable.
- **Auto-ignition temperature:** >300 °C (polymer of polyether polyester polyol and diphenylmethane diisocyanate)
- **Decomposition temperature:** Not determined.
- **pH** Not applicable.
- **Viscosity:** At room temperature: not applicable
- **Kinematic viscosity** Not applicable.
- **Dynamic:** Not applicable.
- **Solubility**
- **water:** Insoluble.
- **Partition coefficient n-octanol/water (log value)** Not determined.
- **Vapour pressure:** Not applicable.
- **Density and/or relative density**
- **Density at 20 °C:** ca. 1.1 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not applicable.
- **Particle characteristics**
See section 3.
- **9.2. Other information**
- **Appearance:**
- **Form:** Solid
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Product is not selfigniting.

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· Explosive properties:	Product does not present an explosion hazard.
· Change in condition	
· Evaporation rate	Not applicable.
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· 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:** 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 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:**

28182-81-2 aliphatic polyisocyanate, based on HDI

Oral	LD ₅₀	>5,000 mg/kg (rat) weibliche Ratte >2500 mg/kg
Dermal	LD ₅₀	>2,000 mg/kg (rabbit) (OECD 402) >2,000 mg/kg (rat) (OECD 402)
Inhalative	LC ₅₀ /4 h	11 mg/l (ATE)

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5873-54-1 Diphenylmethane-2,4'-diisocyanateOral 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)

- **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** Based on available data, the classification criteria are not met.
- **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** 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.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

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

28182-81-2 aliphatic polyisocyanate, based on HDIEC₅₀ >100 mg / l / 48h (water flea - daphnia)**5873-54-1 Diphenylmethane-2,4'-diisocyanate**LC₅₀ >1,000 mg / l / 96h (Zebrafish - Danio rerio)EC₅₀ >1,000 mg / l / 24h (water flea - daphnia)IC₅₀ >1,640 mg / l / 72h (Chlorophyceae - Scenedesmus subspicatus)

- **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**
- **Additional ecological information:**
- **General notes:** 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
- **Uncleaned packaging:**
- **Recommendation:**
- Non contaminated packagings may be recycled.
- Empty contaminated packagings thoroughly. Disposal must be made according to official regulations.

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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.
- **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: 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.
- **VOC - 2010/75/EU [g/L]:** <5.0 g/l
- **VOC - 2010/75/EU [%]:** <0.50 %
- **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**

- 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

· **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
- ATE: Acute toxicity estimate values
- 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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