

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

Printing date 17.12.2025

Version-No. 5.0 (replaces version 4.0)

Revision: 17.12.2025

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

- **1.1. Product identifier**
- **Trade name / Article-No: KLEIBERIT 473.0**
Nanoform
- **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)

SECTION 2: Hazards identification

- **2.1. Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008 - GHS/CLP**
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.
- **2.2. Label elements**
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements**
H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
P273 Avoid release to the environment.
- **Additional information:**
Contains 1,2-Benzisothiazol-3(2H)-on. May produce an allergic reaction.
Contains 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (mixture in a ratio 3:1). 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: 6535-46-2 Reg.nr.: 01-2119456820-39-XXXX	3-Hydroxy-N-(o-tolyl)-4-[(2,4,5-trichlorophenyl)azo] naphthalene-2-carboxamide Aquatic Chronic 2, H411 ATE: LD ₅₀ dermal: >5,000 mg/kg Nanoform: Number-based particle size distribution - d10: 10-60 - d50: 10-80 - d90: 30-120 Crystallinity: crystalline nanoform Aspect ratio: 1-3 Surface-to-mass ratio: 5-80 m ² /g Methods of analysis: TEM, BET	≥0.25-<2%
CAS: 2634-33-5 Reg.nr.: 01-2120761540-60-XXXX	1,2-benzisothiazol-3(2H)-one Acute Tox. 2, H330; Eye Dam. 1, H318; Aquatic Acute 1, H400; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Skin Irrit. 2, H315; Skin Sens. 1A, H317 ATE: LC ₅₀ /4 h inhalative: 0.5 mg/l Specific concentration limit: Skin Sens. 1A; H317: C ≥0.036 %	<0.036%
CAS: 55965-84-9	a mixture of: 5-chloro-2-methyl-2 H -isothiazol-3-one [EC No 247-500-7] and 2-methyl-2 H -isothiazol-3-one [EC No 220-239-6] (3:1) Acute Tox. 3, H301; Acute Tox. 2, H310; Acute Tox. 2, H330; Skin Corr. 1C, H314; Eye Dam. 1, H318; Aquatic Acute 1, H400 (M=100); Aquatic Chronic 1, H410 (M=100); Skin Sens. 1A, H317, EUH071 Specific concentration limits: Skin Corr. 1C; H314: C ≥0.6 % Skin Irrit. 2; H315: 0.06 % ≤ C < 0.6 % Eye Dam. 1; H318: C ≥ 0.6 % Eye Irrit. 2; H319: 0.06 % ≤ C < 0.6 % Skin Sens. 1A; H317: C ≥ 0.0015 %	≥0.00025-<0.0015%

· 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:** Generally the product does not irritate the skin.**· 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.

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- **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**
Particular danger of slipping on leaked/spilled product.
- **6.2. Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
- **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** No special precautions are necessary if used correctly.
- **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:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **DNELs**

6535-46-2 3-Hydroxy-N-(o-tolyl)-4-[(2,4,5-trichlorophenyl)azo]naphthalene-2-carboxamide
Dermal DNEL long term 42 mg/kg (human being)
Inhalative DNEL long term 3 mg/m³ (human being)
- **PNECs**

6535-46-2 3-Hydroxy-N-(o-tolyl)-4-[(2,4,5-trichlorophenyl)azo]naphthalene-2-carboxamide

PNEC- Freshwater	0.085 mg/l (not specified)
PNEC-seawater	0.0085 mg/l (not specified)
PNEC-Freshwater sediment	2,182 mg/kg (not specified)
PNEC-Seawater sediment	218 mg/kg (not specified)
PNEC-soil	10 mg/kg (not specified)

2634-33-5 1,2-benzisothiazol-3(2H)-one

PNEC- Freshwater	0.00403 mg/l (not specified)
PNEC-seawater	0.000403 mg/l (not specified)
PNEC-Freshwater sediment	0.0499 mg/kg (not specified)
PNEC-Seawater sediment	0.00499 mg/kg (not specified)
PNEC-soil	3 mg/kg (not specified)

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PNEC-wastewater treatment plant 1.03 mg/l (not specified)

55965-84-9 a mixture of: 5-chloro-2-methyl-2 H -isothiazol-3-one [EC No 247-500-7] and 2-methyl-2 H -isothiazol-3-one [EC No 220-239-6] (3:1)

PNEC- Freshwater 0.00339 mg/l (not specified)

PNEC-seawater 0.00339 mg/l (not specified)

PNEC-Freshwater sediment 0.027 mg/kg (not specified)

PNEC-Seawater sediment 0.027 mg/kg (not specified)

PNEC-soil 0.01 mg/kg (not specified)

PNEC-wastewater treatment plant 0.027 mg/l (not specified)

CAS No.	Designation of material	%	Type	Value	Unit
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2634-33-5 1,2-benzisothiazol-3(2H)-one

MAK (Germany) vgl.Abschn.IIb und Xc

55965-84-9 a mixture of: 5-chloro-2-methyl-2 H -isothiazol-3-one [EC No 247-500-7] and 2-methyl-2 H -isothiazol-3-one [EC No 220-239-6] (3:1)MAK (Germany) Long-term value: 0.2E mg/m³
vgl.Abschn.Xc**8.2. Exposure controls**

limit the exposure to:

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

- Material of gloves** Synthetic rubber gloves

- Eye/face 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**

- Physical state**

Liquid

- Colour:**

Red

- Odour:**

Weak, characteristic

- Odour threshold:**

Not determined

- Melting point/freezing point:**

Undetermined

- Boiling point or initial boiling point and boiling range**

100 °C

- Flammability**

Not applicable

- Lower and upper explosion limit**

- Lower:**

Not determined

- Upper:**

Not determined

- Flash point:**

Not applicable

- Auto-ignition temperature:**

Not applicable

- Decomposition temperature:**

Not determined

- pH at 20 °C**

ca. 5

- Viscosity:**

- Kinematic viscosity**

Not determined

- Dynamic at 20 °C:**

ca. 140 mPas

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· 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. 1.05 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.
· Solvent separation test:	
· Organic solvents:	0.0 %
· 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
· 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.

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.

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Trade name / Article-No: KLEIBERIT 473.0*(Contd. of page 5)***· LD/LC₅₀ values relevant for classification:****6535-46-2 3-Hydroxy-N-(o-tolyl)-4-[(2,4,5-trichlorophenyl)azo]naphthalene-2-carboxamide**Oral LD₅₀ >5,000 mg/kg (rat)Dermal LD₅₀ >5,000 mg/kg (ATE)**2634-33-5 1,2-benzisothiazol-3(2H)-one**Oral LD₅₀ >1,150 mg/kg (mouse)

1,020 mg/kg (rat)

Dermal LD₅₀ >2,000 mg/kg (mouse)

4,115 mg/kg (rat)

Inhalative LC₅₀ /4 h 0.5 mg/l (ATE)**55965-84-9 a mixture of: 5-chloro-2-methyl-2 H -isothiazol-3-one [EC No 247-500-7] and 2-methyl-2 H -isothiazol-3-one [EC No 220-239-6] (3:1)**Oral LD₅₀ 457 mg/kg (rat)Dermal LD₅₀ 141 mg/kg (rabbit)Inhalative LC₅₀ /4 h 0.33 mg/l (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**

The use of preservatives in this product is necessary.

There are known cases of existing sensitization to these substances and allergic reactions may be possible in case of skin contact.

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** Unnecessary**· Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information**· 12.1. Toxicity****· Aquatic toxicity:****2634-33-5 1,2-benzisothiazol-3(2H)-one**LC₅₀ 1.3 mg / l / 96h (Fathead minnow - Pimephales promelas)LC₅₀ 2.94 mg / l / 48h (water flea - daphnia)EC₅₀ 3.7 mg / l / 48h (water flea - daphnia)EC₅₀ 0.37 mg / l / 72h (green algae-Ps.kirchneriella subcapitata)**55965-84-9 a mixture of: 5-chloro-2-methyl-2 H -isothiazol-3-one [EC No 247-500-7] and 2-methyl-2 H -isothiazol-3-one [EC No 220-239-6] (3:1)**LC₅₀ 0.19 mg / l / 96h (Fathead minnow - Pimephales promelas)

0.19 mg / l / 96h (fish)

EC₅₀ 0.16 mg / l / 48h (water flea - daphnia)EC₅₀ 0.018 mg / l / 72h (green algae-Ps.kirchneriella subcapitata)*(Contd. on page 7)*

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- **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.

SECTION 14: Transport information

- | | |
|---|---|
| <ul style="list-style-type: none"> · 14.1. UN number or ID number · ADR, IMDG, IATA · 14.2. UN proper shipping name · DOT, ADR, IMDG, IATA · 14.3. Transport hazard class(es) · Class · 14.4. Packing group · ADR, IMDG, IATA · 14.5. Environmental hazards: · 14.6. Special precautions for user · 14.7. Maritime transport in bulk according to IMO instruments | <p>Void</p> <p>Void</p> <p>Void</p> <p>Void</p> <p>Void</p> <p>Not applicable</p> <p>Not applicable</p> <p>Not applicable</p> |
|---|---|

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
- **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.

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- **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]:** <1.0 g/l

- **VOC - 2010/75/EU [%]:** <0.10 %

- **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**

H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H310 Fatal in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H330 Fatal if inhaled.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 H411 Toxic to aquatic life with long lasting effects.
 EUH071 Corrosive to the respiratory tract.

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

- **Version number of previous version:** 4.0

- **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

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Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 2: Acute toxicity – Category 2

Skin Corr. 1C: Skin corrosion/irritation – Category 1C

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1A: Skin sensitisation – Category 1A

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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