

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

Printing date 27.10.2023

Version number 4 (replaces version 3)

Revision: 27.10.2023

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

· **1.1 Product identifier**

· **Product name:** T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

· **Catalog number:**

424-2, 48010035, 48010135, 48010235, 48011112, 48011212, 48011050, 48011150, 48012250, 48011250, 48011199, 194280-10, 194281-10, 48010035-0, 48010135-0, 48010235-0, 48011112-0, 48011212-0, 48011050-0, 48011150-0, 48012250-0, 48011250-0, 48011199-0

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**

· **Application of the substance / the preparation:** Standard Solution for calibration purposes

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**

The product is not classified as hazardous according to the GB CLP regulation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** Void

· **Hazard pictograms** Void

· **Signal word** Void

· **Hazard statements** Void

· **Additional information:**

EUH208 Contains methenamine, formaldehyde. May produce an allergic reaction.
EUH210 Safety data sheet available on request.

· **2.3 Other hazards** No further relevant information available.

· **Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **Determination of endocrine-disrupting properties**

The product does not contain substances with endocrine disrupting properties.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2023

Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 1)

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** aqueous solution

· Dangerous components:		
CAS: 100-97-0 EINECS: 202-905-8 Index No: 612-101-00-2 Reg.nr.: 01-2119474895-20-XXXX	methenamine ⚠ Flam. Sol. 2, H228; ⚠ Skin Sens. 1, H317	0.1–<1%
CAS: 50-00-0 EINECS: 200-001-8 Index No: 605-001-00-5	formaldehyde ⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ⚠ Muta. 2, H341; Carc. 1B, H350; ⚠ Skin Corr. 1B, H314; ⚠ Skin Sens. 1, H317 Specific concentration limits: Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 5 % ≤ C < 25 % Eye Irrit. 2; H319: 5 % ≤ C < 25 % Skin Sens. 1; H317: C ≥ 0.2 % 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**
- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**
Instantly rinse with water.
If skin irritation or rash occurs: Get medical advice/attention.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed:** allergic reactions
- **Danger** risk of skin sensitization
- **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** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire:
Nitrogen oxides (NOx)
NH₃
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.

(Contd. on page 3)

— GB —

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2023

Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 2)

Ensure adequate ventilation

- **Advice for emergency responders:** Protective equipment: see section 8

- **6.2 Environmental precautions:**

Do not allow product to reach sewage system or water bodies.

Dilute with much water.

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

Ensure adequate ventilation.

Absorb with liquid-binding material (sand, diatomite, universal binders).

Dispose of contaminated material as waste according to item 13.

- **6.4 Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

- **Advice on safe handling:** No special precautions necessary if used correctly.

- **Hygiene measures:**

The usual precautionary measures should be adhered to general rules for handling chemicals.

Avoid contact with the skin.

Wash hands during breaks and at the end of the work.

Do not eat, drink or smoke when using this product.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Requirements to be met by storerooms and containers:** Store only in the original container.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:**

Protect from frost.

Protect from heat and direct sunlight.

Protect from the effects of light.

Protect from humidity and keep away from water.

- **Recommended storage temperature:** 5°C - 25°C

- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

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

CAS: 50-00-0 formaldehyde

WEL (Great Britain)

Short-term value: 2.5 mg/m³, 2 ppmLong-term value: 2.5 mg/m³, 2 ppm

Carc

BOELV (European Union)

Short-term value: 0.74 mg/m³, 0.6 ppmLong-term value: 0.37 (0.62)* mg/m³, 0.3 (0.5)* ppm

Skin sens;*health/funeral/embalming till 11/7/24

- **Regulatory information**

WEL (Great Britain): EH40/2020

BOELV (European Union): EU 2022/431

- **DNELs**

Derived No Effect Level (DNEL)

CAS: 100-97-0 methenamine

Dermal

DNEL

8.8 mg/kg (Worker / long-term /systemic effects)

Inhalative

DNEL

31 mg/m³ (Worker / long-term /systemic effects)

- **Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

- **PNECs**

Predicted No Effect Concentration (PNEC)

(Contd. on page 4)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2023

Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 3)

CAS: 100-97-0 methenamine

PNEC	100 mg/l (Sewage treatment plant)
	0.5 mg/l (Marine water)
	2.4 mg/l (Fresh water sediment)
	3 mg/l (Fresh water)

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Individual protection measures, such as personal protective equipment**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Eye/face protection** Safety glasses recommended during refilling.
- **Hand protection**
Use protective gloves when transferring the solution.
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
Value for the permeation: Level = 1 (< 10 min)
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Other skin protection (body protection):** Protective work clothing.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **Physical state** Fluid
- **Form:** Suspension
- **Colour:** Colourless
- **Odour:** Not distinguishable
- **Odour threshold:** Not determined.
- **Melting point/Freezing point:** Not determined.
- **Boiling point or initial boiling point and boiling range** 100°C (CAS: 7732-18-5 water)
- **Flammability** The product is not combustible.
- **Explosive properties:** Product is not explosive.
- **Lower and upper explosion limit**
- **Lower:** Not applicable.
- **Upper:** Not applicable.
- **Flash point:** Not applicable.
- **Auto-ignition temperature:** Not applicable.
- **Decomposition temperature:** Not determined.
- **pH at 20°C** ~10
- **Kinematic viscosity** Not determined.
- **Solubility**
- **Water:** Fully miscible
- **Partition coefficient n-octanol/water (log value)** Not applicable (mixture).
- **Vapour pressure:** Not determined.
- **Density and/or relative density**
- **Density at 20°C:** ~1 g/cm³
- **Relative density:** Not determined.
- **Relative gas density** Not determined.
- **Particle characteristics** Not applicable (liquid).

(Contd. on page 5)

— GB —

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2023

Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 4)

9.2 Other information

- **Information with regard to physical hazard classes**
- **Corrosive to metals** Void
- **Other safety characteristics**
- **Oxidising properties:** none
- **Additional information**
- **Solids content:** < 2.5 %
- **Solvent content:**
- **Organic solvents:** < 0.1 %
- **Water:** > 97.5 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
Violent reactions possible with:
The generally known reaction partners of water.
- **10.4 Conditions to avoid** Strong heating (decomposition)
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** see section 5

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 that are relevant for classification:

CAS: 100-97-0 methenamine

Oral	LD50	9200 mg/kg (rat) (IUCLID)
Dermal	LD50.	>2000 mg/kg (rat) (OECD 402)

CAS: 50-00-0 formaldehyde

Oral	LD50	100 mg/kg (rat)
Dermal	LD50	270 mg/kg (rabbit)
Inhalative	LC50/4h	3 mg/l (vapour)

- **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.

Information on components:

CAS: 100-97-0 methenamine

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

Information on components:

Contains methenamine, formaldehyde. May produce an allergic reaction.

CAS: 100-97-0 methenamine

Sensitisation	OECD 406	(guinea pig: positive)
	Patch test (human)	(positive) (IUCLID)

- **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.

Information on components:

OECD 414: Teratogenicity testing
 OECD 473: Mutagenicity testing
 OECD 471, 474, 476, 487: Germ cell mutagenicity testing

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2023

Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 5)

CAS: 100-97-0 methenamine

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (IUCID)

- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -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** The product does not contain substances with endocrine disrupting properties.
- **Other information**
According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

CAS: 100-97-0 methenamine

EC50	36 mg/l/48h (Daphnia magna) (IUCID)
EC10	5 mg/l (fish)
LC50 (static)	41 mg/l/96h (bluegill) (US-EPA)

CAS: 50-00-0 formaldehyde

EC50	2 mg/l/48h (Daphnia magna)
LC50	100 mg/l/96h (bluegill) IUCID 24 mg/l/96h (fathead minnow)

· Bacterial toxicity:

CAS: 100-97-0 methenamine

EC50 (static)	>5000 mg/l (Bacterial toxicity) (DIN 38412) (Merck, Vibrio fischeri)
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· 12.2 Persistence and degradability

CAS: 100-97-0 methenamine

OECD 302 C	39–47 % / 28 d (not readily biodegradable) (Modified MITI Test (II))
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CAS: 50-00-0 formaldehyde

OECD 301 D	99 % / 28 d (readily biodegradable) (Closed Bottle Test) (37% solution)
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· 12.3 Bioaccumulative potential

CAS: 100-97-0 methenamine

log Pow	-2.84 (.) (experimental) (IUCID)
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CAS: 50-00-0 formaldehyde

log Pow	0.021 (.)
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- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects** Avoid transfer into the environment.
- **Water hazard:**
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 6)

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation

Disposal must be made according to official regulations.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to disposers of hazardous waste.

European waste catalogue

16 05 09 | discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information

14.1 UN number or ID number
ADR, IMDG, IATA Void

14.2 UN proper shipping name
ADR, IMDG, IATA Void

14.3 Transport hazard class(es)
ADR, IMDG, IATA
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.

Transport/Additional information: Not dangerous according to the above specifications.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Poisons Act UK
Regulated explosives precursors

CAS: 100-97-0 | methenamine | Listed

Regulated poisons

None of the ingredients is listed.

Reportable explosives precursors

None of the ingredients is listed.

Reportable poisons

CAS: 50-00-0 | formaldehyde | 5%

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

not regulated: homogeneous mixture of more than five components with c <1% (w/w) substance Annex I or II

explosives precursors - ANNEX II

CAS: 100-97-0 | methenamine

Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:

None of the ingredients is listed.

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

(Contd. of page 7)

· 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.
· Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:
None of the ingredients is listed.
· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)
None of the ingredients is listed.
· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)
None of the ingredients is listed.
· Substances of very high concern (SVHC) according to REACH, Article 57 This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).
· Substances of very high concern (SVHC) according to UK REACH This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).
· Directive 2012/18/EU (SEVESO III):
· Named dangerous substances - ANNEX I None of the ingredients is listed.
· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 72
· Information about limitation of use: Not required.
· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Training hints** Provide adequate information, instruction and training for operators.

· **Relevant phrases**

H228 Flammable solid.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.

· **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: half maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
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 (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Sol. 2: Flammable solids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2

(Contd. on page 9)

Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 4 (replaces version 3)

Revision: 27.10.2023

Product name: T-CALplus® / T-CAL® Standard 0.3 NTU / 1.0 NTU / 5.0 NTU / 10 NTU

Carc. 1B: Carcinogenicity – Category 1B

(Contd. of page 8)

Sources

Data arise from safety data sheets, reference works and literature.
IUCLID (International Uniform Chemical Information Database)
GESTIS- Stoffdatenbank (Substance Database, Germany)
ECHA: European Chemicals Agency <http://echa.europa.eu>

· * **Data compared to the previous version altered.**

— GB —