Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 05/25/2021 Reviewed on 05/25/2021

1 Identification

· **Product identifier**

· **Trade name: T-CAL Standard < 0.1 NTU**

· **Application of the substance / the mixture:** Liquid standard in sealed vials for calibration purposes

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture** The product is not classified as hazardous.

· **Label elements**
· **GHS label elements** none
· **Hazard pictograms** none
· **Signal word** none
· **Hazard statements** none

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

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** aqueous solution
· **Composition and Information on Ingredients:** none

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed** irritating effect possible
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** The product is not combustible.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.

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Trade name: T-CAL Standard < 0.1 NTU

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Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:** Wear protective equipment. Keep unprotected persons away.
· **Advice for emergency responders:** Protective equipment: see section 8

· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling**
· **Advice on safe handling:** No special precautions are necessary if used correctly.
· **Hygiene measures:**
The usual precautionary measures for handling chemicals should be followed.
Do not eat, drink or smoke when using this product.
Wash hands before breaks and at the end of work.

· **Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
· **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 exposure to the light.
Protect from humidity and water.
· **Recommended storage temperature:** 5°C - 25°C (41°F - 77°F)

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

8 Exposure controls/personal protection

· **Control parameters**
· **Components 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.

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
· **Breathing equipment:**
Not required.
Use respiratory protective device against the effects of fume/dust/aerosol.
· **Recommended filter device for short term use:** Filter A

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Trade name: T-CAL Standard < 0.1 NTU

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· **Protection of hands:**
Avoid direct contact with the chemical/ the product/ the preparation by organizational measures.
Wear gloves in case of breakage / leakage.
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Wear safety glasses in case of breakage / leakage.
· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:** No further relevant information available.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
· **Form / Physical state:**	Liquid
· **Color:**	Colorless
· **Odor:**	Light
· **Odor threshold:**	Not determined.
· **pH-value at 20°C (68°F):**	4.3
· **Melting point/freezing point:**	0°C (32°F)
· **Initial boiling point and boiling range:**	100°C (212°F) (CAS: 7732-18-5 water)
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Not applicable.
· **Ignition temperature:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
· **Lower:**	Not applicable.
· **Upper:**	Not applicable.
· **Oxidizing properties:**	none
· **Vapor Pressure at 20°C (68°F):**	23 hPa (17.3 mm Hg) (CAS: 7732-18-5 water)
· **Density at 20°C (68°F):**	0.99 g/cm³ (8.26 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility(ies)**	
· **Water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not applicable (mixture).
· **Viscosity:**	Not determined.
· **Kinematic:**	Not determined.
· **Other information**	
· **Solids content:**	0 %
· **Solvent content:**	
· **Organic solvents:**	< 0.5 %
· **Water:**	> 99.5 %

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
Violent reactions possible with:
The generally known reaction partners of water.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.

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· **Hazardous decomposition products:** No further relevant information available.

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:** Based on available data, the classification criteria are not met.

· **Primary irritant effect:**

· **on the skin:** Based on available data, the classification criteria are not met.
· **on the eye:** Based on available data, the classification criteria are not met.

· **Sensitization:** Based on available data, the classification criteria are not met.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:

· **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 (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.

· **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Small amounts may be diluted with plenty of water (3 to 5 times the volume) and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	none
· **UN proper shipping name** · **DOT, IMDG, IATA**	none
· **Transport hazard class(es)** · **DOT, IMDG, IATA** · **Class**	none
· **Packing group** · **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**
None of the ingredients is listed.

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**
None of the ingredients is listed.

· **Pennsylvania Special Hazardous Substance List:**
None of the ingredients is listed.

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Information about limitation of use:** Not required.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

· **Date of preparation / last revision** 05/25/2021 / -

· **Abbreviations and acronyms:**
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH© - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

· **Sources** Data arise from safety data sheets, reference works and literature.

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Printing date 05/25/2021 Reviewed on 05/25/2021

1 Identification

· **Product identifier**

· **Trade name: T-CAL Standard 20 NTU**

· **Catalogue number:** 1941-3, 00194170

· **Application of the substance / the mixture:** Liquid standard in sealed vials for calibration purposes

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**



GHS07

· **Signal word** Warning
· **Hazard-determining components of labeling:**
methenamine
· **Hazard statements**
H317 May cause an allergic skin reaction.
· **Precautionary statements**
P302+P352 If on skin: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

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

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** aqueous solution
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

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CAS: 100-97-0 EINECS: 202-905-8 Index number: 612-101-00-2 RTECS: MN 4725000	methenamine Flam. Sol. 2, H228; Skin Sens. 1, H317	1–≤2.5%
CAS: 50-00-0 EINECS: 200-001-8 Index number: 605-001-00-5 RTECS: LP 8925000	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; Flam. Liq. 4, H227	<0.1%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment in case of complaints.
· **Most important symptoms and effects, both acute and delayed**
allergic reactions
after inhalation:
mucosal irritations, cough, breathing difficulty
after swallowing:
gastric or intestinal disorders
pain
· **Danger:** risk of skin sensitization
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **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.
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Ammonia (NH_3)
Hydrogen cyanide (prussic acid HCN)
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
· **Advice for emergency responders:** Protective equipment: see section 8

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· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling**
· **Advice on safe handling:** No special precautions are necessary if used correctly.
· **Hygiene measures:**
Avoid contact with the skin.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
· **Information about storage in one common storage facility:** Store away from oxidizing agents.
· **Further information about storage conditions:**
Protect from frost.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
· **Recommended storage temperature:** 5°C - 25°C (41°F - 77°F)

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

8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

CAS: 100-97-0 methenamine	
TLV (USA)	Long-term value: NIC-1* mg/m³ *inhalable fraction,NIC-A4, NIC-DSEN
EV (Canada)	Short-term value: 2 mg/m³, 0.35 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
· **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.
· **Recommended filter device for short term use:** Filter P2
· **Protection of hands:** Wear gloves in case of breakage / leakage.
· **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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Wear safety glasses in case of breakage / leakage.

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· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:** Avoid release to the environment.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
· **Form / Physical state:**	Suspension
· **Color:**	Whitish
· **Odor:**	undistinguishable
· **Odor threshold:**	Not determined.
· **pH-value at 20°C (68°F):**	~10
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	100°C (212°F) (CAS: 7732-18-5 water)
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	The product is not combustible.
· **Ignition temperature:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
· **Lower:**	Not applicable.
· **Upper:**	Not applicable.
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not determined.
· **Density at 20°C (68°F):**	~1 g/cm³ (~8.35 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility(ies)**	
· **Water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not applicable (mixture).
· **Viscosity:**	Not determined.
· **Kinematic:**	Not determined.
· **Other information**	
· **Solids content:**	<2.5 %
· **Solvent content:**	
· **Organic solvents:**	< 0.1 %
· **Water:**	> 95.5 %

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!
Reacts with peroxides.
Reacts with oxidizing agents.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** see section 5

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:** Based on available data, the classification criteria are not met.

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· **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)

· **Primary irritant effect:**

· **on the skin:** Based on available data, the classification criteria are not met.
· **on the eye:** 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)

· **Sensitization:** May cause an allergic skin reaction.

· **Information on components:**

CAS: 100-97-0 methenamine		
Sensitization	OECD 406	(guinea pig: positive)
	Patch test (human)	(positive) (IUCLID)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

CAS: 50-00-0	formaldehyde	1

· **NTP (National Toxicology Program)**

CAS: 50-00-0	formaldehyde	K

· **OSHA-Ca (Occupational Safety & Health Administration)**

CAS: 50-00-0	formaldehyde

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:

· **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 (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.

· **Information on components:**
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 100-97-0 methenamine	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (IUCLID)

· **Additional toxicological information:**
Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 100-97-0 methenamine	
EC50	36 mg/l/48h (Daphnia magna) (IUCLID)
EC10	5 mg/l (fish)
LC50 (static)	41 mg/l/96h (bluegill) (US-EPA)

· **Bacterial toxicity:**	
CAS: 100-97-0 methenamine	
EC50 (static)	>5000 mg/l (Bacterial toxicity) (DIN 38412) (Merck, Vibrio fischeri)

· **Persistence and degradability**	
CAS: 100-97-0 methenamine	
OECD 302 C	39–47 % / 28 d (not readily biodegradable) (Modified MITI Test (II))

· **Bioaccumulative potential**	
CAS: 100-97-0 methenamine	
log Pow	-2.84 (.) (experimental) (IUCLID)

· **Mobility in soil** No further relevant information available.
· **Other adverse effects** Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	none
· **UN proper shipping name** · **DOT, IMDG, IATA**	none
· **Transport hazard class(es)** · **DOT, IMDG, IATA** · **Class**	none
· **Packing group** · **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.

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acc. to OSHA HCS (HazCom 2012)

Printing date 05/25/2021 Reviewed on 05/25/2021

Trade name: T-CAL Standard 20 NTU

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**

CAS: 50-00-0	formaldehyde

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 50-00-0	formaldehyde

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**

CAS: 100-97-0	methenamine
CAS: 50-00-0	formaldehyde

· **New Jersey Special Hazardous Substance List:**

CAS: 50-00-0	formaldehyde	CA, CO, MU, F4

· **Pennsylvania Right-to-Know List:**

CAS: 50-00-0	formaldehyde
CAS: 7783-20-2	ammonium sulphate

· **Pennsylvania Special Hazardous Substance List:**

CAS: 50-00-0	formaldehyde	ES
CAS: 7783-20-2	ammonium sulphate	E

· **EPA (Environmental Protection Agency)**

CAS: 50-00-0	formaldehyde	B1

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 50-00-0	formaldehyde

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**
H227 Combustible liquid.
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.

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· **Date of preparation / last revision** 05/25/2021 / -

· **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: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 4: Flammable liquids – Category 4
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
Carc. 1B: Carcinogenicity – Category 1B

· **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

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 05/25/2021 Reviewed on 05/25/2021

1 Identification

· **Product identifier**

· **Trade name: T-CAL Standard 200 NTU / 800 NTU**

· **Catalogue number:** 1941-4, 00194180, 00194190

· **Application of the substance / the mixture:** Liquid standard in sealed vials for calibration purposes

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**



GHS07

· **Signal word** Warning
· **Hazard-determining components of labeling:**
methenamine
· **Hazard statements**
H317 May cause an allergic skin reaction.
· **Precautionary statements**
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P302+P352 If on skin: Wash with plenty of water.

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

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** aqueous solution
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

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Trade name: T-CAL Standard 200 NTU / 800 NTU

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CAS: 100-97-0 EINECS: 202-905-8 Index number: 612-101-00-2 RTECS: MN 4725000	methenamine Flam. Sol. 2, H228; Skin Sens. 1, H317	2.5–5%
CAS: 50-00-0 EINECS: 200-001-8 Index number: 605-001-00-5 RTECS: LP 8925000	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; Flam. Liq. 4, H227	<0.1%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment in case of complaints.
· **Most important symptoms and effects, both acute and delayed**
allergic reactions
after inhalation:
mucosal irritations, cough, breathing difficulty
after swallowing:
gastric or intestinal disorders
pain
· **Danger:** risk of skin sensitization
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **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.
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Ammonia (NH_3)
Hydrogen cyanide (prussic acid HCN)
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
· **Advice for emergency responders:** Protective equipment: see section 8

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Trade name: T-CAL Standard 200 NTU / 800 NTU

(Contd. of page 2)

· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling**
· **Advice on safe handling:** No special precautions are necessary if used correctly.
· **Hygiene measures:**
Avoid contact with the skin.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
· **Information about storage in one common storage facility:** Store away from oxidizing agents.
· **Further information about storage conditions:**
Protect from frost.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
· **Recommended storage temperature:** 5°C - 25°C (41°F - 77°F)

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

8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

CAS: 100-97-0 methenamine	
TLV (USA)	Long-term value: NIC-1* mg/m³ *inhalable fraction,NIC-A4, NIC-DSEN
EV (Canada)	Short-term value: 2 mg/m³, 0.35 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
· **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.
· **Recommended filter device for short term use:** Filter P2
· **Protection of hands:** Wear gloves in case of breakage / leakage.
· **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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Wear safety glasses in case of breakage / leakage.

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Safety Data Sheet
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Trade name: T-CAL Standard 200 NTU / 800 NTU

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· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:** Avoid release to the environment.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
· **Form / Physical state:**	Suspension
· **Color:**	milky
· **Odor:**	Fish-like
· **Odor threshold:**	Not determined.
· **pH-value at 20°C (68°F):**	~9
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	The product is not combustible.
· **Ignition temperature:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Flammability or explosive limits:**	
· **Lower:**	Not applicable.
· **Upper:**	Not applicable.
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not determined.
· **Density at 20°C (68°F):**	~ 1 g/cm³ (~ 8.35 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility(ies)**	
· **Water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not applicable (mixture).
· **Viscosity:**	Not determined.
· **Kinematic:**	Not determined.
· **Other information**	
· **Solids content:**	5 - 10 %
· **Solvent content:**	
· **Organic solvents:**	< 0.1 %
· **Water:**	> 90 %

10 Stability and reactivity

· **Reactivity** see section "Possibility of hazardous reactions"
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!
Reacts with peroxides.
Reacts with oxidizing agents.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** see section 5

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:** Based on available data, the classification criteria are not met.

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Trade name: T-CAL Standard 200 NTU / 800 NTU

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· **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)

· **Primary irritant effect:**

· **on the skin:** Based on available data, the classification criteria are not met.
· **on the eye:** 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)

· **Sensitization:** May cause an allergic skin reaction.

· **Information on components:**

CAS: 100-97-0 methenamine		
Sensitization	OECD 406	(guinea pig: positive)
	Patch test (human)	(positive) (IUCLID)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
CAS: 50-00-0	formaldehyde	1

· **NTP (National Toxicology Program)**		
CAS: 50-00-0	formaldehyde	K

· **OSHA-Ca (Occupational Safety & Health Administration)**	
CAS: 50-00-0	formaldehyde

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:

· **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 (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.

· **Information on components:**
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 100-97-0 methenamine	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (IUCLID)

· **Additional toxicological information:**
Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

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Trade name: T-CAL Standard 200 NTU / 800 NTU

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 100-97-0 methenamine	
EC50	36 mg/l/48h (Daphnia magna) (IUCLID)
EC10	5 mg/l (fish)
LC50 (static)	41 mg/l/96h (bluegill) (US-EPA)

· **Bacterial toxicity:**	
CAS: 100-97-0 methenamine	
EC50 (static)	>5000 mg/l (Bacterial toxicity) (DIN 38412) (Merck, Vibrio fischeri)

· **Persistence and degradability**	
CAS: 100-97-0 methenamine	
OECD 302 C	39–47 % / 28 d (not readily biodegradable) (Modified MITI Test (II))

· **Bioaccumulative potential**	
CAS: 100-97-0 methenamine	
log Pow	-2.84 (.) (experimental) (IUCLID)

· **Mobility in soil** No further relevant information available.
· **Other adverse effects** Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	none
· **UN proper shipping name** · **DOT, IMDG, IATA**	none
· **Transport hazard class(es)** · **DOT, IMDG, IATA** · **Class**	none
· **Packing group** · **DOT, IMDG, IATA**	none
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.

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(Contd. of page 6)

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
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· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
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· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**

CAS: 50-00-0	formaldehyde

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 50-00-0	formaldehyde

· **Chemicals known to cause reproductive toxicity for females:**
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· **Chemicals known to cause developmental toxicity:**
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CAS: 100-97-0	methenamine
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· **New Jersey Special Hazardous Substance List:**

CAS: 50-00-0	formaldehyde	CA, CO, MU, F4

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CAS: 50-00-0	formaldehyde
CAS: 7783-20-2	ammonium sulphate

· **Pennsylvania Special Hazardous Substance List:**

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CAS: 50-00-0	formaldehyde	ES
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· **EPA (Environmental Protection Agency)**

CAS: 50-00-0	formaldehyde	B1

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 50-00-0	formaldehyde

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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(Contd. on page 8)

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H350 May cause cancer.

· **Date of preparation / last revision** 05/25/2021 / -

· **Abbreviations and acronyms:**
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