Tintometer[®] Group Water Testing



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

Printing date 14.11.2023 Version number 3 (replaces version 2) Revision: 14.11.2023

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

- · 1.1 Product identifier
- · Product name: Total Hardness Reagent (°dH) GH-1
- · Catalog number: 424841, 418563, 418411, 418512-1
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
- · Application of the substance / the preparation: Reagent for water analysis
- · 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

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

· 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



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.



Eye Irrit. 2 H319 Causes serious eye irritation.

- · 2.2 Label elements
- · Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

· Hazard pictograms



GHS05

· Signal word Warning

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Product name: Total Hardness Reagent (°dH) GH-1

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· Hazard statements

H290 May be corrosive to metals.

H319 Causes serious eye irritation.

Precautionary statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· 2.3 Other hazards

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

· 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.

SECTION 3: Composition/information on ingredients

- · 3.2 Mixtures
- · Description: aqueous solution

· Dangerous components:		
CAS: 110-97-4	1,1'-iminodipropan-2-ol	25–35%
EINECS: 203-820-9	♦ Eye Irrit. 2, H319	
Index No: 603-083-00-7		
CAS: 1336-21-6	ammonia	0.25-<1%
EINECS: 215-647-6	♦ Met. Corr.1, H290; Skin Corr. 1B, H314; ♦ Aquatic Acute 1, H400 (M=1);	
Index No: 007-001-01-2	♦ STOT SE 3, H335	
Reg.nr.: 01-2119488876-14-XXXX	Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	

· 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 wash with water and soap and rinse thoroughly.
- · After eye contact Rinse opened eye for several minutes (at least 15 min) under running water. Then 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:

irritations

after inhalation:

mucosal irritations, cough, shortness of breath

after swallowing:

sickness

vomiting

diarrhoea

pain

dizziness

^fatigue

· 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 Water, Carbon dioxide (CO₂), Foam, Fire-extinguishing powder
- For safety reasons unsuitable extinguishing agents

For this substance / mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Can form explosive gas-air mixtures.

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(Contd. of page 2) combustible

Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire:

nitrous gases

Nitrogen oxides (NOx)

Ammonia (NH₃)

Carbon monoxide (CO) and carbon dioxide (CO2)

- 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.

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.
- · 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:

Avoid contact with the eyes.

Take off immediately all contaminated clothing.

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 in cool location.

Do not use light alloy containers.

- Information about storage in one common storage facility: Store away from metals.
- Further information about storage conditions:

Protect from heat and direct sunlight.

Protect from the effects of light.

Protect from humidity and keep away from water.

- · Recommended storage temperature: 20°C +/- 5°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:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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· DNELs

Derived No Effect Level (DNEL)

CAS: 133	CAS: 1336-21-6 ammonia		
Oral	DNEL	6.8 mg/kg (Consumer / acute / systemic effects)	
		6.8 mg/kg (Consumer / long-term / systemic effects)	
Dermal	DNEL	6.8 mg/kg (Worker / acute / systemic effects)	
		6.8 mg/kg (Worker / long-term /systemic effects)	
		68 mg/kg (Consumer / acute / systemic effects)	
		68 mg/kg (Consumer / long-term / systemic effects)	
Inhalative	DNEL	36 mg/m³ (Worker / acute / local effects)	
		47.6 mg/m³ (Worker / acute / systemic effects)	
		14 mg/m³ (Worker / long-term / local effects)	
		47.6 mg/m³ (Worker / long-term /systemic effects)	
		7.2 mg/m³ (Consumer / acute / local effects)	
		23.8 mg/m³ (Consumer / acute / systemic effects)	
		2.8 mg/m³ (Consumer / long-term / local effects)	
		23.8 mg/m³ (Consumer / 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)

	CAS: 1336-21-6 ammonia		
PNEC	0.00011 mg/l (Marine water)		
	0.0068 mg/l (Aquatic intermittent release)		
	0.0011 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
- Hand protection

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 A
- · 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: Solution
- · Colour: Dark green

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Product name: Total Hardness Reagent (°dH) GH-1

· Odour: Like ammoniac

• **Odour threshold:** CAS 1336-21-6: 0.02 - 71 ppm NH₃

• Melting point/Freezing point:
• Boiling point or initial boiling point and boiling range Not determined.

• Boiling point or initial boiling point and boiling range Not determined.
• Flammability combustible

• Explosive properties: Product is not explosive. However, formation of explosive air/steam

mixtures is possible.

· Lower and upper explosion limit

Lower: 1.6 Vol % (CAS: 110-97-4 1,1'-iminodipropan-2-ol)
Upper: 8 Vol % (CAS: 110-97-4 1,1'-iminodipropan-2-ol)
Flash point: 135°C (CAS: 110-97-4 1,1'-iminodipropan-2-ol)

Auto-ignition temperature:
 Decomposition temperature:
 pH at 20°C
 Not determined.
 Not determined.
 ~11

· 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:
 Relative density:
 Relative gas density
 Particle characteristics
 1.05 g/cm³
 Not determined.
 Not determined.
 Not applicable (liquid).

9.2 Other information

· Information with regard to physical hazard classes

• Corrosive to metals May be corrosive to metals.

· Metals that are corroded by the substance or mixture Information on incompatible materials can be found in Sections 7 and

10.

· Other safety characteristics

Oxidising properties: none

Additional information

· Solids content: < 40 %

Solvent content:

• Organic solvents: < 20 % • Water: 40-50 %

SECTION 10: Stability and reactivity

- · 10.1 Reactivity Fumes can combine with air to form an explosive mixture.
- · 10.2 Chemical stability Stable at ambient temperature (room temperature).
- 10.3 Possibility of hazardous reactions

Corrosive action on metals

In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!

Reacts with oxidizing agents

Corrodes aluminium

Exothermic reaction with acids

- · 10.4 Conditions to avoid Strong heating (decomposition)
- · 10.5 Incompatible materials:

light metals

aluminium

zinc

non-ferrous metal

· 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.

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Product name: Total Hardness Reagent (°dH) GH-1

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		(+
· LD/LC5	0 valu	es that are relevant for classification:
CAS: 1	10-97-4	1,1'-iminodipropan-2-ol
Oral		4765 mg/kg (rat) (RTECS)
Dermal		8000 mg/kg (rabbit) (IUCLID)
CAS: 13	336-21	-6 ammonia
Oral	LDo	43 mg/kg (human) (29% solution, RTECS)

- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Causes serious eye irritation.
- · Information on components:

CAS 110-97-4, 1310-73-2: chronic: dermatitis

CAS: 110-97-4 1,1'-iminodipropan-2-ol		
Irritation of skin (OECD 404	(rabbit: no irritation)
Irritation of eyes (OECD 405	(rabbit: irritation)

- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · Information on components: CAS 110-97-4: Sensitizing effect by skin contact is possible by prolonged/repeated exposure.
- · 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:

 CAS: 110-97-4 1,1'-iminodipropan-2-ol

 OECD 471 (negative) (Bacterial Reverse Mutation Test Ames test)
 (NTP)
 - · 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:

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. CAS 110-97-4, 102-71-6 is skin-resorbing.

CAS: 1336-21-6 ammonia

. (source: GESTIS)

Main toxic effects:

acute: Irritant and caustic effect on eyes and skin, respiratory tract irritation/damage from released gas/aerosol.

Severe damage to the digestive tract if ingested

chronic: chronic irritation of the respiratory tract/ respiratory diseases

- · 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 toxicit	y:
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CAS:	110-97-4	1,1'-iminodi	propan-2-ol
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EC50 277.7 mg/l/48h (Daphnia magna)

(IUCLID)

IC50 266 mg/l/72h (Desmodesmus subspicatus)

LC50 >1000-2200 mg/l/96h (zebrafish) (OECD 203)

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Product name: Total Hardness Reagent (°dH) GH-1

CAS: 1336-21-6 ammonia

EC50 | 24 mg/l/48h (Daphnia magna) | 1.16 mg/l/48h (Daphnia pulex)

12.2 Persistence and degradability

CAS: 110-97-4 1,1'-iminodipropan-2-ol

0.53 mg/l/96h (rainbow trout)

OECD 302 B 99 % / 11 d (readily eliminated from water)

12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 110-97-4 1,1'-iminodipropan-2-ol

log Pow | -0.79 (.) (OECD 107)

CAS: 1336-21-6 ammonia

log Pow -1.38 (.) (experimental)

- 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

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies. 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.

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
- · Recommendation

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 07* discarded inorganic chemicals consisting of or containing hazardous substances

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

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN1719
· 14.2 UN proper shipping name · ADR	1719 CAUSTIC ALKALI LIQUID, N.O.S. (AMMONIA SOLUTION, SODIUM HYDROXIDE)
· IMDG, IATA	CAUSTIC ALKALI LIQUID, N.O.S. (AMMONIA SOLUTION, SODIUM HYDROXIDE)

- · 14.3 Transport hazard class(es)
- · ADR



Class 8 (C5) Corrosive substances.

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· Label 8

· IMDG, IATA



· Class 8 Corrosive substances.

· Label 8

· 14.4 Packing group

· ADR, IMDG, IATA

· 14.5 Environmental hazards: Not applicable.

• 14.6 Special precautions for user Warning: Corrosive substances.

Kemler Number:80EMS Number:F-A,S-BSegregation groups(SGG18) AlkalisStowage CategoryA

• Segregation Code SG22 Stow "away from" ammonium salts

SG35 Stow "separated from" SGG1-acids

· 14.7 Maritime transport in bulk according to IMO

instruments Not applicable.

· Transport/Additional information:

· ADR

Limited quantities (LQ) 5L

· Excepted quantities (EQ) Code: E1

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

· Transport category 3

Tunnel restriction code E

· IMDG

· Limited quantities (LQ) 5L · Excepted quantities (EQ) Code: E1

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

SECTION 15: Regulatory information

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

None of the ingredients is listed.

· Regulated poisons

None of the ingredients is listed.

· Reportable explosives precursors

None of the ingredients is listed.

Reportable poisons

The concentration of the substance is less than the stated mass percentage and is therefore of no concern:

CAS: 1336-21-6 ammonia 10%

- · Regulation (EU) 2019/1148 on the marketing and use of explosives precursors not regulated
- · 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:

CAS 102-71-6: c < 30% and therefore not relevant

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CAS: 102-71-6 Triethanolamine

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 ≥ 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 ≥ 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: 3
- 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

This Safety Data Sheets is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

- · Training hints Provide adequate information, instruction and training for operators.
- · Relevant phrases

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

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

Met. Corr.1: Corrosive to metals – Category 1 Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Irrit. 2: Serious eye damage/eye irritation - Category 2

STOT SE 3: Specific target organ toxicity (single exposure) - Category 3

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

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· Sources

Data arise from safety data sheets, reference works and literature. ECHA: European CHemicals Agency http://echa.europa.eu IUCLID (International Uniform Chemical Information Database)

·* Data compared to the previous version altered.

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