

according to the Globally Harmonized System

Buffer solution pH 2.00

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product name	Buffer solution pH 2.00
Synonyms	Buffer pH 2.00 (9852)
Product code	52118017, 51350002, 51350016, 30111134

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

Use of the Substance/Mixture	Technical buffer solution
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1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification	Mettler-Toledo GmbH Im Langacher 44 CH-8606 Greifensee Switzerland Tel: +41 22 567 53 22 Fax: +41 22 567 53 23 Email: ph.lab.support@mt.com
1.4. Emergency telephone number	(24-Hour-Number): GBK GmbH +49 6132 84463
Issuing date	30.11.2017
Version	GHS 2

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No. 1272/2008	Skin corrosion/irritation, Cat. 2, H315 Serious eye damage/eye irritation, Cat. 2, H319
Additional information	For the full text of the phrases mentioned in this Section, see Section 16.

2.2. Label elements

**Signal Word**

Warning

Hazard StatementsH315: Causes skin irritation.
H319: Causes serious eye irritation.**Precautionary statements**P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280c: Wear protective gloves/ eye protection/ face protection.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**Supplemental information**

None.

Product identifierCitric acid anhydrous, CAS-No. 77-92-9, EC-No. 201-069-1
Hydrogen chloride, CAS-No. 7647-01-0, EC-No. 231-595-7

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Components		CLP Classification	Product identifier
Deionised water	95% - 99%		CAS-No.: 7732-18-5 EC-No.: 231-791-2
Citric acid anhydrous	0.5% - 1%	Eye Irrit. 2 H319	CAS-No.: 77-92-9 EC-No.: 201-069-1
Hydrogen chloride	0.01% - 0.1%	Acute Tox. 3 H331, Skin Corr. 1A H314, Press. Gas H280	CAS-No.: 7647-01-0 EC-No.: 231-595-7 Index-No: 017-002-00-2

For the full text of the phrases mentioned in this Section, see Section 16.

Hazardous impurities

None known.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Move to fresh air in case of accidental inhalation of vapours or decomposition products. Consult a physician for severe cases.

Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. Consult an ophthalmologist.
Ingestion	Rinse mouth. Immediately give large quantities of water to drink. Induce vomiting if person is conscious. Obtain medical attention.
4.2. Most important symptoms and effects, both acute and delayed	Irritant effect: on eyes, on skin, on air passages. If you feel unwell, seek medical advice (show the label where possible). May be corrosive.
4.3. Indication of any immediate medical attention and special treatment needed	None known.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry extinguishing agent or carbon dioxide.
Extinguishing media which must not be used for safety reasons	None.

5.2. Special hazards arising from the substance or mixture

The product is not flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

5.3. Advice for firefighters

Special protective equipment for firefighters	Standard procedure for chemical fires. In the event of fire, wear self-contained breathing apparatus. Wear protective suit.
Specific methods	Water mist may be used to cool closed containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel	Ensure adequate ventilation. Use personal protective equipment. Sweep up to prevent slipping hazard. Avoid contact with skin and eyes. Do not breathe vapours/dust.
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Advice for emergency responders

Use personal protective equipment. Sweep up to prevent slipping hazard. Handle in accordance with good industrial hygiene and safety practice.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

6.4. Reference to other sections

See chapter 8 and 13.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Wear personal protective equipment. Practice care and caution to avoid skin contact and inhalation of vapours or mists if generated. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature in the original container.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limit(s)**

No data is available on the product itself.

Hydrogen chloride (CAS 7647-01-0)	
EU - Occupational Exposure (2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - TWAs	5 ppm TWA 8 mg/m3 TWA
EU - Occupational Exposure (2000/39/EC) - First List of Indicative Occupational Exposure Limit Values - STELs	10 ppm STEL 15 mg/m3 STEL
United Kingdom - Workplace Exposure Limits (WELs) - STELs	5 ppm STEL (aerosol mist and gas) 8 mg/m3 STEL (aerosol mist and gas)
United Kingdom - Workplace Exposure Limits (WELs) - TWAs	1 ppm TWA (aerosol mist and gas) 2 mg/m3 TWA (aerosol mist and gas)
U.S. - OSHA - Vacated PELs - Ceilings	5 ppm Ceiling 7 mg/m3 Ceiling
U.S. - OSHA - Final PELs - Ceiling Limits	5 ppm Ceiling 7 mg/m3 Ceiling

8.2. Exposure controls**Appropriate engineering controls**

Avoid contact with skin, eyes and clothing.

Personal protection equipment

Respiratory protection	No personal respiratory protective equipment normally required.
Hand protection	Gloves made of latex. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Break through time: > 4 h. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
Eye protection	Safety glasses with side-shields conforming to EN166.
Skin and body protection	Long sleeved clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Thermal hazards	No special measures required.
Environmental exposure controls	Prevent product from entering surface water or sewage.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	None.
Odour Threshold	Not determined.
pH:	2
Melting point/range:	Not determined.
Boiling point/range:	Not determined.
Flash point:	Not determined.
Evaporation Rate:	Not determined.
Flammability:	Not determined.
Explosion limits:	Not determined.
Vapour pressure:	Not determined.
Vapor density:	Not determined.
Relative density:	Not determined.
Water solubility:	completely miscible
Partition coefficient (n-octanol/water):	Not determined.
Autoignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Not determined.
Explosive properties:	not hazardous
Oxidising properties:	None

9.2. Other information

General Product Characteristics	No information available.
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SECTION 10: Stability and reactivity

10.1. Reactivity	No information available.
10.2. Chemical stability	Stable at normal conditions.
10.3. Possibility of hazardous reactions	No information available.
10.4. Conditions to avoid	Direct sources of heat.
10.5. Incompatible materials	Incompatible with strong bases and oxidizing agents.
10.6. Hazardous decomposition products	None reasonably foreseeable.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	No data is available on the product itself. Deionised water (CAS 7732-18-5) Oral LD50 Rat > 90 mL/kg (FOOD_JOURN) Citric acid anhydrous (CAS 77-92-9) Oral LD50 Rat = 3 g/kg (NLM_CIP) Hydrogen chloride (CAS 7647-01-0) Dermal LD50 Rabbit > 5010 mg/kg (JAPAN_GHS) Inhalation LC50 Rat = 1.68 mg/L 1 h(JAPAN_GHS) Oral LD50 Rat 238 - 277 mg/kg (JAPAN_GHS)
Skin corrosion/irritation	May cause irritation of the mucous membranes. May irritate skin. May be corrosive.
Serious eye damage/eye irritation	Moderate eye irritation. May be corrosive.
Respiratory / Skin Sensitisation	No data available.
Carcinogenicity	No data available.
Germ cell mutagenicity	No data available.
Reproductive toxicity	No data available.
Specific target organ toxicity (single exposure)	No data available.
Specific target organ toxicity (repeated exposure)	No data available.
Aspiration hazard	No data available.
Human experience	No data available.

Information on likely routes of exposure

dermal

Symptoms related to the physical, chemical and toxicological characteristics

May have irritant effect: on eyes, on skin, on air passages. May be corrosive. Inhaled corrosive substances can lead to a toxic oedema of the lungs.

SECTION 12: Ecological information**12.1. Toxicity**

No data is available on the product itself.

Citric acid anhydrous (CAS 77-92-9)

EU - Ecolabel (66/2010) -
Detergent Ingredient Database -
Anaerobic Degradation

Biodegradable under anaerobic conditions.

EU - Ecolabel (66/2010) -
Detergent Ingredient Database -
Aerobic Degradation

Readily biodegradable according to OECD guidelines.

Ecotoxicity - Freshwater Fish -
Acute Toxicity Data

LC50 96 h *Lepomis macrochirus* 1516 mg/L [static] (IUCLID)**12.2. Persistence and degradability**

Expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Waste from residues / unused products**

Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information**ADR/RID**

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

Further Information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulatory Information

The product is classified and labelled according to Regulation (EC) No. 1272/2008.

All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

Deionised water (CAS 7732-18-5)	
Inventory - United States - Section 8(b) Inventory (TSCA)	Present (ACTIVE)
U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical Data Reporting Rule - Fully Exempt Substances	Present (listed under Certain forms of natural gas and water)
Citric acid anhydrous (CAS 77-92-9)	
EU - Biocides (1062/2014) - Annex II Part 1 - Supported Substances	060 Product type 1 (201-069-1)
EU - Biocides (2007/565/EC) - Substances and Product-Types Not to Be Included in Annexes I, IA and IB to Directive 98/8/EC	Product type: 2 Product type: 3
EU - REACH (1907/2006) - List of Registered Substances	Present
Inventory - United States - Section 8(b) Inventory (TSCA)	Present (ACTIVE)
U.S. - FIFRA - Listing of Pesticide Chemicals (40 CFR 180)	Section number 180.950
U.S. - FIFRA - Inert Ingredients Eligible for FIFRA Section 25(b) Pesticide Products	Citric acid
U.S. - FIFRA - Active Ingredients Eligible for FIFRA Section 25(b) Pesticide Products	Citric acid
U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical Data Reporting Rule - Partially Exempt Substances	Chemical of low current interest
Hydrogen chloride (CAS 7647-01-0)	
EU - Narcotics (2015/1011) - Implementing Export Requirements - Annual Maximum Export Quantities for Exemption	100 kg
EU - Narcotics (111/2005) - Implementing Export Requirements - Scheduled Substances	Category 3 Substance ([2806 10 00])
EU - Biocides (98/8/EC) - Annex I - Active Substances - Minimum Purity	999 g/kg 2 (listed under EC Number 231-595-7)

EU - Biocides (98/8/EC) - Annex I - Active Substances - Specific Provisions	Member States shall assess, where relevant for the particular product, those uses or exposure scenarios and those risks to human populations and to environmental compartments that have not been representatively addressed in the Union level risk assessment. Member States shall ensure that authorisations of products for non-professional use are subject to the packaging being designed to minimize user exposure, unless it can be demonstrated in the application for product authorisation that risks for human health can be reduced to acceptable levels by other means (listed under EC Number 231-595-7)
EU - Biocides (98/8/EC) - Annex I - Active Substances - Product Type	Product type 2 (listed under EC Number 231-595-7)
EU - Biocides (528/2012/EU) - Active Substances	2 - Disinfectants and algacides not intended for direct application to humans or animals (Commission Directive 2012/16/EU)
EU - Biocides (98/8/EC) - Annex I - Active Substances - Expiry Dates	Expiration date: April 30, 2024 Product type 2 (listed under EC Number 231-595-7)
EU - REACH (1907/2006) - List of Registered Intermediates	Present ([231-595-7])
EU - REACH (1907/2006) - List of Registered Substances	Present
Inventory - United States - Section 8(b) Inventory (TSCA)	Present (ACTIVE)
UN (United Nations) - Convention on Illicit Traffic in Narcotics & Psychotropics - Table II Substances	Present
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs	5000 lb EPCRA RQ (gas only)
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs	500 lb TPQ (gas only)
U.S. - CERCLA/SARA - Section 313 - Emission Reporting	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities	5000 lb final RQ 2270 kg final RQ
U.S. - CPSC (Consumer Product Safety Commission) - Specially Regulated Substances	Add POISON to label, 16 CFR 1500.129 ($\geq 10\%$, free or chemically unneutralized)
U.S. - FIFRA - Listing of Pesticide Chemicals (40 CFR 180)	Section number 180.910
U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical Data Reporting Rule - Ineligible Substances	Section 4
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)	Category IIa
U.S. - California - Occupational Exposure Limits - PELs	0.3 ppm PEL 0.45 mg/m ³ PEL
U.S. - California - Occupational Exposure Limits - Ceilings	2 ppm Ceiling

15.2. Chemical safety assessment

Not required.



SECTION 16: Other information

Revision Note	Safety datasheet sections which have been updated: 2.
Key or legend to abbreviations and acronyms	CLP: Classification according to Regulation (EC) No. 1272/2008 (GHS)
Key literature references and sources for data	Information taken from reference works and the literature.
Classification procedure	Calculation method.
Full text of phrases referred to under sections 2 and 3	H280: Contains gas under pressure; may explode if heated. H314: Causes severe skin burns and eye damage. H315: Causes skin irritation. H319: Causes serious eye irritation. H331: Toxic if inhaled.
Instructions for use	Restricted to professional users.
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release. It is not to be considered a warranty or quality specification.

