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SAFETY DATA SHEET

according to Regulation (EU) No. 453/2010

Buffer Solution pH 2.00

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product code 51319056, 51340055, 51319010, 51319011**Synonyms** None.

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

Use of the Substance/Preparation Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification	Mettler-Toledo AG Process Analytics Im Hackacker 15 CH-8902 Urdorf Schweiz Tel: +41-44-729 62 11 Fax: +41-44-729 66 36 Email: process.hotline@mt.com
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1.4. Emergency telephone number +1-800-535 50 53 (Info Trac, 24 hrs)**Revision Date** 27.05.2013**Version** 6

2. Hazards identification

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

2.1. Classification of the substance or mixture

NFPA Ratings (Scale 0-4):

HEALTH=1

FLAMMABILITY=0

REACTIVITY=0

SPECIAL=0

HMIS Ratings (Scale: 0=Minimal 1=Slight 2=Moderate

3=Serious 4=Severe):

HEALTH=1

FLAMMABILITY=0

REACTIVITY=0

PROT. EQUIPMENT=B (Safety Glasses, Gloves)

Classification according to Regulation (EC) No. 1272/2008 (GHS/CLP)

Skin corrosion/irritation, Cat. 2, H315

Serious eye damage/eye irritation, Cat. 2, H319

Specific target organ toxicity (single exposure, inhalation), Cat. 3, H335

Additional information

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

2.2. Label elements



Signal Word

Warning

Hazard Statements

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory 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.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P332+P313: If skin irritation occurs: Get medical advice/ attention.

Additional advice

None.

GHS product identifier

Citric acid, CAS-No. 77-92-9

Hydrogen chloride anhydrous, CAS-No. 7647-01-0

2.3. Other hazards

No information available.

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3. Composition/information on ingredients

Chemical characterization Buffer solution.

Components		GHS Classification		CAS	REACH No.
Deionised water	95% - 99%				
Citric acid	0.5% - 1%	Eye Irrit. 2 H319		77-92-9	
Sodium chloride	0.1% - 0.5%			7647-14-5	
Hydrogen chloride anhydrous	0.01% - 0.1%	Acute Tox. 3 H331, Skin Corr. 1A H314, Press. Gas H280		7647-01-0	

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

Hazardous impurities None known.

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 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.

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5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use dry chemical, CO₂, water spray or alcohol foam.

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.

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.

Advice for emergency responders 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.

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.

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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)

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

Occupational exposure controls Avoid contact with skin, eyes and clothing.

Personal protection equipment

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Respirator with combination filter for vapour/particulate.

Hand protection The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Hydrofluoric acid-resistant and solvent-resistant gloves (gloves made of VITON*).

Eye protection Safety glasses with side-shields conforming to EN 166.

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.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form Liquid.
Colour Colourless.
Odour None.
Odour Threshold No information available.

pH: 2
Melting point/range: No information available.
Boiling point/range: No information available.
Flash point: No information available.

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Evaporation Rate:	No information available.
Flammability:	No information available.
Explosion limits:	No information available.
Vapour pressure:	No information available.
Vapor density:	No information available.
Relative density:	No information available.
Water solubility:	completely miscible
Partition coefficient (n-octanol/water):	No information available.
Autoignition temperature:	No information available.
Decomposition temperature:	No information available.
Viscosity:	No information available.
Combustion/explosion hazards:	not hazardous
Oxidizing properties:	None

9.2. Other information

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 acids and bases. Oxidizing agents. Reducing agents.
10.6. Hazardous decomposition products	None reasonably foreseeable.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	No data is available on the product itself. Citric acid (CAS 77-92-9) Oral LD50 Rat 3000 mg/kg Sodium chloride (CAS 7647-14-5) Dermal LD50 Rabbit 10 g/kg Inhalation LC50 Rat 42 g/m ³ 1 h Oral LD50 Rat 3 g/kg Hydrogen chloride (CAS 7647-01-0) Dermal LD50 Rabbit 5010 mg/kg Inhalation LC50 Rat 3124 ppm 1 h Oral LD50 Rat 700 mg/kg
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.

12. Ecological information

12.1. Toxicity No data is available on the product itself.

Citric acid (CAS 77-92-9)
Ecotoxicity - Freshwater Fish -
Acute Toxicity Data

96 h LC50 *Lepomis macrochirus*: 1516 mg/L [static]

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Ecotoxicity - Water Flea - Acute Toxicity Data	72 h EC50 Daphnia magna: 120 mg/L
Sodium chloride (CAS 7647-14-5)	
Ecotoxicity - Freshwater Fish - Acute Toxicity Data	96 h LC50 Lepomis macrochirus: 5560-6080 mg/L [flow-through] 96 h LC50 Lepomis macrochirus: 12946 mg/L [static] 96 h LC50 Pimephales promelas: 6020-7070 mg/L [static] 96 h LC50 Pimephales promelas: 7050 mg/L [semi-static] 96 h LC50 Pimephales promelas: 6420-6700 mg/L [static] 96 h LC50 Oncorhynchus mykiss: 4747-7824 mg/L [flow-through]
Ecotoxicity - Water Flea - Acute Toxicity Data	48 h EC50 Daphnia magna: 1000 mg/L
Ecotoxicity - Earthworm - Acute Toxicity Data	48 h EC50 Daphnia magna: 340.7 - 469.2 mg/L [Static] 48 h LC50 Eisenia foetida: 0.1 - 1 mg/cm2 [filter paper]
Hydrogen chloride (CAS 7647-01-0)	
Ecotoxicity - Freshwater Fish - Acute Toxicity Data	96 h LC50 Gambusia affinis: 282 mg/L [static]
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.

13. Disposal considerations

13.1. Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of as unused product.

14. Transport information

ADR/RID	Not required.
IMO	Not required.
ICAO	Not required.
Further Information	Not classified as dangerous in the meaning of transport regulations.

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15. Regulatory information

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

Regulatory Information	NFPA Ratings (Scale 0-4): HEALTH=1 FLAMMABILITY=0 REACTIVITY=0 SPECIAL=0 HMIS Ratings (Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe): HEALTH=1 FLAMMABILITY=0 REACTIVITY=0 PROT. EQUIPMENT=B (Safety Glasses, Gloves)
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15.2. Chemical safety assessment	Not required.
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16. Other information

Key or legend to abbreviations and acronyms	None.
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. H335: May cause respiratory irritation.
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.