

Material Safety Data Sheet

Information:

This PDF includes 4 different MSDS for the following items:

- Buffer Solution pH 4
- Buffer Solution pH 7
- Buffer Solution pH 10
- 1413 μ S standard solution (KCl solution)

Material Safety Data Sheet

1. Product & Company Identification

Product:	Buffer Solution pH 4
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	27.11.2018

Product Identifier

Product Name: Buffer Solution pH 4.01 ± 0.01

Chemical Name: pH buffer

Chemical Formula: Not applicable

Chemical Family: Not applicable

Hazard: Practically non-toxic.

2. Hazards Identification

Emergency Overview:

Appearance: Clear, Red

Liquid Odor: None

Potential Health Effects:

Eye Contact: No effects are anticipated

Skin Contact: No effects are anticipated

Skin Absorption: No effects are anticipated

Target Organs: Not applicable

Ingestion: No Effects

Classification of the substance or mixture: Not a hazardous substance or mixture.

GHS Label elements, including precautionary statements: Not a hazardous substance or mixture.

Hazards not otherwise classified (HNOC) or not covered by GHS: none

Classification:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Material Safety Data Sheet

3. Composition/Information On Ingredients

Potassium Hydrogen Phthalate

CAS No.: 877-24-7

Percent Range: 1.0 - 5.0

Percent Range Units: weight / volume

Hazard: May cause irritation.

Demineralized Water

CAS No.: 7732-18-5

Percent Range: > 95.0

Percent Range Units: weight / weight

Hazard: No effects anticipated.

Other components, each

CAS No.: Not applicable

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

4. First Aid Measure

Eye Contact: Flush eyes with water. Call physician if irritation develops.

Skin Contact (First Aid): Wash skin with soap and plenty of water.

Ingestion (First Aid): Give large quantities of water. Call physician immediately.

Inhalation: None required.

Material Safety Data Sheet

5. Firefighting Measures

Flammable Properties: Material will not burn.

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not applicable

Hazardous Combustion Products: Not applicable

Fire / Explosion Hazards: None reported

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure demand and full protective gear.

6. Accidental Release Measures

Containment Technique:

Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Absorb spill with inert material (e.g. dry sand, earth).

Clean-up Technique:

Absorb spilled liquid with non-reactive sorbent material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse.

7. Handling And Storage

Handling: Avoid contact with eyes. Wash thoroughly after handling.

Storage: Keep container tightly closed when not in use.

Flammability Class: Not applicable

8. Exposure Controls / Personal Equipment

Engineering Controls: Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment: None

Eye Protection: Safety glasses with top and side shields

Skin Protection: Disposable latex gloves

Inhalation Protection: Adequate ventilation

Precautionary Measures: Avoid contact with: eyes. Wash thoroughly after handling.

Material Safety Data Sheet

9. Physical / Chemical Properties

Appearance:	Red, clear, liquid
Physical State:	Liquid
Molecular Weight:	Not applicable
Odor:	None
pH:	4.00 at 25°C
Vapor Pressure:	Not determined
Vapor Density (air = 1):	Not determined
Flash Point:	Not applicable
Boiling Point:	100°C (212°F)
Melting Point:	0°C (32°F)
Specific Gravity (water = 1):	~1.0
Solubility:	Water: Soluble Acid: Soluble Other: Not determined
Metal Corrosivity:	Not determined
Explosion hazard:	Not explosive

10. Stability And Reactivity

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Extreme temperatures

Reactivity / Incompatibility: None reported

Hazardous Decomposition: None reported.

Material Safety Data Sheet

11. Toxicological Information

Product Toxicological Data: LD50: None reported

Acute toxicity: None reported

Skin Corrosion/Irritation: None reported

Serious Eye Damage/Irritation: None reported

Respiratory or Skin Sensitisation: None reported

Mutation Data: None reported

Reproductive Toxicity: None reported

Germ Cell Mutagenicity: None reported

Carcinogenicity: None reported

STOT-single Exposure: Not classified as hazardous for single dose

STOT-repeated Exposure: Not classified as hazardous for repeated dose

Aspiration Hazard: Not classified as hazardous by aspiration

12. Ecological Information

Product Ecological Information: No ecological data available for this product

Ingredient Ecological Information: No ecological data available for the ingredients of this product

Persistence and degradability: No data available

Bioaccumulation: No data available

Mobility: No data available

13. Disposal Considerations

EPA Waste ID Number: None

Special Instructions (Disposal): Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

Material Safety Data Sheet

14. Transport Information

D.O.T.:

DOT Proper Shipping Name: Not Currently Regulated

DOT Hazard Class: NA

DOT Subsidiary Risk: NA

DOT ID Number: NA

DOT Packing Group: NA

I.A.T.A.:

IATA Proper Shipping Name: Not Currently Regulated

IATA Hazard Class: NA

IATA Subsidiary Risk: NA

IATA ID Number: NA

IATA Packing Group: NA

I.C.A.O.:

ICAO Proper Shipping Name: Not Currently Regulated

ICAO Hazard Class: NA

ICAO Subsidiary Risk: NA

ICAO ID Number: NA

ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

I.M.O. Hazard Class: NA

I.M.O. Subsidiary Risk: NA

I.M.O. ID Number: NA

I.M.O. Packing Group: NA

Material Safety Data Sheet

15. Regulatory Information

U.S. Federal Regulations:

O.S.H.A.:

This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

EU Regulations:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

International Inventories:

EINECS/ELINCS: Complies.

TSCA: Complies.

DSL/NDSL: Complies.

IECSC: Complies.

KECL: Complies.

AICS: Complies.

PICCS: Complies.

Material Safety Data Sheet

16. Other Information

Intended Use: pH buffer solution for calibration.

References:

29 CFR 1900 - 1910 (Code of Federal Regulations - Labor) Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the REACH Regulation (EC) No 1272/2008 of the European Parliament and of the Council on CLP Regulation Commission Regulation (EU) No 453/2010 of the Council on the REACH Commission Regulation (EU) 2015/830 of the REACH

Legend:

NA - Not Applicable w/w - weight/weight

ND - Not Determined w/v - weight/volume

NV - Not Available v/v - volume/volume

CLP - European Regulation on classification, labelling and packaging of substances and mixtures

REACH - European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

USER RESPONSIBILITY:

Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

This information was compiled from current manufacturer's SDS's of the component parts of the product.

Disclaimer: The Manufacturer believes that the information contained in the Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.

Material Safety Data Sheet

1. Product & Company Identification

Product:	Buffer Solution pH 7
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	27.11.2018

Product Identifier

Product Name: Buffer Solution pH 7.00 ± 0.01

Chemical Name: pH buffer

Chemical Formula: Not applicable

Chemical Family: Not applicable

Hazard: Practically non-toxic.

2. Hazards Identification

Emergency Overview:

Appearance: Clear, Green

Liquid Odor: None

Potential Health Effects:

Eye Contact: No effects are anticipated

Skin Contact: No effects are anticipated

Skin Absorption: No effects are anticipated

Target Organs: Not applicable

Ingestion: No Effects

Classification of the substance or mixture: Not a hazardous substance or mixture.

GHS Label elements, including precautionary statements: Not a hazardous substance or mixture.

Hazards not otherwise classified (HNOC) or not covered by GHS: none

Classification:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Material Safety Data Sheet

3. Composition/Information On Ingredients

Potassium Phosphate, Monobasic

CAS No.: 7778-77-0

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: May cause irritation.

Sodium Phosphate, Dibasic

CAS No.: 7558-79-4

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: May cause irritation.

Demineralized Water

CAS No.: 7732-18-5

Percent Range: > 95.0

Percent Range Units: weight / weight

Hazard: No effects anticipated.

Other components, each

CAS No.: Not applicable

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

4. First Aid Measure

Eye Contact: Flush eyes with water. Call physician if irritation develops.

Skin Contact (First Aid): Wash skin with soap and plenty of water.

Ingestion (First Aid): Give large quantities of water. Call physician immediately.

Inhalation: None required.

Material Safety Data Sheet

5. Firefighting Measures

Flammable Properties: Material will not burn.

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not applicable

Hazardous Combustion Products: Not applicable

Fire / Explosion Hazards: None reported

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure demand and full protective gear.

6. Accidental Release Measures

Containment Technique:

Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Absorb spill with inert material (e.g. dry sand, earth).

Clean-up Technique:

Absorb spilled liquid with non-reactive sorbent material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse.

7. Handling And Storage

Handling: Avoid contact with eyes. Wash thoroughly after handling.

Storage: Keep container tightly closed when not in use.

Flammability Class: Not applicable

8. Exposure Controls / Personal Equipment

Engineering Controls: Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment: None

Eye Protection: Safety glasses with top and side shields

Skin Protection: Disposable latex gloves

Inhalation Protection: Adequate ventilation

Precautionary Measures: Avoid contact with: eyes. Wash thoroughly after handling.

Material Safety Data Sheet

9. Physical / Chemical Properties

Appearance:	Green, clear, liquid
Physical State:	Liquid
Molecular Weight:	Not applicable
Odor:	None
pH:	7.00 at 25°C
Vapor Pressure:	Not determined
Vapor Density (air = 1):	Not determined
Flash Point:	Not applicable
Boiling Point:	100°C (212°F)
Melting Point:	0°C (32°F)
Specific Gravity (water = 1):	~1.0
Solubility:	Water: Soluble Acid: Soluble Other: Not determined
Metal Corrosivity:	Not determined
Explosion hazard:	Not explosive

10. Stability And Reactivity

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Extreme temperatures

Reactivity / Incompatibility: None reported

Hazardous Decomposition: None reported.

Material Safety Data Sheet

11. Toxicological Information

Product Toxicological Data: LD50: None reported

Acute toxicity: None reported

Skin Corrosion/Irritation: None reported

Serious Eye Damage/Irritation: None reported

Respiratory or Skin Sensitisation: None reported

Mutation Data: None reported

Reproductive Toxicity: None reported

Germ Cell Mutagenicity: None reported

Carcinogenicity: None reported

STOT-single Exposure: Not classified as hazardous for single dose

STOT-repeated Exposure: Not classified as hazardous for repeated dose

Aspiration Hazard: Not classified as hazardous by aspiration

12. Ecological Information

Product Ecological Information: No ecological data available for this product

Ingredient Ecological Information: No ecological data available for the ingredients of this product

Persistence and degradability: No data available

Bioaccumulation: No data available

Mobility: No data available

13. Disposal Considerations

EPA Waste ID Number: None

Special Instructions (Disposal): Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

Material Safety Data Sheet

14. Transport Information

D.O.T.:

DOT Proper Shipping Name: Not Currently Regulated

DOT Hazard Class: NA

DOT Subsidiary Risk: NA

DOT ID Number: NA

DOT Packing Group: NA

I.A.T.A.:

IATA Proper Shipping Name: Not Currently Regulated

IATA Hazard Class: NA

IATA Subsidiary Risk: NA

IATA ID Number: NA

IATA Packing Group: NA

I.C.A.O.:

ICAO Proper Shipping Name: Not Currently Regulated

ICAO Hazard Class: NA

ICAO Subsidiary Risk: NA

ICAO ID Number: NA

ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

I.M.O. Hazard Class: NA

I.M.O. Subsidiary Risk: NA

I.M.O. ID Number: NA

I.M.O. Packing Group: NA

Material Safety Data Sheet

15. Regulatory Information

U.S. Federal Regulations:

O.S.H.A.:

This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

EU Regulations:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

International Inventories:

EINECS/ELINCS: Complies.

TSCA: Complies.

DSL/NDSL: Complies.

IECSC: Complies.

KECL: Complies.

AICS: Complies.

PICCS: Complies.

Material Safety Data Sheet

16. Other Information

Intended Use: pH buffer solution for calibration.

References:

29 CFR 1900 - 1910 (Code of Federal Regulations - Labor) Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the REACH Regulation (EC) No 1272/2008 of the European Parliament and of the Council on CLP Regulation Commission Regulation (EU) No 453/2010 of the Council on the REACH Commission Regulation (EU) 2015/830 of the REACH

Legend:

NA - Not Applicable w/w - weight/weight

ND - Not Determined w/v - weight/volume

NV - Not Available v/v - volume/volume

CLP - European Regulation on classification, labelling and packaging of substances and mixtures

REACH - European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

USER RESPONSIBILITY:

Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

This information was compiled from current manufacturer's SDS's of the component parts of the product.

Disclaimer: The Manufacturer believes that the information contained in the Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.

Material Safety Data Sheet

1. Product & Company Identification

Product:	Buffer Solution pH 10
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	27.11.2018

Product Identifier

Product Name: Buffer Solution pH 10.01 ± 0.01

Chemical Name: pH buffer

Chemical Formula: Not applicable

Chemical Family: Not applicable

Hazard: Practically non-toxic.

2. Hazards Identification

Emergency Overview:

Appearance: Clear, Blue

Liquid Odor: None

Potential Health Effects:

Eye Contact: No effects are anticipated

Skin Contact: No effects are anticipated

Skin Absorption: No effects are anticipated

Target Organs: Not applicable

Ingestion: No Effects

Classification of the substance or mixture: Not a hazardous substance or mixture.

GHS Label elements, including precautionary statements: Not a hazardous substance or mixture.

Hazards not otherwise classified (HNOC) or not covered by GHS: none

Classification:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Material Safety Data Sheet

3. Composition/Information On Ingredients

Sodium Carbonate

CAS No.: 497-19-8

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: Causes moderate eye irritation

Sodium Bicarbonate (Sodium hydrogen carbonate)

CAS No.: 144-55-8

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: May cause irritation.

Demineralized Water

CAS No.: 7732-18-5

Percent Range: > 99.0

Percent Range Units: weight / weight

Hazard: No effects anticipated.

Other components, each

CAS No.: Not applicable

Percent Range: < 1.0

Percent Range Units: weight / weight

Hazard: Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

4. First Aid Measure

Eye Contact: Flush eyes with water. Call physician if irritation develops.

Skin Contact (First Aid): Wash skin with soap and plenty of water.

Ingestion (First Aid): Give large quantities of water. Call physician immediately.

Inhalation: None required.

Material Safety Data Sheet

5. Firefighting Measures

Flammable Properties: Material will not burn.

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not applicable

Hazardous Combustion Products: Not applicable

Fire / Explosion Hazards: None reported

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure demand and full protective gear.

6. Accidental Release Measures

Containment Technique:

Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Absorb spill with inert material (e.g. dry sand, earth).

Clean-up Technique:

Absorb spilled liquid with non-reactive sorbent material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse.

7. Handling And Storage

Handling: Avoid contact with eyes. Wash thoroughly after handling.

Storage: Keep container tightly closed when not in use.

Flammability Class: Not applicable

8. Exposure Controls / Personal Equipment

Engineering Controls: Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment: None

Eye Protection: safety glasses with top and side shields

Skin Protection: disposable latex gloves

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes. Wash thoroughly after handling.

Material Safety Data Sheet

9. Physical / Chemical Properties

Appearance:	Blue, clear, liquid
Physical State:	Liquid
Molecular Weight:	Not applicable
Odor:	None
pH:	10.01 at 25°C
Vapor Pressure:	Not determined
Vapor Density (air = 1):	Not determined
Flash Point:	Not applicable
Boiling Point:	100°C (212°F)
Melting Point:	0°C (32°F)
Specific Gravity (water = 1):	~1.0
Solubility:	Water: Soluble Acid: Soluble Other: Not determined
Metal Corrosivity:	Not determined
Explosion hazard:	Not explosive

10. Stability And Reactivity

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Extreme temperatures

Reactivity / Incompatibility: None reported

Hazardous Decomposition: None reported.

Material Safety Data Sheet

11. Toxicological Information

Product Toxicological Data: LD50: None reported

Acute toxicity: None reported

Skin Corrosion/Irritation: None reported

Serious Eye Damage/Irritation: None reported

Respiratory or Skin Sensitisation: None reported

Mutation Data: None reported

Reproductive Toxicity: None reported

Germ Cell Mutagenicity: None reported

Carcinogenicity: None reported

STOT-single Exposure: Not classified as hazardous for single dose

STOT-repeated Exposure: Not classified as hazardous for repeated dose

Aspiration Hazard: Not classified as hazardous by aspiration

12. Ecological Information

Product Ecological Information: No ecological data available for this product

Ingredient Ecological Information: No ecological data available for the ingredients of this product

Persistence and degradability: No data available

Bioaccumulation: No data available

Mobility: No data available

13. Disposal Considerations

EPA Waste ID Number: None

Special Instructions (Disposal): Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

Material Safety Data Sheet

14. Transport Information

D.O.T.:

DOT Proper Shipping Name: Not Currently Regulated

DOT Hazard Class: NA

DOT Subsidiary Risk: NA

DOT ID Number: NA

DOT Packing Group: NA

I.A.T.A.:

IATA Proper Shipping Name: Not Currently Regulated

IATA Hazard Class: NA

IATA Subsidiary Risk: NA

IATA ID Number: NA

IATA Packing Group: NA

I.C.A.O.:

ICAO Proper Shipping Name: Not Currently Regulated

ICAO Hazard Class: NA

ICAO Subsidiary Risk: NA

ICAO ID Number: NA

ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

I.M.O. Hazard Class: NA

I.M.O. Subsidiary Risk: NA

I.M.O. ID Number: NA

I.M.O. Packing Group: NA

Material Safety Data Sheet

15. Regulatory Information

U.S. Federal Regulations:

O.S.H.A.:

This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

EU Regulations:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

International Inventories:

EINECS/ELINCS: Complies.

TSCA: Complies.

DSL/NDSL: Complies.

IECSC: Complies.

KECL: Complies.

AICS: Complies.

PICCS: Complies.

Material Safety Data Sheet

16. Other Information

Intended Use: pH buffer solution for calibration.

References:

29 CFR 1900 - 1910 (Code of Federal Regulations - Labor) Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the REACH Regulation (EC) No 1272/2008 of the European Parliament and of the Council on CLP Regulation Commission Regulation (EU) No 453/2010 of the Council on the REACH Commission Regulation (EU) 2015/830 of the REACH

Legend:

NA - Not Applicable w/w - weight/weight

ND - Not Determined w/v - weight/volume

NV - Not Available v/v - volume/volume

CLP - European Regulation on classification, labelling and packaging of substances and mixtures

REACH - European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

USER RESPONSIBILITY:

Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

This information was compiled from current manufacturer's SDS's of the component parts of the product.

Disclaimer: The Manufacturer believes that the information contained in the Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.

Material Safety Data Sheet

1. Product & Company Identification

Product:	1413 µS standard solution (KCl solution)
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	27.11.2018

Product Identifier

Product Name: 1413 µS standard solution

Chemical Name: KCl solution

Chemical Formula: Not applicable

Chemical Family: Not applicable

Hazard: Practically non-toxic.

2. Hazard Identification

Emergency Overview:

Appearance: Clear

Liquid Odor: None

Potential Health Effects:

Eye Contact: No effects are anticipated

Skin Contact: No effects are anticipated

Skin Absorption: No effects are anticipated

Target Organs: Not applicable

Ingestion: No Effects

Classification of the substance or mixture: Not a hazardous substance or mixture.

GHS Label elements, including precautionary statements: Not a hazardous substance or mixture.

Hazards not otherwise classified (HNOC) or not covered by GHS: none

Classification:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Material Safety Data Sheet

3. Composition/Information On Ingredients

Potassium Chloride

CAS No.: 7440-09-7

Percent Range: < 0.1

Percent Range Units: weight / weight

Hazard: May cause irritation.

Demineralized Water

CAS No.: 7732-18-5

Percent Range: > 99.8

Percent Range Units: weight / weight

Hazard: No effects anticipated.

Other components. each

CAS No.: Not applicable

Percent Range: < 0.1

Percent Range Units: weight / weight

Hazard: Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

4. First Aid Measure

Eye Contact: Flush eyes with water. Call physician if irritation develops.

Skin Contact (First Aid): Wash skin with soap and plenty of water.

Ingestion (First Aid): Give large quantities of water. Call physician immediately.

Inhalation: None required.

Material Safety Data Sheet

5. Firefighting Measures

Flammable Properties: Material will not burn.

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not applicable

Hazardous Combustion Products: Not applicable

Fire / Explosion Hazards: None reported

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure demand and full protective gear.

6. Accidental Release Measures

Containment Technique:

Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Absorb spill with inert material (e.g. dry sand, earth).

Clean-up Technique:

Absorb spilled liquid with non-reactive sorbent material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse.

7. Handling And Storage

Handling: Avoid contact with eyes. Wash thoroughly after handling.

Storage: Keep container tightly closed when not in use.

Flammability Class: Not applicable

8. Exposure Controls / Personal Equipment

Engineering Controls: Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment: None

Eye Protection: safety glasses with top and side shields

Skin Protection: disposable latex gloves

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes. Wash thoroughly after handling.

Material Safety Data Sheet

9. Physical / Chemical Properties

Appearance:	Clear, liquid
Physical State:	Liquid
Molecular Weight:	Not applicable
Odor:	None
Conductivity:	1413 μ S at 25°C
Vapor Pressure:	Not determined
Vapor Density (air = 1):	Not determined
Flash Point:	Not applicable
Boiling Point:	100°C (212°F)
Melting Point:	0°C (32°F)
Specific Gravity (water = 1):	~1.0
Solubility:	Water: Soluble Acid: Soluble Other: Not determined
Metal Corrosivity:	Not determined
Explosion hazard:	Not explosive

10. Stability And Reactivity

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Extreme temperatures

Reactivity / Incompatibility: None reported

Hazardous Decomposition: None reported.

Material Safety Data Sheet

11. Toxicological Information

Product Toxicological Data: LD50: None reported

Acute toxicity: None reported

Skin Corrosion/Irritation: None reported

Serious Eye Damage/Irritation: None reported

Respiratory or Skin Sensitisation: None reported

Mutation Data: None reported

Reproductive Toxicity: None reported

Germ Cell Mutagenicity: None reported

Carcinogenicity: None reported

STOT-single Exposure: Not classified as hazardous for single dose

STOT-repeated Exposure: Not classified as hazardous for repeated dose

Aspiration Hazard: Not classified as hazardous by aspiration

12. Ecological Information

Product Ecological Information: No ecological data available for this product

Ingredient Ecological Information: No ecological data available for the ingredients of this product

Persistence and degradability: No data available

Bioaccumulation: No data available

Mobility: No data available

13. Disposal Considerations

EPA Waste ID Number: None

Special Instructions (Disposal): Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

Empty Containers: Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

Material Safety Data Sheet

14. Transport Information

D.O.T.:

DOT Proper Shipping Name: Not Currently Regulated

DOT Hazard Class: NA

DOT Subsidiary Risk: NA

DOT ID Number: NA

DOT Packing Group: NA

I.A.T.A.:

IATA Proper Shipping Name: Not Currently Regulated

IATA Hazard Class: NA

IATA Subsidiary Risk: NA

IATA ID Number: NA

IATA Packing Group: NA

I.C.A.O.:

ICAO Proper Shipping Name: Not Currently Regulated

ICAO Hazard Class: NA

ICAO Subsidiary Risk: NA

ICAO ID Number: NA

ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

I.M.O. Hazard Class: NA

I.M.O. Subsidiary Risk: NA

I.M.O. ID Number: NA

I.M.O. Packing Group: NA

Material Safety Data Sheet

15. Regulatory Information

U.S. Federal Regulations:

O.S.H.A.:

This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

EU Regulations:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Text with EEA relevance)

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance)

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Text with EEA relevance)

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

International Inventories:

EINECS/ELINCS: Complies.

TSCA: Complies.

DSL/NDSL: Complies.

IECSC: Complies.

KECL: Complies.

AICS: Complies.

PICCS: Complies.

Material Safety Data Sheet

16. Other Information

Intended Use: Conductivity standard solution for calibration.

References:

29 CFR 1900 - 1910 (Code of Federal Regulations - Labor) Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the REACH Regulation (EC) No 1272/2008 of the European Parliament and of the Council on CLP Regulation Commission Regulation (EU) No 453/2010 of the Council on the REACH Commission Regulation (EU) 2015/830 of the REACH

Legend:

NA - Not Applicable w/w - weight/weight

ND - Not Determined w/v - weight/volume

NV - Not Available v/v - volume/volume

CLP - European Regulation on classification, labelling and packaging of substances and mixtures

REACH - European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

USER RESPONSIBILITY:

Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

This information was compiled from current manufacturer's SDS's of the component parts of the product.

Disclaimer: The Manufacturer believes that the information contained in the Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.