



WTW Safety Data Sheet
According to EC Directives 91/155/EEC

Manufacturer:

WTW Wissenschaftlich-Technische Werkstätten GmbH, Dr.-Karl-Slevogt-Straße 1, D-82362 Weilheim, Germany, Tel.: +49(0)881 183-0, Fax.: +49(0)881 183-420

Emergency telephone:
(001)-703-527-3887

The product with the number 109 415 contains the components 109 110, 109 120, 109 130 109 648 and 109 702..
For Safety Data Sheets look at these numbers.

WTW Safety Data Sheet
According to EC Directives 91/155/EEC

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

Product name:

pH 4.006 Standard Buffer

Ord. No.: 109 110

Model: PL 4

Manufacturer:

WTW Wissenschaftlich-Technische Werkstätten GmbH, Dr.-Karl-Slevogt-Straße 1, D-82362 Weilheim
Germany, Tel.: +49(0)881 183-0, Fax.: +49(0)881 183-420

Emergency telephone:
(001)-703-527-3887

2. Composition/information on ingredients

Chemical characterization: Aqueous saline solution

Ingredients: Potassium hydrogen phthalate

Hazard symbols: No hazardous product

R-phrases: /

Content: 1 %

CAS-No.: 877-24-7

EINECS-No.: 212-889-4

EG-No.: 212-889-4

3. Hazards identification

No hazardous product.

4. First aid measures

After inhalation: Fresh air

After skin contact: Wash off with plenty of water.
Remove contaminated clothing.

After eye contact: Rinse out with plenty of water
with the eyelid held wide open.

After ingestion: Make injured person drink plenty of water,
induce vomiting, summon doctor.

WTW Safety Data Sheet

Identification of the substance/preparation

pH 4.006 Standard Buffer

5. Fire-fighting measures

Suitable extinguishing media: To suit environment.

Unsuitable extinguishing media: No information available.

Special risks: None

Other information: Non combustible

6. Accidental release measures

Personal-related precautionary measures: None

Environmental-protection measures: None

Procedures for cleaning/absorption: Take up with liquid-absorbent material.
Forward for disposal.
Clean up affected area with water.

7. Handling and storage

Handling: No further requirements.

Storage: Store tightly closed.

8. Exposure control/personal protection

Specific control parameters: None

Personal protective equipment

Respiratory protection: Required when dusts are generated.

Eye protection: Protective glasses

Hand protection: Gloves (nitrile rubber)

Industrial hygiene: Wash hands and face after working with solution.
Change contaminated clothing.

WTW Safety Data Sheet

Identification of the substance/preparation

pH 4.006 Standard Buffer

9. Physical and chemical properties

<i>Form:</i> Liquid	<i>Colour:</i> Colourless	<i>Odour:</i> Odourless
<i>pH-value</i>	4,006 at 25°C	
<i>Melting temperature:</i>	°C	
<i>Boiling temperature:</i>	about 100°C	
<i>Ignition temperature:</i>	°C	
<i>Flash point:</i>	°C	
<i>Explosion limite lower:</i>	/	
<i> upper:</i>	/	
<i>Density:</i>	/	
<i>Solubility in water:</i>	miscible	
<i>Thermal decomposition:</i>	/	

10. Stability and reactivity

<i>Conditions to be avoided:</i>	No information available.
<i>Substances to be avoided:</i>	No information available.
<i>Hazardous decomposition products:</i>	No information available.
<i>Further information:</i>	No information available.

11. Toxicological information

<i>Acute toxicity:</i>	Quantitative data on the toxicity are not available.
<i>Further toxicological information:</i>	The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

<i>Ecotoxic effects:</i>	No ecological problems are to be expected when the product is handled and used with due care and attention.
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WTW Safety Data Sheet

Identification of the substance/preparation

pH 4.006 Standard Buffer

13. Disposal considerations

Products: There are no uniform regulations for the disposal of chemicals or residues. The disposal is regulated through corresponding regional laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

Packaging: Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, noncontaminated packaging may be treated like household waste or recycled.

14. Transport information

Not subject to the transport regulations.

15. Regulatory information

Labelling according to EC directives

Symbol: No hazardous product

R-phrases: /

S-phrases: /

German regulations

Water pollution class; nonpolluting solution

Storage class VCI: 12

Regulation on combustible liquids; VbF: Non combustible

Other regulations: None

16. Other information

Date of issue: 15.07.2006

Supersedes edition of 22.01.2004

Reason for alteration: General update

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

WTW Safety Data Sheet
According to EC Directives 91/155/EEC

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

Product name:

pH 6.865 Standard Buffer

Ord. No.: 109 120

Model: PL 7

Manufacturer:

WTW Wissenschaftlich-Technische Werkstätten GmbH, Dr.-Karl-Slevogt-Straße 1, D-82362 Weilheim, Germany, Tel.: +49(0)881 183-0, Fax.: +49(0)881 183-420

Emergency telephone:
(001)-703-527-3887

2. Composition/information on ingredients

Chemical characterization: Aqueous saline solution

Ingredients: Mixture of potassium dihydrogen phosphate and di-sodium hydrogen phosphate dihydrate

Potassium dihydrogen phosphate	di-Sodium hydrogen phosphate dihydrate
<i>Hazard symbols:</i> No hazardous product.	<i>Hazard symbols:</i> No hazardous product
<i>R-phrases:</i> /	<i>R-phrases:</i> /
<i>Content:</i> 0,34 %	<i>Content:</i> 0,45 %
<i>CAS-No.:</i> 7778-77-0	<i>CAS-No.:</i> 10028-24-7
<i>EINECS-No.:</i> 231-913-4	<i>EINECS-No.:</i> 231-448-7
<i>EG-No.:</i> 231-913-4	<i>EG-No.:</i> 231-448-7

3. Hazards identification

No hazardous product.

4. First aid measures

After inhalation: Fresh air

After skin contact: Wash off with water. Remove contaminated clothing.

After eye contact: Rinse out with plenty of water with the eyelid held wide open.

After ingestion: Make injured person drink plenty of water, induce vomiting, immediately summon doctor.

WTW Safety Data Sheet

Identification of the substance/preparation

pH 6.865 Standard Buffer

5. Fire-fighting measures

<i>Suitable extinguishing media:</i>	To suit environment.
<i>Unsuitable extinguishing media:</i>	No information available.
<i>Special risks:</i>	None
<i>Other information:</i>	Non combustible

6. Accidental release measures

<i>Personal-related precautionary measures:</i>	None
<i>Environmental-protection measures:</i>	None
<i>Procedures for cleaning/absorption:</i>	Take up with liquid-absorbent material. Forward for disposal. Clean up affected area with water.

7. Handling and storage

<i>Handling:</i>	No further requirements
<i>Storage:</i>	Store tightly closed.

8. Exposure control/personal protection

<i>Specific control parameters:</i>	None
Personal protective equipment	
<i>Respiratory protection:</i>	Required when dusts are generated.
<i>Eye protection:</i>	Protective glasses
<i>Hand protection:</i>	Gloves (nitrile rubber)
<i>Industrial hygiene:</i>	Wash hands after working with substance. Change contaminated clothing.

WTW Safety Data Sheet

Identification of the substance/preparation

pH 6.865 Standard Buffer

9. Physical and chemical properties

<i>Form:</i> Liquid	<i>Colour:</i> Colourless	<i>Odour:</i> Odourless
<i>pH-value</i>	6,865 at 25°C	
<i>Melting temperature:</i>	°C	
<i>Boiling temperature:</i>	about 100°C	
<i>Ignition temperature:</i>	°C	
<i>Flash point:</i>	°C	
<i>Explosion limite lower:</i>	/	
<i> upper:</i>	/	
<i>Density:</i>	/	
<i>Solubility in water:</i>	miscible	
<i>Thermal decomposition:</i>	/	

10. Stability and reactivity

<i>Conditions to be avoided:</i>	No information available
<i>Substances to be avoided:</i>	No information available
<i>Hazardous decomposition products:</i>	No information available
<i>Further information:</i>	No information available

11. Toxicological information

<i>Acute toxicity:</i>	No information available.
<i>Further toxicological information:</i>	No toxic effect are to be expected when the product is handled appropriately. After ingestion of large amounts: possible symptoms: nausea, vomiting, gastric pain, diarrhoe and general feeling of sickness. After eye contact: irritations.

12. Ecological information

<i>Ecotoxic effects:</i>	No ecological problems are to be expected when the product is handled and used with due care and attention. Depending on the concentration phosphorous compounds may contribute to the eutrophication of drinking- water-supplies.
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WTW Safety Data Sheet
Identification of the substance/preparation

pH 6.865 Standard Buffer

13. Disposal considerations

Products: There are no uniform regulations for the disposal of chemicals or residues. The disposal is regulated through corresponding regional laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

Packaging: Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, noncontaminated packaging may be treated like household waste or recycled.

14. Transport information

Not subject to transport regulations.

15. Regulatory information

Labelling according to EC directives

Symbol: No hazardous product
R-phrases: /
S-phrases: /

German regulations

Water pollution class; nonpolluting solution.
Storage class VCI: 12
Regulation on combustible liquids; VbF: Non combustible
Other regulations: None

16. Other information

Date of issue: 15.07.2006
Supersedes edition of 22.01.2004
Reason for alteration: General update

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

WTW Safety Data Sheet
According to EC Directives 91/155/EEC

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

Product name:

pH 9.180 Standard Buffer

Ord. No.: 109 130

Model: PL 9

Manufacturer:

WTW Wissenschaftlich-Technische Werkstätten GmbH, Dr.-Karl-Slevogt-Straße 1, D-82362 Weilheim, Germany, Tel.: +49(0)881 183-0, Fax.: +49(0)881 183-420

Emergency telephone:
(001)-703-527-3887

2. Composition/information on ingredients

Chemical characterization: Aqueous saline solution

Hazardous ingredients: di-Sodium tetraborate decahydrate

Hazard symbols: No hazardous product

R-phrases: /

Content: 0,4 %

CAS-No.: 1303-96-4

EINECS-No.: 215-540-4

EG-No.: 215-540-4

3. Hazards identification

No hazardous product.

4. First aid measures

After inhalation: Fresh air

After skin contact: Wash off with plenty of water.

Remove contaminated clothing.

After eye contact: Rinse out with plenty of water with the eyelid

held wide open. Summon eye specialist if necessary.

After ingestion: Make injured person drink plenty of water,

induce vomiting, summon doctor.

WTW Safety Data Sheet

Identification of the substance/preparation

pH 9.180 Standard Buffer

5. Fire-fighting measures

Suitable extinguishing media: Water , CO2, foam, powder

Unsuitable extinguishing media: No information available

Special risks: None

Other information: Non-combustible

6. Accidental release measures

Personal-related precautionary measures: Avoid generation of vapours and aerosols.
Do not inhale vapours and aerosols.

Environmental-protection measures: None

Procedures for cleaning/absorption: Clean up affected area with water.

7. Handling and storage

Handling: No further requirements.

Storage: Store tightly closed.

8. Exposure control/personal protection

Specific control parameters: None

Personal protective equipment

Respiratory protection: Required when vapours and aerosols are generated.

Eye protection: Protective glasses

Hand protection: Gloves (nitrile rubber)

Industrial hygiene: Wash hands and face after working with solution.

WTW Safety Data Sheet

Identification of the substance/preparation

pH 9.180 Standard Buffer

9. Physical and chemical properties

<i>Form:</i> Liquid	<i>Colour:</i> Colourless	<i>Odour:</i> Odourless
<i>pH-value</i>	9,180 at 25°C	
<i>Melting temperature:</i>	°C	
<i>Boiling temperature:</i>	about 100°C	
<i>Ignition temperature:</i>	°C	
<i>Flash point:</i>	°C	
<i>Explosion limite lower:</i>	/	
<i> upper:</i>	/	
<i>Density:</i>	/	
<i>Solubility in water:</i>	miscible	
<i>Thermal decomposition:</i>	/	

10. Stability and reactivity

<i>Conditions to be avoided:</i>	No information available
<i>Substances to be avoided:</i>	No information available
<i>Hazardous decomposition products:</i>	No information available
<i>Further information:</i>	None

11. Toxicological information

<i>Acute toxicity:</i>	LD 50 (oral, rat): 2660 mg/kg LDLo (oral, human): 709 mg/kg
<i>Further toxicological information:</i>	Absorption via gastrointestinal tract, skin, mucous membranes. The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders. Further hazardous properties cannot be excluded. The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

<i>Ecotoxic effects:</i>	Biological effects: Herbicidal effect, trace element, fertilizing effect possible. Boric acid developing as a result of hydrolysis. Toxic for aquatic organisms. Do not allow to enter drinking water supplies, waste water, or soil.
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WTW Safety Data Sheet

Identification of the substance/preparation

pH 9.180 Standard Buffer

13. Disposal considerations

Products: There are no uniform regulations for the disposal of chemicals or residues. The disposal is regulated through corresponding regional laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

Packaging: Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, noncontaminated packaging may be treated like household waste or recycled.

14. Transport information

Not subject to transport regulations.

15. Regulatory information

Labelling according to EC directives

Symbol: No hazardous product

R-phrases: /

S-phrases: /

German regulations

Water pollution class; nonpolluting solution

Storage class VCI: 12

Regulation on combustible liquids; VbF: Non-combustible

Other regulations: None

16. Other information

Date of issue: 15.07.2006

Supersedes edition of 22.01.2004

Reason for alteration: General update

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

WTW Safety Data Sheet
According to EC Directives 91/155/EEC

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

Product name:

Pepsin Cleaning Solution

Ord. No.: 109 648

Model: PEP/pH

Manufacturer:

WTW Wissenschaftlich-Technische Werkstätten GmbH, Dr.-Karl-Slevogt-Straße 1, D-82362 Weilheim, Germany, Tel.: +49(0)881 183-0, Fax.: +49(0)881 183-420

Emergency telephone:
(001)-703-527-3887

2. Composition/information on ingredients

Chemical characterization: Acidic solution

Hazardous ingredients: Hydrochloric acid

Hazard symbols: Corrosive (C)

R-phrases: 34-37

Content: 0,4 %

CAS-No.: 7647-01-0

EC-Index-No.: 017-002-01-X

3. Hazards identification

No hazardous product.

4. First aid measures

After inhalation: Fresh air

After skin contact: Wash off with plenty of water. Change contaminated clothing.

After eye contact: Rinse out with plenty of water with the eyelid held wide open.

After ingestion: Make injured person drink plenty of water. Consult doctor if feeling unwell.

WTW Safety Data Sheet

Identification of the substance/preparation

Pepsin Cleaning Solution

5. Fire-fighting measures

<i>Suitable extinguishing media:</i>	To suit environment.
<i>Unsuitable extinguishing media:</i>	No information available.
<i>Special risks:</i>	Development of hazardous gases possible in the event of fire: Hydrogen chloride and chlorine Do not stay in dangerous zone without chemical protection clothing and selfcontained breathing apparatus.
<i>Other information:</i>	Non combustible

6. Accidental release measures

<i>Personal-related precautionary measures:</i>	Do not inhale vapours.
<i>Environmental-protection measures:</i>	Do not allow to enter sewerage system.
<i>Procedures for cleaning/absorption:</i>	Take up with liquid-absorbent material. Forward for disposal. Clean up affected area with water.

7. Handling and storage

<i>Handling:</i>	No further requirements
<i>Storage:</i>	Store tightly closed at room temperature in a well-ventilated place. No metal container.

8. Exposure control/personal protection

<i>Specific control parameters:</i>	MAK (Germany): 5 ml/m ³ or 7 mg/m ³ hydrogen chloride. Class. pregnancy: C
Personal protective equipment	
<i>Respiratory protection:</i>	Required when vapours/aerosols are generated.
<i>Eye protection:</i>	Protective glasses
<i>Hand protection:</i>	Gloves (nitrile rubber)
<i>Industrial hygiene:</i>	Change contaminated clothing. Wash hands and face after working with substance.

WTW Safety Data Sheet

Identification of the substance/preparation

Pepsin Cleaning Solution

9. Physical and chemical properties

<i>Form:</i> Liquid	<i>Colour:</i> Colourless	<i>Odour:</i> Odourless
<i>pH-value</i>	near 1 at 20°C	
<i>Melting temperature:</i>	°C	
<i>Boiling temperature:</i>	°C	
<i>Ignition temperature:</i>	°C	
<i>Flash point:</i>	°C	
<i>Explosion limite lower:</i>	/	
<i> upper:</i>	/	
<i>Density:</i>	/	
<i>Solubility in water:</i>	miscible	
<i>Thermal decomposition:</i>	/	

10. Stability and reactivity

<i>Conditions to be avoided:</i>	Release of hydrogen chloride.
<i>Substances to be avoided:</i>	Metals. Formation of hydrogen. Risk of explosion.
<i>Hazardous decomposition products:</i>	Hydrochloric acid, chlorine
<i>Further information:</i>	Unsuitable materials: metals.

11. Toxicological information

<i>Acute toxicity:</i>	LD 50 (oral): 900 mg/kg for hydrogen chloride
<i>Further toxicological information:</i>	Possible effect after contact with substance: Irritation of: eyes, skin and mucous membrane.

12. Ecological information

<i>Ecotoxic effects:</i>	No ecological problems are to be expected when the product is handled and used with due to care and attention.
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WTW Safety Data Sheet

Identification of the substance/preparation

Pepsin Cleaning Solution

13. Disposal considerations

Products: There are no uniform regulations for the disposal of chemicals or residues. The disposal is regulated through corresponding regional laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

Packaging: Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, noncontaminated packaging may be treated like household waste or recycled.

14. Transport information

ADR/GGVSE: UN 1789 Chlorwasserstoffsäure 8 III

IMDG/GGVSee: UN 1789 Hydrochloric acid 8 III
Ems-No.: F-A, S-B

ICAO/IATA: UN 1789 Hydrochloric acid 8 III

Further information: None

15. Regulatory information

Labelling according to EC directives

Symbol: No hazardous product

R-phrases: /

S-phrases: /

German regulations

Water pollution class: nonpolluting substance

Storage class VCI: 8 B

Regulation on combustible liquids; VbF: Non combustible

Other regulations: None

16. Other information

Date of issue: 15.07.2006

Supersedes edition of 22.01.2004

Reason for alteration: General update

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WTW Safety Data Sheet
According to EC Directives 91/155/EEC

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

Product name:

Electrolyte Solution 3 mol/l KCl AgCl saturated

Ord. No.: 109 702

Model: KCl-AgCl-250 and KCl/pH

Manufacturer:

WTW Wissenschaftlich-Technische Werkstätten GmbH, Dr.-Karl-Slevogt-Straße 1, D-82362 Weilheim, Germany, Tel.:+49(0)881 183-0, Fax.: +49(0)881 183-420

Emergency telephone:
(001)-703-527-3887

2. Composition/information on ingredients

Chemical characterization: Aqueous saline solution

Ingredients: Potassium chloride

Hazard symbols: No hazardous product

R-phrases: /

Content: < 20 %

CAS-No.: 7447-40-7

EINECS-No.: 231-211-8

3. Hazards identification

No hazardous product.

4. First aid measures

After inhalation: Fresh air

After skin contact: Wash off with plenty of water.
Remove contaminated clothing.

After eye contact: Rinse out with plenty of water with the
eyelid held wide open.

After ingestion: Drink plenty of water. Induce vomiting.
Immediately contact doctor.

WTW Safety Data Sheet

Identification of the substance/preparation

Electrolyte Solution 3 mol/l KCl AgCl saturated

5. Fire-fighting measures

Suitable extinguishing media: To suit environment.

Unsuitable extinguishing media: No information available.

Special risks: None

Other information: Non combustible

6. Accidental release measures

Personal-related precautionary measures: Avoid generation of dusts.

Do not inhale dusts.

Environmental-protection measures: Do not allow to enter sewerage system.

Procedures for cleaning/absorption: Clean up affected area with water.

7. Handling and storage

Handling: No further requirements

Storage: Tightly closed.

8. Exposure control/personal protection

Specific control parameters: None

Personal protective equipment

Respiratory protection: Required when dusts are generated.

Eye protection: Protective glasses

Hand protection: Gloves (nitrile rubber)

Industrial hygiene: Wash hands after working with substance.

WTW Safety Data Sheet

Identification of the substance/preparation

Electrolyte Solution 3 mol/l KCl AgCl saturated

9. Physical and chemical properties

<i>Form:</i> Liquid	<i>Colour:</i> Colourless	<i>Odour:</i> Odourless
<i>pH-value</i>	°C	
<i>Melting temperature:</i>	°C	
<i>Boiling temperature:</i>	°C	
<i>Ignition temperature:</i>	°C	
<i>Flash point:</i>	°C	
<i>Explosion limite lower:</i>	/	
<i> upper:</i>	/	
<i>Density:</i>	/	
<i>Solubility in water:</i>	miscible	
<i>Thermal decomposition:</i>	/	

10. Stability and reactivity

<i>Conditions to be avoided:</i>	None
<i>Substances to be avoided:</i>	None
<i>Hazardous decomposition products:</i>	None
<i>Further information:</i>	None

11. Toxicological information

<i>Acute toxicity:</i>	LD 50 oral rat 2600 mg/kg for potassium chloride
<i>Further toxicological information:</i>	After ingestion of large amounts: Cardiac dysrhythmia, cardiovascular failure.

12. Ecological information

<i>Ecotoxic effects:</i>	Toxic for aquatic organisms
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WTW Safety Data Sheet

Identification of the substance/preparation

Electrolyte Solution 3 mol/l KCl AgCl saturated

13. Disposal considerations

Products: There are no uniform regulations for the disposal of chemicals or residues. The disposal is regulated through corresponding regional laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.

Packaging: Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, noncontaminated packaging may be treated like household waste or recycled.

14. Transport information

Not subject to transport regulations.

15. Regulatory information

Labelling according to EC directives

Symbol: No hazardous product
R-phrases: /
S-phrases: /

German regulations

Water pollution class; WGK: 1 slightly polluting substance
Storage class VCI: 12
Regulation on combustible liquids; VbF: Non combustible
Other regulations: None

16. Other information

Date of issue: 15.07.2006
Supersedes edition of: 22.01.2004
Reason for alteration: General update

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.