



製品安全データシート Safety Data Sheet

化学物質および会社情報

・製品名	#101-S
・Product Name	#101-S
・品目コード (Product Code)	3200043642
・MSDS No	573
・用途	pH 標準液 内部液
・Application	pH standard solution, Internal solution
・会社情報	株式会社 堀場製作所 〒601-8510 京都市南区吉祥院宮の東町2番地 電話番号: 075-313-8121 <i>HORIBA, Ltd.</i> <i>2-Miyano Higashi, Kisshoin, Minami-ku Kyoto, Japan, KYOTO</i> <i>601-8510 JAPAN</i> <i>Techinfo.hor@jp.horiba.com</i>
・担当部署(和)	水質・温度計測開発部
(English)	Water & Temperature Measurement R&D Dept.

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/25/2010

Reviewed on 01/28/2009

1 Identification of substance

- **Product details**
- **Trade name:** *pH7 Standard Solution 100-7*
- **Article Code:** 3200043637 (9003001700)
- **MSDS No:** 3
- **Application of the substance / the preparation** Calibration for pH electrode
- **Manufacturer/Supplier:**
HORIBA, Ltd.
2 Miyanohigashi, Kisshoin,
Minami-ku Kyoto, Japan, KYOTO
601-8510 JAPAN
- **Information department:** Water and Temperature Measurement R&D Dept.
- **Emergency information:**
During normal opening times: +81 75 313-8121
USA Contact : Chemtrec (800) 424-9300

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Components:**

7778-77-0	potassium dihydrogenorthophosphate	Nearly 0.34%
7558-79-4	disodium hydrogenorthophosphate	Nearly 0.36%

3 Hazards identification

- **Hazard description:** Not applicable.
- **Information pertaining to particular dangers for man and environment:**
The product does not have to be labelled due to the calculation procedure of international guidelines.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **GHS label elements** Void

4 First aid measures

- **General information:** No special measures required.

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Material Safety Data Sheet acc. to ISO/DIS 11014

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Trade name: pH7 Standard Solution 100-7

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- **After inhalation:**
Remove the victim to fresh air, and make him blow his nose and gargle. Refer for medical attention.
- **After skin contact:** Wash the affect areas under running water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse mouth with water. Give the person one or two glasses of water, and let vomit. Refer for medical attention.

5 Fire fighting measures

- **Suitable extinguishing agents:** This product is noncombustible.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** No special measures required.
- **Measures for cleaning/collecting:** Sweep up and place in a vessel. Flush residual area with water.
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Keep away from heat and direct sunlight.
Keep receptacles tightly sealed.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**
Provide good ventilation. Make available washbasin and eye wash near the work area.
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Suitable respiratory protective device recommended.

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Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/25/2010

Reviewed on 01/28/2009

Trade name: pH7 Standard Solution 100-7

(Contd. of page 2)

- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Goggles recommended during refilling.
- **Body protection:** Use protective suit.

9 Physical and chemical properties

· General Information

Form:	Liquid
Color:	Colorless
Odor:	Odorless

· Change in condition

Melting point/Melting range:	0°C (32°F)
Boiling point/Boiling range:	100°C (212°F)

· **Flash point:** Not applicable.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20°C (68°F):** 1 g/cm³

· **Solubility in / Miscibility with Water:** Fully miscible.

· **pH-value at 25°C (77°F):** 6.86

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

USA

(Contd. on page 4)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/25/2010

Reviewed on 01/28/2009

Trade name: pH7 Standard Solution 100-7

(Contd. of page 3)

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

7778-77-0 potassium dihydrogenorthophosphate

Oral	LD50	2000 mg/kg (mouse)
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7558-79-4 disodium hydrogenorthophosphate

Oral	LD50	17000 mg/kg (rat)
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· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** No irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

· **General notes:** Generally not hazardous for water

13 Disposal considerations

· **Product:**

· **Recommendation:** Must be specially treated adhering to official regulations.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **DOT regulations:**

· **Hazard class:** -

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** -

· **Maritime transport IMDG:**

· **IMDG Class:** -

· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** -

· **UN "Model Regulation":** -

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Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/25/2010

Reviewed on 01/28/2009

Trade name: pH7 Standard Solution 100-7

(Contd. of page 4)

· Transport/Additional information:

Cheak the containers are thghthly sealed. Handle carefully so that they will not be damaged by falling or dropping. Keep away from water.

15 Regulations

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenicity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Product related hazard informations:

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations according to directives on hazardous materials.

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Material Safety Data Sheet acc. to ISO/DIS 11014

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Reviewed on 01/28/2009

Trade name: pH7 Standard Solution 100-7

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- **National regulations:**
- **Water hazard class:** Generally not hazardous for water.

16 Other information

HORIBA, Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensives or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

HORIBA, Ltd. MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, HORIBA, Ltd. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

- **Department issuing MSDS:** Water and Temperature Measurement R&D Dept.

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

HANDBOOK OF ENVIRONMENTAL DATA ON ORGANIC CHEMICALS (Karel Verschueren VAN NOSTRAND REINHOLD)

The Sigma-Aldrich Library Regulatory and Safety Data

Safety data sheet guidebook edited by the information center of the Society for Japan Chemical Industry

- *** Data compared to the previous version altered.**

Date May. 11, 1999

Revised Dec. 13, 2009

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/26/2010

Reviewed on 01/28/2009

1 Identification of substance

- **Product details**
- **Trade name:** 100-4 (Phthalate std. sol.)
- **Article Code:** 3200043638 (9003001600)
- **MSDS No:** 4
- **Application of the substance / the preparation** Calibration for pH electrode
- **Manufacturer/Supplier:**
HORIBA, Ltd.
2 Miyanohigashi, Kisshoin,
Minami-ku Kyoto, Japan, KYOTO
601-8510 JAPAN
- **Information department:** Water and Temperature Measurement R&D Dept.
- **Emergency information:**
During normal opening times: +81 75 313-8121
USA Contact : Chemtrec (800) 424-9300

2 Composition/Data on components

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Components:**

877-24-7	potassium hydrogen phthalate	Nearly 1.0%
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3 Hazards identification

- **Hazard description:** Not applicable.
- **Information pertaining to particular dangers for man and environment:**
The product does not have to be labelled due to the calculation procedure of international guidelines.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **GHS label elements** Void

4 First aid measures

- **General information:** No special measures required.

(Contd. on page 2)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/26/2010

Reviewed on 01/28/2009

Trade name: 100-4 (Phthalate std. sol.)

(Contd. of page 1)

- **After inhalation:**
Remove the victim to fresh air, and make him blow his nose and gargle. Refer for medical attention.
- **After skin contact:** Wash the affect areas under running water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Give the victim water. If necessary, get medical attention.

5 Fire fighting measures

- **Suitable extinguishing agents:** This product is noncombustible.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** The protective equipment is worn.
- **Measures for environmental protection:** No special measures required.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling:**
 - **Information for safe handling:** No special measures required.
 - **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
 - **Requirements to be met by storerooms and receptacles:** Store in a cool location.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in a cool place.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**
Provide good ventilation. Make available washbasin and eye wash near the work area.
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
 - **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
 - **Breathing equipment:** Not required.
 - **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 3)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/26/2010

Reviewed on 01/28/2009

Trade name: 100-4 (Phthalate std. sol.)

(Contd. of page 2)

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **General Information**

Form:	Liquid
Color:	Colorless
Odor:	Odorless

· **Change in condition**

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 100°C (212°F)

· **Flash point:** Not applicable.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20°C (68°F):** 1 g/cm³

· **Solubility in / Miscibility with**

Water: Fully miscible.

· **pH-value at 25°C (77°F):** 4.01

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

· **Dangerous reactions** No dangerous reactions known.

· **Dangerous products of decomposition:** No dangerous decomposition products known.

USA

(Contd. on page 4)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/26/2010

Reviewed on 01/28/2009

Trade name: 100-4 (Phthalate std. sol.)

(Contd. of page 3)

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

877-24-7 potassium hydrogen phthalate

Oral	LD50	3200 mg/kg (rat)
Dermal	LD50	1000 mg/kg (mouse)

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** No irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

· **General notes:** Generally not hazardous for water

13 Disposal considerations

· **Product:**

· **Recommendation:**

Dilute concentrate with water and neutralize afterwards with suitable alkali material (sodium hydroxide solution, lime). The formed neutral salts are relatively environment-friendly.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **DOT regulations:**

· **Hazard class:** -

· **Land transport ADR/RID (cross-border):**

· **ADR/RID class:** -

· **Maritime transport IMDG:**

· **IMDG Class:** -

· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** -

· **UN "Model Regulation":** -

(Contd. on page 5)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/26/2010

Reviewed on 01/28/2009

Trade name: 100-4 (Phthalate std. sol.)

(Contd. of page 4)

· Transport/Additional information:

Cheak the containers are thghtly sealed. Handle carefully so that they will not be damaged by falling or dropping. Keep away from water.

15 Regulations

· Sara**· Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65**· Chemicals known to cause cancer:**

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenicity categories**· EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Product related hazard informations:

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations according to directives on hazardous materials.

(Contd. on page 6)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 02/26/2010

Reviewed on 01/28/2009

Trade name: 100-4 (Phthalate std. sol.)

(Contd. of page 5)

- **National regulations:**
- **Water hazard class:** Generally not hazardous for water.

16 Other information

HORIBA, Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensives or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

HORIBA, Ltd. MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, HORIBA, Ltd. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

- **Department issuing MSDS:** Water and Temperature Measurement R&D Dept.

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

The MERCK Index 12th Edition

HANDBOOK OF ENVIRONMENTAL DATA ON ORGANIC CHEMICALS (Karel Verschueren VAN NOSTRAND REINHOLD)

Safety data sheet guidebook edited by the information center of the Society for Japan Chemical Industry

- *** Data compared to the previous version altered.**

Date Feb. 13, 1998

Revised Dec. 13, 2009

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012


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

- **Product identifier**
- **Trade name:** pH9 Standard Solution 100-9
- **Article Code:** 3200043636 (9003001800)
- **MSDS No:** 11
- **Application of the substance / the preparation** Calibration for pH electrode
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
HORIBA, Ltd.
2 Miyano Higashi, Kisshoin,
Minami-ku Kyoto, Japan, KYOTO
601-8510 JAPAN
- **Information department:** Liquid & Water Quality R&D Dept.
- **Emergency telephone number:** During normal opening times: +81 75 313-8121

2 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Components:**

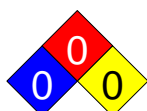
1303-96-4	Disodium tetraborate, decahydrate	 H360	Nearly 0.2%
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· **SVHC**

1303-96-4	Disodium tetraborate, decahydrate
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3 Hazards identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Not applicable.
Void
- **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of international guidelines.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **Label elements**
- **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

(Contd. on page 2)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

Trade name: pH9 Standard Solution 100-9

(Contd. of page 1)

· HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

4 First aid measures

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Wash the affect areas under running water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse mouth with water. Give the person one or two glasses of water, and let vomit. Refer for medical attention.

5 Firefighting measures

- **Suitable extinguishing agents:** This product is noncombustible.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** The protective equipment is worn.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**
Sweep up and place in a vessel. Flush residual area with water.
- **Reference to other sections** No dangerous substances are released.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Keep receptacles tightly sealed.
Keep away from heat and direct sunlight.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

USA

(Contd. on page 3)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

Trade name: pH9 Standard Solution 100-9

(Contd. of page 2)

8 Exposure controls/personal protection

· **Additional information about design of technical systems:**

Provide good ventilation. Make available washbasin and eye wash near the work area.

· **Components with limit values that require monitoring at the workplace:**

1303-96-4 Disodium tetraborate, decahydrate

REL	5 mg/m ³
TLV	Short-term value: 6* mg/m ³ Long-term value: 2* mg/m ³ *as inhalable fraction

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

· **Breathing equipment:** Suitable respiratory protective device recommended.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Goggles recommended during refilling.

· **Body protection:** Use protective suit.

9 Physical and chemical properties

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Odorless

· **Change in condition**

Melting point/Melting range: 0°C (32 °F)

Boiling point/Boiling range: 100°C (212 °F)

· **Flash point:** Not applicable.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

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Material Safety Data Sheet acc. to ISO/DIS 11014

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Reviewed on 05/09/2012

Trade name: pH9 Standard Solution 100-9

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- **Density at 20°C (68 °F):** 1 g/cm³ (8.345 lbs/gal)
- **Solubility in / Miscibility with Water:** Fully miscible.
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Dilute the chemical with a large amount of water and flush in a drain after confirming pH of the solution.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

USA

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Trade name: pH9 Standard Solution 100-9

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14 Transport information

· UN-Number	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Class	Void
· Packing group	Void
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	No
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Cheak the containers are thgthly sealed. Handle carefully so that they will not be damaged by falling or dropping. Keep away from water.
· UN "Model Regulation":	-

15 Regulatory information

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

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Material Safety Data Sheet acc. to ISO/DIS 11014

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Reviewed on 05/09/2012

Trade name: pH9 Standard Solution 100-9

(Contd. of page 5)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

1303-96-4 Disodium tetraborate, decahydrate

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Product related hazard informations:**

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations according to directives on hazardous materials.

· **National regulations:**

· **Water hazard class:** Generally not hazardous for water.

16 Other information

HORIBA, Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensives or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

HORIBA, Ltd. MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, HORIBA, Ltd. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

· **Department issuing MSDS:** Water and Temperature Measurement R&D Dept.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

NFPA: National Fire Protection Association (USA)

HMSIS: Hazardous Materials Identification System (USA)

· **Sources**

HANDBOOK OF ENVIRONMENTAL DATA ON ORGANIC CHEMICALS (Karel Verschueren VAN NOSTRAND REINHOLD)

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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

Trade name: pH9 Standard Solution 100-9

(Contd. of page 6)

Safety data sheet guidebook edited by the information center of the Society for Japan Chemical Industry
The MERCK Index 12th Edition

· *** Data compared to the previous version altered.**

Date Jun. 3, 1998

Revised May. 09, 2012

USA

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

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

- **Product identifier**
- **Trade name:** 300 (INTERNAL SOL. FOR REF ELECTRODE)
- **Article Code:** 3200043640 (9003003200)
- **MSDS No:** 14
- **Application of the substance / the preparation** Reference solution
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
HORIBA, Ltd.
2 Miyano Higashi, Kisshoin,
Minami-ku Kyoto, Japan, KYOTO
601-8510 JAPAN
- **Information department:** Liquid & Water Quality R&D Dept.
- **Emergency telephone number:**
During normal opening times: +81 75 313-8121
USA Contact : Chemtrec (800) 424-9300

2 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Components:**

7447-40-7	potassium chloride	Nearly 25%
7732-18-5	water, distilled, conductivity or of similar purity	Nearly 75%

3 Hazards identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Not applicable.
Void
- **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of international guidelines.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **Label elements**
- **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals.
The product is not subject to identification regulations according to directives on hazardous materials.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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Material Safety Data Sheet acc. to ISO/DIS 11014

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Reviewed on 05/09/2012

Trade name: 300 (INTERNAL SOL. FOR REF ELECTRODE)

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· HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

4 First aid measures

- **General information:** No special measures required.
- **After inhalation:**
Remove the victim to fresh air, and make him blow his nose and gargle. Refer for medical attention.
- **After skin contact:** Wash the affect areas under running water.
- **After eye contact:**
Immediately rinse the affected eyes with running water for at least 15 minutes, and refer for medical attention.
- **After swallowing:** Give the victim water. If necessary, get medical attention.

5 Firefighting measures

- **Suitable extinguishing agents:** This product is noncombustible.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**
Sweep up and place in a vessel. Flush residual area with water.
- **Reference to other sections** No dangerous substances are released.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Keep receptacles tightly sealed.
Keep away from heat and direct sunlight.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

USA

(Contd. on page 3)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

Trade name: 300 (INTERNAL SOL. FOR REF ELECTRODE)

(Contd. of page 2)

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**
Provide good ventilation. Make available washbasin and eye wash near the work area.
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Suitable respiratory protective device recommended.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Goggles recommended during refilling.
- **Body protection:** Use protective suit.

9 Physical and chemical properties

- **General Information**
- **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Odorless
- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
- **Flash point:** Not applicable.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Density:** Not determined.
- **Solubility in / Miscibility with**

Water:	Fully miscible.
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Material Safety Data Sheet acc. to ISO/DIS 11014

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Reviewed on 05/09/2012

Trade name: 300 (INTERNAL SOL. FOR REF ELECTRODE)

(Contd. of page 3)

· **Other information** No further relevant information available.

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

7447-40-7 potassium chloride

Oral	LD50	383 mg/kg (mouse)
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· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** No irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

12 Ecological information

- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must be specially treated adhering to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

USA

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Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

Trade name: 300 (INTERNAL SOL. FOR REF ELECTRODE)

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14 Transport information

· UN-Number	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	Void
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Check the containers are thgthly sealed. Handle carefully so that they will not be damaged by falling or dropping. Keep away from water.
· UN "Model Regulation":	-

15 Regulatory information

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

(Contd. on page 6)

Material Safety Data Sheet acc. to ISO/DIS 11014

Printing date 05/09/2012

Reviewed on 05/09/2012

Trade name: 300 (INTERNAL SOL. FOR REF ELECTRODE)

(Contd. of page 5)

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Product related hazard informations:**

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations according to directives on hazardous materials.

· **National regulations:**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

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IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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Trade name: 300 (INTERNAL SOL. FOR REF ELECTRODE)

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· **Sources**

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· *** Data compared to the previous version altered.**

Date Feb. 13, 1998

Revised May. 09, 2012

USA