

SAFETY DATA SHEET

Agilent CrossLab Refillable pH Combination Electrode with PC Body, Part Number 8010-0986

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

1.1 Product identifier

Product name : Agilent CrossLab Refillable pH Combination Electrode with PC Body, Part Number 8010-0986

Part No. (Kit) : 8010-0986

Part No. : * Electrode 8010-0974
pH reference solution 8010-0984-1

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

| Identified uses | |
|---|-------------------------------------|
| Analytical chemistry. * Electrode pH reference solution | Electrodes. (1 x 7 ml) 1 x 30 ml |

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

Nota * : * This component is considered an article. Information provided is based on the encapsulated substance or mixture in this article.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Electrode Mixture (encapsulated in article)
pH reference solution Mixture

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

Electrode

H400 ACUTE AQUATIC HAZARD - Category 1
H410 LONG-TERM AQUATIC HAZARD - Category 1

pH reference solution

H410 LONG-TERM AQUATIC HAZARD - Category 1

Ingredients of unknown toxicity : * Electrode Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.5%
pH reference solution Not applicable.

Ingredients of unknown ecotoxicity : Electrode Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 16.5%
pH reference solution Not applicable.

Classification according to Directive 1999/45/EC [DPD]

Date of issue/Date of revision : 30/04/2015

SECTION 2: Hazards identification

* Electrode The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
 pH reference solution The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : * Electrode N; R50
 pH reference solution N; R50

Environmental hazards : * Electrode Very toxic to aquatic organisms.
 pH reference solution Very toxic to aquatic organisms.

See Section 16 for the full text of the R phrases or H statements declared above.
 See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : * Electrode Warning
 pH reference solution Warning

Hazard statements : Electrode **GHS09** -
 Very toxic to aquatic life with long lasting effects.
 pH reference solution **GHS09** -
 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Electrode P273 - Avoid release to the environment.
 pH reference solution P273 - Avoid release to the environment.

Response : Electrode P391 - Collect spillage.
 pH reference solution P391 - Collect spillage.

Storage : Electrode Not applicable.
 pH reference solution Not applicable.

Disposal : Electrode P501 - Dispose of contents and container in accordance
 with all local, regional, national and international regulations.
 pH reference solution P501 - Dispose of contents and container in accordance
 with all local, regional, national and international regulations.

Hazardous ingredients : No hazardous ingredient

Supplemental label elements : * Electrode Not applicable.
 pH reference solution Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Tactile warning of danger : * Electrode Not applicable.
 pH reference solution Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : * Electrode None known.
 pH reference solution None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Electrode Mixture (encapsulated in article)
pH reference solution Mixture

| Product/ingredient name | Identifiers | % | Classification | | Type |
|---|---|--------------|--|---|---------|
| | | | 67/548/EEC | Regulation (EC) No. 1272/2008 [CLP] | |
| Electrode Ethanediol | EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1 | ≥3 - <5 | Xn; R22 | Acute Tox. 4, H302 | [1] [2] |
| Silver chloride | EC: 232-033-3 CAS: 7783-90-6 | ≥1 - <3 | N; R50 | Aquatic Acute 1, H400 Aquatic Chronic 1, H410 | [1] |
| pH reference solution Silver chloride | EC: 232-033-3 CAS: 7783-90-6 | ≥0.3 - <0.31 | N; R50 See Section 16 for the full text of the R-phrases declared above. | Aquatic Acute 1, H400 Aquatic Chronic 1, H410 See Section 16 for the full text of the H statements declared above. | [1] |

Electrodes. (Article.) No dangerous substances are released.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Electrode Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

pH reference solution Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Electrode Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

pH reference solution Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-

SECTION 4: First aid measures

| | | |
|-----------------------------------|-----------------------|---|
| | | mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Skin contact | : Electrode | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | pH reference solution | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| Ingestion | : Electrode | Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| | pH reference solution | Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Protection of first-aiders | : * Electrode | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |
| | pH reference solution | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

| | | |
|---------------------|-----------------------|---|
| Eye contact | : * Electrode | No known significant effects or critical hazards. |
| | pH reference solution | No known significant effects or critical hazards. |
| Inhalation | : * Electrode | No known significant effects or critical hazards. |
| | pH reference solution | No known significant effects or critical hazards. |
| Skin contact | : * Electrode | No known significant effects or critical hazards. |
| | pH reference solution | No known significant effects or critical hazards. |
| Ingestion | : * Electrode | No known significant effects or critical hazards. |
| | pH reference solution | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

SECTION 4: First aid measures

| | | |
|---------------------|--|--|
| Eye contact | : * Electrode pH reference solution | No specific data. No specific data. |
| Inhalation | : * Electrode pH reference solution | No specific data. No specific data. |
| Skin contact | : * Electrode pH reference solution | No specific data. No specific data. |
| Ingestion | : * Electrode pH reference solution | No specific data. No specific data. |

4.3 Indication of any immediate medical attention and special treatment needed

| | | |
|----------------------------|--|--|
| Notes to physician | : * Electrode pH reference solution | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | : * Electrode pH reference solution | No specific treatment. No specific treatment. |

SECTION 5: Firefighting measures**5.1 Extinguishing media**

| | | |
|---------------------------------------|--|--|
| Suitable extinguishing media | : * Electrode pH reference solution | Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | : * Electrode pH reference solution | None known. None known. |

5.2 Special hazards arising from the substance or mixture

| | | |
|--|--|--|
| Hazards from the substance or mixture | : * Electrode pH reference solution | In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. |
| Hazardous combustion products | : * Electrode pH reference solution | Decomposition products may include the following materials: carbon dioxide carbon monoxide phosphorus oxides halogenated compounds metal oxide/oxides Decomposition products may include the following materials: halogenated compounds metal oxide/oxides |

5.3 Advice for firefighters

| | | |
|--|--|--|
| Special precautions for fire-fighters | : * Electrode pH reference solution | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--|--|--|

SECTION 5: Firefighting measures

| | | |
|---|-----------------------|---|
| Special protective equipment for fire-fighters | : * Electrode | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
| | pH reference solution | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

| | | |
|------------------------------------|-----------------------|---|
| For non-emergency personnel | : * Electrode | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | pH reference solution | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| For emergency responders | : * Electrode | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| | pH reference solution | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |

6.2 Environmental precautions

| | |
|-----------------------|--|
| : ☑ Electrode | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. |
| pH reference solution | Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. |

6.3 Methods and material for containment and cleaning up


| | |
|--------------------------------|---|
| Methods for cleaning up | : ☑ Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
|--------------------------------|---|

SECTION 6: Accidental release measures

6.4 Reference to other sections : See Section 1 for emergency contact information.
 See Section 8 for information on appropriate personal protective equipment.
 See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling


Protective measures :  Electrode
 Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

pH reference solution
 Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : * Electrode
 Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

pH reference solution
 Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

:  Electrode
 Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

pH reference solution
 Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Seveso II Directive - Reporting thresholds (in tonnes)

Danger criteria

SECTION 7: Handling and storage

| Category | Notification and MAPP threshold | Safety report threshold |
|--|---------------------------------|-------------------------|
| Electrode E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1 C9i: Very toxic for the environment | 100 | 200 |
| pH reference solution E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1 C9i: Very toxic for the environment | 100 | 200 |

7.3 Specific end use(s)

Recommendations : * Electrode Industrial applications, Professional applications.
 pH reference solution Industrial applications, Professional applications.

Industrial sector specific solutions : Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|--------------------------------|---|
| Electrode Ethanediol | EU OEL (Europe, 12/2009). Absorbed through skin. Notes: list of indicative occupational exposure limit values TWA: 20 ppm 8 hours. TWA: 52 mg/m ³ 8 hours. STEL: 40 ppm 15 minutes. STEL: 104 mg/m ³ 15 minutes. |

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs available.

PNECs

No PNECs available.

8.2 Exposure controls


Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

SECTION 8: Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****Appearance**

| | | |
|--|--|------------------------------------|
| Physical state | : * Electrode pH reference solution | Liquid. Liquid. |
| Colour | : * Electrode pH reference solution | Colourless. White. |
| Odour | : * Electrode pH reference solution | Not available. Not available. |
| Odour threshold | : * Electrode pH reference solution | Not available. Not available. |
| pH | : * Electrode pH reference solution | 6 6 |
| Melting point/freezing point | : * Electrode pH reference solution | -25°C 0°C |
| Initial boiling point and boiling range | : * Electrode pH reference solution | 110°C 100°C |
| Flash point | : * Electrode pH reference solution | Not available. Not available. |
| Evaporation rate | : * Electrode pH reference solution | Not available. Not available. |
| Flammability (solid, gas) | :  Electrode pH reference solution | Not applicable. Not applicable. |


SECTION 9: Physical and chemical properties

| | | |
|---|--|---|
| Upper/lower flammability or explosive limits | : * Electrode pH reference solution | Not available. Not available. |
| Vapour pressure | : * Electrode pH reference solution | Not available. Not available. |
| Vapour density | : * Electrode pH reference solution | Not available. Not available. |
| Relative density | : * Electrode pH reference solution | 1.1 1 |
| Solubility(ies) | : * Electrode pH reference solution | Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/water | : * Electrode pH reference solution | Not available. Not available. |
| Auto-ignition temperature | : * Electrode pH reference solution | Not available. Not available. |
| Decomposition temperature | : * Electrode pH reference solution | Not available. Not available. |
| Viscosity | : * Electrode pH reference solution | Not available. Not available. |
| Explosive properties | : * Electrode pH reference solution | Non-explosive in the presence of the following materials or conditions: oxidizing materials. Not available. |
| Oxidising properties | : Not available. | |

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

| | | |
|--|--|--|
| 10.1 Reactivity | : * Electrode pH reference solution | No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability | : * Electrode pH reference solution | The product is stable. The product is stable. |
| 10.3 Possibility of hazardous reactions | : * Electrode pH reference solution | Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10.4 Conditions to avoid | : * Electrode pH reference solution | No specific data. No specific data. |
| 10.5 Incompatible materials | :  Electrode pH reference solution | No specific data. No specific data. |
| 10.6 Hazardous decomposition products | : * Electrode pH reference solution | Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

SECTION 11: Toxicological information**11.1 Information on toxicological effects**Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|-----------|---------|------------|----------|
| <input checked="" type="checkbox"/> Electrode Ethanediol | LD50 Oral | Rat | 4700 mg/kg | - |

Acute toxicity estimates

| Route | ATE value |
|---------------------|---------------|
| * Electrode Oral | 16666.7 mg/kg |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|--------------------------|---------|-------|-------------------------|-------------|
| <input checked="" type="checkbox"/> Electrode Ethanediol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Eyes - Mild irritant | Rabbit | - | 1 hours 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 6 hours 1440 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 555 milligrams | - |

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Electrode pH reference solution Not available.
Not available.

Potential acute health effects

Inhalation : * Electrode pH reference solution No known significant effects or critical hazards.
No known significant effects or critical hazards.

Ingestion : * Electrode pH reference solution No known significant effects or critical hazards.
No known significant effects or critical hazards.

Skin contact : * Electrode pH reference solution No known significant effects or critical hazards.
No known significant effects or critical hazards.

Eye contact : * Electrode pH reference solution No known significant effects or critical hazards.
No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : * Electrode pH reference solution No specific data.
No specific data.

Ingestion : * Electrode pH reference solution No specific data.
No specific data.

Skin contact : * Electrode pH reference solution No specific data.
No specific data.

Eye contact : * Electrode pH reference solution No specific data.
No specific data.

SECTION 11: Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| | | |
|------------------------------|--|--|
| General | : <input checked="" type="checkbox"/> Electrode pH reference solution | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Carcinogenicity | : * Electrode pH reference solution | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Mutagenicity | : * Electrode pH reference solution | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Teratogenicity | : * Electrode pH reference solution | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : * Electrode pH reference solution | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Fertility effects | : * Electrode pH reference solution | No known significant effects or critical hazards. No known significant effects or critical hazards. |

Toxicokinetics

| | | |
|--------------------------|--|----------------------------------|
| Absorption | : * Electrode pH reference solution | Not available. Not available. |
| Distribution | : * Electrode pH reference solution | Not available. Not available. |
| Metabolism | : * Electrode pH reference solution | Not available. Not available. |
| Elimination | : * Electrode pH reference solution | Not available. Not available. |
| Other information | : <input checked="" type="checkbox"/> Electrode pH reference solution | Not available. Not available. |


SECTION 12: Ecological information

12.1 Toxicity


| Product/ingredient name | Result | Species | Exposure |
|---|--------------------------------------|--|----------|
| <input checked="" type="checkbox"/> Electrode Ethanediol | Acute LC50 100000 µg/l Marine water | Crustaceans - Crangon crangon - Adult | 48 hours |
| Silver chloride | Acute LC50 10000000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 8050000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 5.3 µg/l Fresh water | Fish - Lepidocephalichthys guntea | 96 hours |
| pH reference solution Silver chloride | Acute LC50 5.3 µg/l Fresh water | Fish - Lepidocephalichthys guntea | 96 hours |

12.2 Persistence and degradability

SECTION 12: Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
|  Electrode Ethenediol | - | - | Readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--|--------------------|-----|-----------|
|  Electrode Ethenediol | -1.36 | - | low |
| Silver chloride | - | 70 | low |
| pH reference solution Silver chloride | - | 70 | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information**Regulatory information**

ADR/RID / IMDG / IATA : Not regulated.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 14: Transport information

14.7 Transport in bulk : Not available.
 according to Annex II of
 MARPOL 73/78 and the
 IBC Code

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : Not applicable.
 on the manufacture,
 placing on the market
 and use of certain
 dangerous substances,
 mixtures and articles

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso II Directive

This product is controlled under the Seveso II Directive.

Danger criteria

Category

Electrode

E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

C9i: Very toxic for the environment

pH reference solution

E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

C9i: Very toxic for the environment

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Japan : All components are listed or exempted.

SECTION 15: Regulatory information

| | |
|-------------------|--|
| Malaysia | : Not determined. |
| New Zealand | : All components are listed or exempted. |
| Philippines | : All components are listed or exempted. |
| Republic of Korea | : All components are listed or exempted. |
| Taiwan | : All components are listed or exempted. |
| United States | : All components are listed or exempted. |

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|---|--|
| Electrode Aquatic Acute 1, H400 Aquatic Chronic 1, H410 pH reference solution Aquatic Chronic 1, H410 | Calculation method Calculation method Calculation method |

Full text of abbreviated H statements : **Electrode**
 H302 Harmful if swallowed.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

pH reference solution
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] : **Electrode**
 Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
 Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1
 Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1

pH reference solution
 Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1
 Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1

Full text of abbreviated R phrases : * Electrode R22- Harmful if swallowed.
 pH reference solution R50- Very toxic to aquatic organisms.
 R50- Very toxic to aquatic organisms.

Full text of classifications [DSD/DPD] : * Electrode Xn - Harmful
 N - Dangerous for the environment
 pH reference solution N - Dangerous for the environment

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Version : 1.01

SECTION 16: Other information

Nota * : * This component is considered an article. Information provided is based on the encapsulated substance or mixture in this article.

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