

# Safety Data Sheet

## Type E Electrolyte

SDS Revision Date:

10/05/2016

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

#### 1.1. Product identifier

**Product Identity** Type E Electrolyte  
**Alternate Names** Potassium Hydroxide Solution

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

**Intended use** See Technical Data Sheet.  
**Application Method** See Technical Data Sheet.

#### 1.3. Details of the supplier of the safety data sheet

**Company Name** Teledyne Instruments/Analytical Instruments  
16830 Chestnut Street  
Industry, CA 91748. USA

#### Emergency

**CHEMTREC (USA)** (800) 424-9300  
**Customer Service: Teledyne Instruments/Analytical Instruments** 626-934-1500  
Technical Support: 626-934-1673  
Environment, Health and Safety: 626-934-1592

### 2. Hazard identification of the product

#### 2.1. Classification of the substance or mixture

|                    |   |
|--------------------|---|
| Acute Tox. 5;H303  | May be harmful if swallowed. (Not adopted by US OSHA) |
| Skin Corr. 1A;H314 | Causes severe skin burns and eye damage.              |
| Eye Dam. 1;H318    | Causes serious eye damage.                            |

#### 2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



**Danger**

H303 May be harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.

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### [Prevention]:

P260 Do not breathe mist / vapors / spray.

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

### [Response]:

P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P363 Wash contaminated clothing before reuse.

### [Storage]:

P405 Store locked up.

### [Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

## 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

| Ingredient/Chemical Designations                 | Weight % | GHS Classification                      | Notes  |
|--|----------|---|--------|
| Potassium hydroxide.<br>CAS Number: 0001310-58-3 | 1 - 10   | Acute Tox. 4;H302<br>Skin Corr. 1A;H314 | [1][2] |

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

\*The full texts of the phrases are shown in Section 16.

## 4. First aid measures

### 4.1. Description of first aid measures

#### General

In all cases of doubt, or when symptoms persist, seek medical attention.  
Never give anything by mouth to an unconscious person.

#### Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

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- Eyes** Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
- Skin** Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
- Ingestion** Do NOT induce vomiting. Rinse mouth and slowly drink several glasses of water. Call a physician. Do NOT give anything by mouth to an unconscious or convulsing person.

#### 4.2. Most important symptoms and effects, both acute and delayed

##### Overview

##### Routes of Entry:

**Inhalation:** Severe irritant to lungs and respiratory tract.

**Ingestion:** May be fatal if swallowed.

**Skin:** The electrolyte (potassium hydroxide) is corrosive; skin contact may cause irritation or severe chemical burns.

**Eyes:** The electrolyte (potassium hydroxide) is corrosive; eye contact may cause irritation or severe chemicals burns.

**Acute Effects:** The product is harmful if swallowed, inhaled or absorbed through the skin. This product may irritate eyes and skin on contact. It is extremely destructive to tissue of the mucous membranes, stomach, mouth, upper respiratory tract, eyes and skin.

**Chronic Effects:** Prolonged exposure with the electrolyte has a destructive effect on tissue. The product is toxic to the lungs and mucous membranes. Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation.

**Signs and Symptoms of Exposure:** Contact of electrolyte with skin or eyes will cause a burning sensation and/or feel soapy or slippery to touch.

See section 2 for further details.

- Eyes** Causes serious eye damage.
- Skin** Causes severe skin burns and eye damage.
- Ingestion** May be harmful if swallowed. (Not adopted by US OSHA)

## 5. Fire-fighting measures

### 5.1. Extinguishing media

Use standard fire fighting media on surrounding materials including water spray, foam, and carbon dioxide. (Do not use dry chemical extinguisher containing ammonium compounds.)

### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Potassium oxides

Do not breathe mist / vapors / spray.

### 5.3. Advice for fire-fighters

Wear NIOSH/OSHA approved self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6. Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

#### 6.2. Environmental precautions

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

#### 6.3. Methods and material for containment and cleaning up

Wipe down the area several times with a wet paper towel. Use a fresh towel each time. Contaminated paper towels are considered hazardous waste.

### 7. Handling and storage

#### 7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

#### 7.2. Conditions for safe storage, including any incompatibilities

Containers should be stored in a cool, dry, well-ventilated area. Exercise due caution to prevent damage to or leakage from the container. Keep containers closed when not in use.

Incompatible materials: Highly reactive with acids. Highly corrosive in presence of aluminum. Slightly corrosive to corrosive in presence of glass.

Keep container tightly closed and dry. Keep away from incompatibles as acids and moisture. Avoid contact with skin and eyes. Do not ingest. If ingested. Seek medical advice immediately. Do not breathe fumes, vapor or spray. May corrode metallic surfaces. Store in an appropriate container. Corrosive materials should be stored in a separate safety storage cabinet or room.

See section 2 for further details. - [Storage]:

#### 7.3. Specific end use(s)

No data available.

### 8. Exposure controls and personal protection

#### 8.1. Control parameters

##### Exposure

| CAS No.      | Ingredient           | Source   | Value                |
|--------------|----------------------|----------|----------------------|
| 0001310-58-3 | Potassium hydroxide. | OSHA     | No Established Limit |
|              |                      | ACGIH    | Ceiling: 2 mg/m3     |
|              |                      | NIOSH    | C 2 mg/m3            |
|              |                      | Supplier | No Established Limit |

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### Carcinogen Data

| CAS No.      | Ingredient           | Source | Value  |
|--------------|----------------------|--------|--|
| 0001310-58-3 | Potassium hydroxide. | OSHA   | Select Carcinogen: No  |
|              |                      | NTP    | Known: No; Suspected: No   |
|              |                      | IARC   | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No; |

### 8.2. Exposure controls

- Respiratory** Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
- Eyes** Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.
- Skin** Chemical resistant clothing such as coveralls/apron boots should be worn. Wear gloves. Gloves must be resistant to corrosive materials. Nitrile or PVC gloves are suitable. Do not use cotton or leather gloves.
- Engineering Controls** Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
- Other Work Practices** Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

## 9. Physical and chemical properties

|   |  |
|---|--|
| <b>Appearance</b>                                   | Clear Colorless Liquid   |
| <b>Odor</b>   | Odorless   |
| <b>Odor threshold</b>                               | Not Measured   |
| <b>pH</b>   | 13.5 (0.1 molar solution)  |
| <b>Melting point / freezing point</b>               | Not Measured   |
| <b>Initial boiling point and boiling range</b>      | Not Measured   |
| <b>Flash Point</b>                                  | Not Measured   |
| <b>Evaporation rate (Ether = 1)</b>                 | Not Measured   |
| <b>Flammability (solid, gas)</b>                    | Not Applicable   |
| <b>Upper/lower flammability or explosive limits</b> | <b>Lower Explosive Limit:</b> Not Measured<br><b>Upper Explosive Limit:</b> Not Measured |
| <b>Vapor pressure (Pa)</b>                          | No Information Found   |
| <b>Vapor Density</b>                                | No Information Found   |
| <b>Specific Gravity</b>                             | 1.1  |
| <b>Solubility in Water</b>                          | Complete   |

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|   |              |
|---|--------------|
| Partition coefficient n-octanol/water (Log Kow) | Not Measured |
| Auto-ignition temperature                       | Not Measured |
| Decomposition temperature                       | Not Measured |
| Viscosity (cSt)                                 | Not Measured |

### 9.2. Other information

No other relevant information.

## 10. Stability and reactivity

### 10.1. Reactivity

Hazardous Polymerization will not occur.

### 10.2. Chemical stability

Stable under normal circumstances.

### 10.3. Possibility of hazardous reactions

Incompatible with strong oxidizers, leather and halogenated compounds. Product will react with 'soft' metals such as aluminum, tin, magnesium, and zinc releasing flammable hydrogen gas.

### 10.4. Conditions to avoid

Excessive heat and open flame.

Sealed containers may develop explosive pressures under fire conditions. Use water to cool containers exposed to fire.

### 10.5. Incompatible materials

Highly reactive with acids. Highly corrosive in presence of aluminum. Slightly corrosive to corrosive in presence of glass.

### 10.6. Hazardous decomposition products

Potassium oxides

## 11. Toxicological information

### Acute toxicity

| Ingredient                         | Oral LD50, mg/kg          | Skin LD50, mg/kg  | Inhalation Vapor LD50, mg/L/4hr | Inhalation Dust/Mist LD50, mg/L/4hr | Inhalation Gas LD50, ppm |
|------------------------------------|---------------------------|-------------------|---------------------------------|-------------------------------------|--------------------------|
| Potassium hydroxide. - (1310-58-3) | 365.00, Rat - Category: 4 | No data available | No data available               | No data available                   | No data available        |

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

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| Classification                | Category | Hazard Description                                    |
|-------------------------------|----------|---|
| Acute toxicity (oral)         | 5        | May be harmful if swallowed. (Not adopted by US OSHA) |
| Acute toxicity (dermal)       | ---      | Not Applicable  |
| Acute toxicity (inhalation)   | ---      | Not Applicable  |
| Skin corrosion/irritation     | 1A       | Causes severe skin burns and eye damage.              |
| Serious eye damage/irritation | 1        | Causes serious eye damage.                            |
| Respiratory sensitization     | ---      | Not Applicable  |
| Skin sensitization            | ---      | Not Applicable  |
| Germ cell mutagenicity        | ---      | Not Applicable  |
| Carcinogenicity               | ---      | Not Applicable  |
| Reproductive toxicity         | ---      | Not Applicable  |
| STOT-single exposure          | ---      | Not Applicable  |
| STOT-repeated exposure        | ---      | Not Applicable  |
| Aspiration hazard             | ---      | Not Applicable  |

## 12. Ecological information

### 12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

#### Aquatic Ecotoxicity

| Ingredient                         | 96 hr LC50 fish, mg/l | 48 hr EC50 crustacea, mg/l | ErC50 algae, mg/l |
|------------------------------------|-----------------------|----------------------------|-------------------|
| Potassium hydroxide. - (1310-58-3) | Not Available         | Not Available              | Not Available     |

### 12.2. Persistence and degradability

There is no data available on the preparation itself.

### 12.3. Bioaccumulative potential

Not Measured

### 12.4. Mobility in soil

No data available.

### 12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

### 12.6. Other adverse effects

No data available.

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### 13. Disposal considerations

#### 13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

### 14. Transport information

|   | <b>DOT (Domestic Surface Transportation)</b>      | <b>IMO / IMDG (Ocean Transportation)</b>           | <b>ICAO/IATA</b>              |
|---|---|--|-------------------------------|
| <b>14.1. UN number</b>                    | UN1814  | UN1814   | UN1814                        |
| <b>14.2. UN proper shipping name</b>      | UN1814, Potassium hydroxide, solution, 8, II      | Potassium hydroxide, solution                      | Potassium hydroxide, solution |
| <b>14.3. Transport hazard class(es)</b>   | <b>DOT Hazard Class: 8</b><br><b>DOT Label: 8</b> | <b>IMDG: 8</b><br><b>Sub Class: Not Applicable</b> | <b>Air Class: 8</b>           |
| <b>14.4. Packing group</b>                | II  | II   | II                            |
| <b>14.5. Environmental hazards</b>        |   |  |                               |
| <b>IMDG</b>                               | Marine Pollutant: No                              |  |                               |
| <b>14.6. Special precautions for user</b> | No further information                            |  |                               |

### 15. Regulatory information

|   |  |
|---|--|
| <b>Regulatory Overview</b>                    | The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.                                |
| <b>Toxic Substance Control Act (TSCA)</b>     | All components of this material are either listed or exempt from listing on the TSCA Inventory.  |
| <b>WHMIS Classification</b>                   | D2B E  |
| <b>US EPA Tier II Hazards</b>                 | <b>Fire: No</b><br><b>Sudden Release of Pressure: No</b><br><b>Reactive: No</b><br><b>Immediate (Acute): Yes</b><br><b>Delayed (Chronic): No</b> |
| <b>EPCRA 311/312 Chemicals and RQs (lbs):</b> | Potassium hydroxide. ( 1,000.00)   |
| <b>EPCRA 302 Extremely Hazardous :</b>        | (No Product Ingredients Listed)  |



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**EPCRA 313 Toxic Chemicals:**

(No Product Ingredients Listed)

**Proposition 65 - Carcinogens (>0.0%):**

(No Product Ingredients Listed)

**Proposition 65 - Developmental Toxins (>0.0%):**

(No Product Ingredients Listed)

**Proposition 65 - Female Repro Toxins (>0.0%):**

(No Product Ingredients Listed)

**Proposition 65 - Male Repro Toxins (>0.0%):**

(No Product Ingredients Listed)

**N.J. RTK Substances (>1%):**

Potassium hydroxide.

**Penn RTK Substances (>1%):**

Potassium hydroxide.

### 16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

**This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.**

All chemicals may pose unknown hazards and should be used with caution. While the information contained in this Material Safety Data Sheet is believed to be correct and is offered for your information, consideration and investigation, Teledyne Analytical Instruments assumes no responsibility of the completeness or accuracy of the information contained herein.

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