1. Product and company identification

**Product identifier**

**Trade name:** Oxylyte

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

**General use:** Electrolyte

**Details of the supplier of the safety data sheet**

- **Company name:** HAMILTON Bonaduz AG
- **Street/POB-No.:** Via Crusch 8
- **Postal Code, city:** 7402 Bonaduz, Switzerland
- **WWW:** www.hamilton.ch
- **Telephone:** +41 81 660 62 76
- **Telefax:** +41 81 660 60 70
- **Dept. responsible for information:** Susanne Nâfé-Rüdiger, Telephone: +41 81 660 62 76, E-mail SNaef@hamilton.ch

**Emergency phone number**

GIZ-Nord, Germany, Telephone: +49 (0)551-19240

2. Hazards identification

**Emergency overview**

**Appearance:**
- Form: liquid
- Color: colorless, clear

**Odor:** odorless

**Classification:**
- Corrosive to Metals - Category 1;
- Skin Irritation - Category 2;
- Eye Irritation - Category 2A;

**Hazard symbols:**

![Warning symbol]

**Signal word:** Warning

**Hazard statements:**
- May be corrosive to metals.
- Causes skin irritation.
- Causes serious eye irritation.

**Precautionary statements:**
- Keep out of reach of children.
- Wear protective gloves/protective clothing/eye protection/face protection.
- IF ON SKIN: Wash with plenty of water/soap.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.
- Absorb spillage to prevent material damage.
Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

A corrosive effect cannot be ruled out because of the pH value.

see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: inorganic, aqueous solution

Hazardous ingredients:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Designation</th>
<th>Content</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 1310-58-3</td>
<td>Potassium hydroxide</td>
<td>0.5 - 2 %</td>
<td>Corrosive to Metals - Category 1. Acute Toxicity - oral - Category 4. Skin Corrosion - Category 1A.</td>
</tr>
</tbody>
</table>

4. First aid measures

General information: In all cases of doubt, or when symptoms persist, seek medical advice.

In case of inhalation: Provide fresh air. If you feel unwell, seek medical advice.

In case of skin contact: After contact with skin, wash immediately with plenty of water. Remove contaminated clothing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Do not induce vomiting. Consult physician immediately. Rinse mouth and drink large quantities of water. Put victim at rest, cover with a blanket and keep warm.

Most important symptoms/effects, acute and delayed

Causes skin irritation. Causes serious eye irritation.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range: no data available

Auto-ignition temperature: no data available

Suitable extinguishing media: Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

Specific hazards arising from the chemical

Fires in the immediate vicinity may cause the development of dangerous vapors.

Protective equipment and precautions for firefighters:

In case of surrounding fires: Wear self-contained breathing apparatus.
6. Accidental release measures

Personal precautions: Provide adequate ventilation. Avoid contact with the substance. Wear protective equipment.

Environmental precautions: Do not allow to penetrate into soil, waterbodies or drains. If necessary notify appropriate authorities.

Methods for clean-up: Soak up with absorbent materials such as sand, siliceus earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance. Wash spill area with plenty of water.

Additional information: Render harmless: Neutralize with dilute sulphuric acid.

7. Handling and storage

Handling
Advises on safe handling: Wear protective equipment. Avoid contact with skin and eyes. Do not breathe vapor or spray.

Specific use(s) Electrolyte

Storage
Requirements for storerooms and containers: Keep container tightly closed. Store at room temperature.

Unsuitable materials: Aluminium, tin, zinc.

Hints on joint storage: Keep away from strong acids and strong alkaline material.

8. Exposure controls / personal protection

Exposure guidelines
Occupational exposure limit values:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Designation</th>
<th>Type</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10102-40-6</td>
<td>Disodium molybdate-2-hydrate</td>
<td>USA: ACGIH: TWA</td>
<td>0.5 mg/m³ soluble; inhalable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA: ACGIH: TWA</td>
<td>10 mg/m³ insoluble; inhalable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA: ACGIH: TWA</td>
<td>3 mg/m³ insoluble; respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA: OSHA: TWA</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA: OSHA: TWA</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>1310-58-3</td>
<td>Potassium hydroxide</td>
<td>ACGIH: Ceiling</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH: Ceiling</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

Engineering controls
When aerosols or vapors form: Withdraw by suction.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection Wear suitable protective clothing.
Glove material: Nitrile rubber (0.11 mm).
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection:
With correct and proper use, and under normal conditions, breathing protection is not required.

General hygiene considerations:
Avoid contact with skin and eyes. Remove contaminated clothing.
Wash hands before breaks and after work.
Have eye wash bottle or eye rinse ready at work place.

9. Physical and chemical properties
Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Form: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: colorless, clear</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>pH value</td>
<td>13</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>no data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash point/flash point range</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability</td>
<td>no data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>approx. 1.2 g/mL</td>
</tr>
<tr>
<td>Water solubility</td>
<td>miscible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>no data available</td>
</tr>
<tr>
<td>Additional information</td>
<td>no data available</td>
</tr>
</tbody>
</table>

10. Stability and reactivity
Reactivity:
May be corrosive to metals.

Chemical stability:
Product is stable under normal storage conditions.

Possibility of hazardous reactions
Reacts with aluminium and zinc. Formation of hydrogen!
Reacts with ammonium compounds: Formation of ammonia.

Conditions to avoid:
no data available

Incompatible materials:
incompatible with animal and vegetable tissues, metals
Hazardous decomposition products: Fires in the immediate vicinity may cause the development of dangerous vapors.

Thermal decomposition: no data available

11. Toxicological information

Toxicological tests

Toxicological effects:
- Acute toxicity (oral): Lack of data.
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.
- Eye damage/irritation: Eye Irritation - Category 2A = Causes serious eye irritation.
- Sensitisation to the respiratory tract: Lack of data.
- Skin sensitisation: Lack of data.
- Germ cell mutagenicity/Genotoxicity: Lack of data.
- Carcinogenicity: Lack of data.
- Reproductive toxicity: Lack of data.
- Effects on or via lactation: Lack of data.
- Specific target organ toxicity (single exposure): Lack of data.
- Specific target organ toxicity (repeated exposure): Lack of data.
- Aspiration hazard: Lack of data.

Symptoms

In case of ingestion:
Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

General remarks
A corrosive effect cannot be ruled out because of the pH value.
Information about Potassium hydroxide:
LD50 Rat, oral: 273 mg/kg.

12. Ecological information

Ecotoxicity

Aquatic toxicity:
Harmful effects on water organisms by modification of pH-value. Forms corrosive mixtures with water even if diluted.

Mobility in soil
no data available

Persistence and degradability
Further details: no data available

Additional ecological information
General information: Do not allow to enter into ground-water, surface water or drains.
13. Disposal considerations

Product
Recommendation: Dispose of waste according to applicable legislation. Do not dispose of with household waste.

Contaminated packaging
Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

14. Transport information

USA: Department of Transportation (DOT)
Identification numbers: UN1814
Proper shipping name: UN 1814, Potassium hydroxide solution
DOT hazard class or division: 8
PG: III
Label codes: 8
Special provisions: IB3, T4, TP1
Packaging - Exceptions: 154
Packaging - Non-bulk: 203
Packaging - Bulk: 241
Quantity limitations - Passenger aircraft / rail: 5 L
Quantity limitations - Cargo only: 60 L
Vessel stowage - Location: A
Vessel stowage - Other: 52.

Sea transport (IMDG)
UN number: 1814
Proper shipping name: UN 1814, POTASSIUM HYDROXIDE SOLUTION
IMDG: Class 8, Subrisk -
Packing Group: III
EmS: F-A, S-B
Limited quantities: 5 L
EQ: E1
Contaminated packaging - Instructions: P001, LP01
Contaminated packaging - Provisions: -
IBC - Instructions: IBC03
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T4
Tank instructions - Provisions: TP1
Stowage and segregation: Category A. "Separated from" acids.

Marine pollutant: No
Segregation group: none
Air transport (IATA)

UN/ID number: 1814
Proper shipping name: UN 1814, POTASSIUM HYDROXIDE SOLUTION
ICAO/IATA: Class 8
PG: III
Hazard: Corrosive
EQ: E1
Passenger Ltd Qty: Pack.Instr. Y841 - Max. Net Qty/Pkg. 1 L
Passenger: Pack.Instr. 852 - Max. Net Qty/Pkg. 5 L
Cargo: Pack.Instr. 856 - Max. Net Qty/Pkg. 60 L
Special Provisioning: A3 A803
ERG: 8L

15. Regulatory information

U.S. Federal Regulations
Disodium molybdate-2-hydrate: TSCA listed: Disodium molybdate anhydrous, CAS 7631-95-0
Potassium hydroxide: TSCA Inventory: listed
TSCA HPVC: not listed
Clean Water Act:
Hazardous Substances: RQ 1000 lbs.
Other Environmental Laws:
CERCLA: RQ 1000 lbs.
NIOSH Recommendations:
Occupational Health Guideline: 0523

National regulations - EC member states
Labeling (67/548/EEC or 1999/45/EC)
Code letter and hazard symbol:
Xi irritant

National regulations - Great Britain
Hazchem-Code: 2R

16. Other information

Text for labeling:
Contains 0.5 - 2 % Potassium hydroxide. Safety data sheet available on request.

Hazard rating systems:

<table>
<thead>
<tr>
<th>NFPA Hazard Rating</th>
<th>HMIS Version III Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health: 1 (Slight)</td>
<td>Health: 1 (Slight)</td>
</tr>
<tr>
<td>Fire: 0 (Minimal)</td>
<td>Flammability: 0 (Minimal)</td>
</tr>
<tr>
<td>Reactivity: 0 (Minimal)</td>
<td>Physical Hazard: 0 (Minimal)</td>
</tr>
</tbody>
</table>

Personal Protection: B

Reason of change: General revision
Date of first version: 9/13/2010

Department issuing data sheet
Contact person: see section 1: Dept. responsible for information
The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.