1. Identification

Product identifier

Product Name
Buffer Powder Pillows pH 4.01 ± 0.02 @ 25°C

Other means of identification

Product Code(s)
2226966

Recommended use of the chemical and restrictions on use

Recommended Use
Buffer.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company P.O.Box 389  Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number

Emergency Telephone
+1(303) 623-5716 - 24 Hour Service

2. Hazards identification

Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 5</td>
<td>(H303)</td>
</tr>
<tr>
<td>Acute toxicity - Dermal</td>
<td>Category 4</td>
<td>(H312)</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
<td>(H319)</td>
</tr>
</tbody>
</table>

Label elements

Signal word
- Warning

Hazard statements
H303 - May be harmful if swallowed
H312 - Harmful in contact with skin
H319 - Causes serious eye irritation
Exclamation mark

Precautionary statements
P312 - Call a POISON CENTER or doctor if you feel unwell
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P362 + P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/ container to an approved waste disposal plant
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

Other Hazards Known
Not applicable

### 3. Composition/information on ingredients

**Substance**
Not applicable.

**Mixture**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Synonyms</th>
<th>Percent Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Benzenedicarboxylic acid, monopotassium salt</td>
<td>877-24-7</td>
<td>Potassium biphthalate</td>
<td>90 - 100%</td>
</tr>
</tbody>
</table>

### 4. First aid measures

**Description of first aid measures**

**General advice**
Show this safety data sheet to the doctor in attendance.

**Inhalation**
Remove to fresh air.

**Eye contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

**Skin contact**
Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

**Ingestion**
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

**Self-protection of the first aider**
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**
Burning sensation.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**
Treat symptomatically.
5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

Hazardous combustion products Carbon monoxide, Carbon dioxide.

Explosion data
- Sensitivity to mechanical impact None.
- Sensitivity to static discharge None.

Special protective actions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

Other information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.

8. Exposure controls/personal protection
Control parameters

Exposure Limits
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls
Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear safety glasses with side-shields.

Hand protection
Wear suitable gloves.

Skin and body protection
Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection
No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

9. Physical and chemical properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>powder</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>red</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>4.0</td>
<td>10% Solution</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>264 °C / 507 °F</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapor density (air = 1)</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Specific gravity (water = 1 / air = 1)</td>
<td>1.66</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>log Kow ~ -2.73</td>
<td></td>
</tr>
<tr>
<td>Soil Organic Carbon-Water Partition Coefficient</td>
<td>log Koc ~ 1.91</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>
Decomposition temperature
No data available
Dynamic viscosity
Not applicable
Kinematic viscosity
Not applicable

Solubility(ies)

Water solubility

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Solubility in other solvents

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Solubility classification</th>
<th>Solubility</th>
<th>Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>None reported</td>
<td>No information available</td>
<td>No data available</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Other Information

Metal Corrosivity

Steel Corrosion Rate
Not applicable
Aluminum Corrosion Rate
Not applicable

Volatile Organic Compounds (VOC) Content
Not applicable

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Volatile organic compounds (VOC) content</th>
<th>CAA (Clean Air Act)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Benzenedicarboxylic acid, monopotassium salt</td>
<td>877-24-7</td>
<td>No data available</td>
<td>-</td>
</tr>
</tbody>
</table>

Explosive properties

Upper explosion limit
No data available
Lower explosion limit
No data available

Flammable properties

Flash point
Not applicable

Flammability Limit in Air
Upper flammability limit
No data available
Lower flammability limit
No data available

Oxidizing properties
No data available.

Bulk density
No data available

10. Stability and reactivity

Reactivity
No information available.

Chemical stability
Stable under normal conditions.

Possibility of Hazardous Reactions
None under normal processing.
Conditions to avoid
None known based on information supplied.

Incompatible materials
None known based on information supplied.

Hazardous Decomposition Products
Heating to decomposition releases toxic fumes of carbon monoxide and carbon dioxide.

11. Toxicological information

Information on Likely Routes of Exposure

Product Information

Inhalation
May cause irritation of respiratory tract.

Eye contact
Causes serious eye irritation. May cause redness, itching, and pain.

Skin contact
May cause irritation. Prolonged contact may cause redness and irritation. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.

Ingestion
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms
May cause redness and tearing of the eyes.

Acute toxicity
Based on available data, the classification criteria are not met.

Product Acute Toxicity Data
No data available.

Ingredient Acute Toxicity Data
Test data reported below.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Benzenedicarboxylic acid, monopotassium salt</td>
<td>Rat LD₅₀</td>
<td>&gt; 3200 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>(90 - 100%) CAS#: 877-24-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2-Benzenedicarboxylic acid, monopotassium salt</td>
<td>Guinea pig LD₅₀</td>
<td>&gt; 1000 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>(90 - 100%) CAS#: 877-24-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unknown acute toxicity
0 % of the mixture consists of ingredient(s) of unknown toxicity.

  0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
  0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
  0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
  0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
  0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document.
ATEmix (oral) | 3.203.00
ATEmix (dermal) | 1.101.00
ATEmix (inhalation-dust/mist) | No information available
ATEmix (inhalation-vapor) | No information available
ATEmix (inhalation-gas) | No information available

**Skin corrosion/irritation**
May cause skin irritation.

**Product Skin Corrosion/Irritation Data**
No data available.

**Ingredient Skin Corrosion/Irritation Data**
No data available.

**Serious eye damage/eye irritation**
Classification based on data available for ingredients. Irritating to eyes.

**Product Serious Eye Damage/Eye Irritation Data**
No data available.

**Ingredient Eye Damage/Eye Irritation Data**
No data available.

**Respiratory or skin sensitization**
Based on available data, the classification criteria are not met.

**Product Sensitization Data**
No data available.

**Ingredient Sensitization Data**
No data available.

**STOT - single exposure**
Based on available data, the classification criteria are not met.

**Product Specific Target Organ Toxicity Single Exposure Data**
No data available.

**Ingredient Specific Target Organ Toxicity Single Exposure Data**
No data available.

**STOT - repeated exposure**
Based on available data, the classification criteria are not met.

**Product Specific Target Organ Toxicity Repeat Dose Data**
No data available.

**Ingredient Specific Target Organ Toxicity Repeat Exposure Data**
No data available.

**Carcinogenicity**
Based on available data, the classification criteria are not met.

**Product Carcinogenicity Data**
No data available.

**Ingredient Carcinogenicity Data**
No data available.
1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | - | - | - | - | -

**Legend**

<table>
<thead>
<tr>
<th>Source</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH (American Conference of Governmental Industrial Hygienists)</td>
<td>Does not apply</td>
</tr>
<tr>
<td>IARC (International Agency for Research on Cancer)</td>
<td>Does not apply</td>
</tr>
<tr>
<td>NTP (National Toxicology Program)</td>
<td>Does not apply</td>
</tr>
<tr>
<td>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</td>
<td>Does not apply</td>
</tr>
</tbody>
</table>

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

**Product Germ Cell Mutagenicity **invitro** Data**

No data available.

**Ingredient Germ Cell Mutagenicity **invitro** Data**

No data available.

**Product Germ Cell Mutagenicity **invivo** Data**

No data available.

**Ingredient Germ Cell Mutagenicity **invivo** Data**

No data available.

**Reproductive toxicity**

Based on available data, the classification criteria are not met.

**Product Reproductive Toxicity Data**

No data available.

**Ingredient Reproductive Toxicity Data**

No data available.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

### 12. Ecological information

**Ecotoxicity**

Based on available data, the classification criteria are not met.

**Unknown aquatic toxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

**Product Ecological Data**

**Aquatic Acute Toxicity**

No data available.

**Aquatic Chronic Toxicity**

No data available.

**Ingredient Ecological Data**

**Aquatic Acute Toxicity**

No data available.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Benzenedicarboxylic acid</td>
<td>96 hours</td>
<td>None reported</td>
<td>LC_{50}</td>
<td>9323 mg/L</td>
<td>Estimation through ECOSARS</td>
</tr>
</tbody>
</table>
Aquatic Chronic Toxicity
No data available.

Persistence and degradability

Product Biodegradability Data
No data available.

Bioaccumulation

Product Bioaccumulation Data
No data available.

Partition Coefficient (n-octanol/water)  
log $K_{ow} \sim -2.73$

Mobility

Soil Organic Carbon-Water Partition Coefficient  
log $K_{oc} \sim 1.91$

Other adverse effects
No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products  
Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging  
Do not reuse empty containers.

14. Transportation information

MEX  
Not regulated

Note:  
No special precautions necessary.

TDG  
Not regulated

U.S. DOT  
Not regulated
ICAO (air)  Not regulated
IATA  Not regulated
IMDG  Not regulated
RID  Not regulated
ADR  Not regulated
ADN  Not regulated

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. Regulatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer  Not applicable
The Stockholm Convention on Persistent Organic Pollutants  Not applicable
The Rotterdam Convention  Not applicable

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Complies.</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Complies.</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Complies.</td>
</tr>
<tr>
<td>ENCS</td>
<td>Contact supplier for inventory compliance status.</td>
</tr>
<tr>
<td>IECSC</td>
<td>Complies.</td>
</tr>
<tr>
<td>KECL</td>
<td>Complies.</td>
</tr>
<tr>
<td>PICCS</td>
<td>Complies.</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies.</td>
</tr>
</tbody>
</table>

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. Other information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Personal protection</td>
</tr>
<tr>
<td>HMIS</td>
<td>Health hazards</td>
<td>Flammability</td>
<td>Physical hazards</td>
<td>Personal protection</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

Key or legend to abbreviations and acronyms used in the safety data sheet
Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>TWA</th>
<th>TWA (time-weighted average)</th>
<th>STEL</th>
<th>STEL (Short Term Exposure Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Maximum limit value</td>
<td>SKN*</td>
<td>Skin designation</td>
</tr>
</tbody>
</table>

Key literature references and sources for data used to compile the SDS

- Agency for Toxic Substances and Disease Registry (ATSDR)
- U.S. Environmental Protection Agency ChemView Database
- European Food Safety Authority (EFSA)
- EPA (Environmental Protection Agency)
- Acute Exposure Guideline Level(s) (AEGL(s))
- U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
- U.S. Environmental Protection Agency High Production Volume Chemicals
- Food Research Journal
- Hazardous Substance Database
- International Uniform Chemical Information Database (IUCLID)
- Japan GHS Classification
- Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
- NIOSH (National Institute for Occupational Safety and Health)
- National Library of Medicine's ChemID Plus (NLM CIP)
- National Library of Medicine's PubMed database (NLM PUBMED)
- National Toxicology Program (NTP)
- New Zealand's Chemical Classification and Information Database (CCID)
- Organization for Economic Co-operation and Development High Production Volume Chemicals Program
- Organization for Economic Co-operation and Development Screening Information Data Set
- RTECS (Registry of Toxic Effects of Chemical Substances)
- World Health Organization

Prepared By: Hach Product Compliance Department.

Issue Date: 07-Oct-2018

Revision Date: 08-Jan-2019

Revision Note: None

NOM-018-STPS-2015

The information is believed to be accurate, but it is not exhaustive and must be used only as guidance. It is based on the current state of knowledge of the chemical substance or mixture and is applicable to the appropriate safety precautions for the product.

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet