# SAFETY DATA SHEET



## 1. IDENTIFICATION

**Product identifier**
**Product Name** Buffer Powder Pillows pH 6.00 ± 0.05 at 25°C

**Other means of identification**
**Product Code(s)** 1405566

**Safety data sheet number** M00054

**Recommended use of the chemical and restrictions on use**
**Recommended Use** Buffer.
**Uses advised against** None.
**Restrictions on use** For Research and Development Only.

**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**
+1(303) 623-5716 - 24 Hour Service

## 2. HAZARDS IDENTIFICATION

**Classification**

**Regulatory Status**
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Serious eye damage/eye irritation | Category 1 |

**Hazards not otherwise classified (HNOC)**
Not applicable

**Label elements**

**Signal word**
Danger

**Hazard statements**

H302 - Harmful if swallowed
H318 - Causes serious eye damage

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P501 - Dispose of contents/ container to an approved waste disposal plant
P280 - Wear eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously 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

**Other Hazards Known**
Causes mild skin irritation

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**
Not applicable

**Mixture**

**Percent ranges are used where confidential product information is applicable.**

| Chemical name | CAS No | Percent Range | HMRIC # |
|---|---|---|---|
| **Butanedioic acid** | 110-15-6 | 3 - 7% | - |

## 4. FIRST AID MEASURES

**Description of first aid measures**

**General advice** No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury.

**Inhalation** Remove to fresh air.

**Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact** Wash skin with soap and water.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

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

**Symptoms** See Section 11 for additional Toxicological Information.

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

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **U.S. Notice** | Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals. |

**Personal precautions, protective equipment and emergency procedures**

| | |
|---|---|
| **Personal precautions** | Ensure adequate ventilation. |

**Environmental precautions**

| | |
|---|---|
| **Environmental precautions** | See Section 12 for additional ecological information. |

**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** | Take up mechanically, placing in appropriate containers for disposal. |
| **Prevention of secondary hazards** | Clean contaminated objects and areas thoroughly observing environmental regulations. |
| **Reference to other sections** | See section 8 for more information. See section 13 for more information. |

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

| | |
|---|---|
| **Advice on safe handling** | Handle in accordance with good industrial hygiene and safety practice. |

**Conditions for safe storage, including any incompatibilities**

| | |
|---|---|
| **Storage Conditions** | Keep containers tightly closed in a dry, cool and well-ventilated place. |
| **Flammability class** | Not applicable |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

| | |
|---|---|
| **Exposure Guidelines** | 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<br>Eyewash stations<br>Ventilation systems. |

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **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. |
| **Hand Protection** | Wear suitable gloves. |
| **Eye/face protection** | Wear safety glasses with side shields (or goggles). |
| **Skin and body protection** | No special protective equipment required. |
| **General Hygiene Considerations** | Handle in accordance with good industrial hygiene and safety practice. |
| **Environmental exposure controls** | Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water. |
| **Thermal hazards** | None under normal processing. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical state** | Solid | | |
| **Appearance** | powder | **Color** | white |
| **Odor** | None | **Odor threshold** | No data available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **Molecular weight** | No data available | |
| **pH** | 6 | .6% Solution |
| **Melting point / freezing point** | 185 °C / 365 °F | |
| **Initial boiling point and boiling range** | No data available | |
| **Evaporation rate** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Relative vapor density** | No data available | |
| **Specific gravity - VALUE 1** | 1.72 | |
| **Partition coefficient** | No data available | |
| **Soil Organic Carbon-Water Partition Coefficient** | No data available | |
| **Autoignition temperature** | No data available | |
| **Decomposition temperature** | No data available | |
| **Dynamic viscosity** | Not applicable | |
| **Kinematic viscosity** | Not applicable | |

**Solubility(ies)**

**Water solubility**

| Water solubility classification | Water solubility | Water Solubility Temperature |
|---|---|---|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

**Solubility in other solvents**

| Chemical Name | Solubility classification | Solubility | Solubility Temperature |
|---|---|---|---|
| Acid | Soluble | > 1000 mg/L | 25 °C / 77 °F |

**Other information**

**Metal Corrosivity**

**Steel Corrosion Rate** Not applicable
**Aluminum Corrosion Rate** Not applicable

**Volatile Organic Compounds (VOC) Content**
Not applicable

| Chemical name | CAS No | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|---|---|---|---|
| Butanedioic acid | 110-15-6 | No data available | X |

**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**
Not applicable.

**Chemical stability**
Stable under normal conditions.

**Explosion data**
**Sensitivity to Mechanical Impact** None.
**Sensitivity to Static Discharge** None.

**Possibility of hazardous reactions**
None under normal processing.

**Hazardous polymerization**

None under normal processing.

**Conditions to avoid**
None known based on information supplied.

**Incompatible materials**
Strong oxidizing agents, strong acids, and strong bases.

**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** | No known effect based on information supplied. |
| **Eye contact** | No known effect based on information supplied. |
| **Skin contact** | No known effect based on information supplied. |
| **Ingestion** | No known effect based on information supplied. |
| **Symptoms** | No information available. |

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

**Mixture**
No data available.

**Ingredient Acute Toxicity Data**
No data available.

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---|---|---|---|---|
| Butanedioic acid (3 - 7%) CAS#: 110-15-6 | Rat $LD_{50}$ | 2260 mg/kg | None reported | None reported | Vendor SDS |

**Acute Toxicity Estimations (ATE)**

**The following values are calculated based on chapter 3.1 of the GHS document**

| | |
|---|---|
| **ATEmix (oral)** | 1,236.00 mg/kg |
| **ATEmix (dermal)** | No information available |
| **ATEmix (inhalation-dust/mist)** | No information available |
| **ATEmix (inhalation-vapor)** | No information available |
| **ATEmix (inhalation-gas)** | No information available |

**Skin corrosion/irritation**
Based on available data, the classification criteria are not met.

**Mixture**
No data available.

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

**Serious eye damage/irritation**
Based on available data, the classification criteria are not met.

**Mixture**
No data available.

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

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|---|---|---|---|---|---|
| Butanedioic acid (3 - 7%) CAS#: 110-15-6 | Standard Draize Test | Rabbit | 0.750 mg | None reported | Corrosive to eyes | ECHA |

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

**Mixture**
No data available.

**Ingredient Sensitization Data**
No data available.

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

**Mixture**
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.

**Mixture**
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.

**Mixture**
No data available.

**Ingredient Carcinogenicity Data**
No data available.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|---|
| Butanedioic acid | 110-15-6 | - | - | - | - |

**Legend**

| | |
|---|---|
| **ACGIH (American Conference of Governmental Industrial Hygienists)** | Does not apply |
| **IARC (International Agency for Research on Cancer)** | Does not apply |
| **NTP (National Toxicology Program)** | Does not apply |
| **OSHA** | Does not apply |

**Germ cell mutagenicity**
Based on available data, the classification criteria are not met.

**Mixture** *invitro* **Data**
No data available.

**Substance** *invitro* **Data**
No data available.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|---|---|---|---|---|---|
| Butanedioic acid (3 - 7%) CAS#: 110-15-6 | DNA inhibition | Human fibroblast | None reported | None reported | Positive test result for mutagenicity | RTECS |

**Mixture** *invivo* **Data**
No data available.

**Substance** *invivo* **Data**
No data available.

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

**Mixture**
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.

**Mixture**

**Aquatic Acute Toxicity**
No data available.

**Aquatic Chronic Toxicity**
No data available.

**Substance**

**Aquatic Acute Toxicity**
No data available.

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|---|---|---|---|---|---|
| Butanedioic acid (3 - 7%) CAS#: 110-15-6 | 96 hours | None reported | $LC_{50}$ | None reported | ECOSARS |
| **Chemical name** | **Exposure time** | **Species** | **Endpoint type** | **Reported dose** | **Key literature references and sources for data** |
| Butanedioic acid | 48 Hours | None reported | $EC_{50}$ | 918830 mg/L | ECOSARS |

| | | | | | |
|---|---|---|---|---|---|
| (3 - 7%)<br>CAS#: 110-15-6 | | | | | |
| **Chemical name** | **Exposure time** | **Species** | **Endpoint type** | **Reported dose** | **Key literature references and sources for data** |
| Butanedioic acid<br>(3 - 7%)<br>CAS#: 110-15-6 | 96 hours | None reported | $EC_{50}$ | 254630 mg/L | ECOSARS |

**Aquatic Chronic Toxicity**
No data available.

**Persistence and degradability**

**Mixture**
No data available.

Bioaccumulation
There is no data for this product
**Mixture**
No data available.

**Mobility**

**Soil Organic Carbon-Water Partition Coefficient** No data available

**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.

**Special instructions for disposal** Dilute to 3 to 5 times the volume with cold water. Open cold water tap completely, slowly pour the material to the drain.

## 14. TRANSPORT INFORMATION

**DOT** Not regulated

**TDG** Not regulated

**IATA** Not regulated

**IMDG** 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

**National Inventories**

| | |
|---|---|
| **TSCA** | Complies |
| **DSL/NDSL** | Complies |

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**International Inventories**

| | |
|---|---|
| **EINECS/ELINCS** | Complies |
| **ENCS** | Complies |
| **IECSC** | Complies |
| **KECL** | Complies |
| **PICCS** | Complies |
| **TCSI** | Complies |
| **AICS** | Complies |
| **NZIoC** | Complies |

**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
**TCSI** - Taiwan Chemical Substances Inventory
**AICS** - Australian Inventory of Chemical Substances
**NZIoC** - New Zealand Inventory of Chemicals

### US Federal Regulations

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

| | |
|---|---|
| **Acute health hazard** | Yes |
| **Chronic Health Hazard** | No |
| **Fire hazard** | No |
| **Sudden release of pressure hazard** | No |
| **Reactive Hazard** | No |

**CWA (Clean Water Act)**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

### US State Regulations

**California Proposition 65**
This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations.

**U.S. EPA Label Information**

| Chemical name | FIFRA | FDA |
|---|---|---|
| Butanedioic acid | - | 21 CFR 184.1091 |

## 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

**Special Comments**
None

**Additional information**

**Global Automotive Declarable Substance List (GADSL)**
Not applicable
**NFPA and HMIS Classifications**

| NFPA | Health hazards - 0 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
|---|---|---|---|---|
| **HMIS** | **Health hazards** - 0 | **Flammability** - 0 | **Physical hazards** - 0 | **Personal protection** - X - I |

**Key or legend to abbreviations and acronyms used in the safety data sheet**

| | |
|---|---|
| ACGIH | ACGIH (American Conference of Governmental Industrial Hygienists) |
| ATSDR | ATSDR (Agency for Toxic Substances and Disease Registry) |
| CCRIS | CCRIS (Chemical Carcinogenesis Research Information System) |
| CDC | CDC (Center for Disease Control) |
| CEPA | CEPA (Canadian Environmental Protection Agency) |
| CICAD | CICAD (Concise International Chemical Assessment Documents) |
| ECHA | ECHA (The European Chemicals Agency) |
| EEA | EEA (European Environment Agency) |
| EPA | EPA (Environmental Protection Agency) |
| ERMA | ERMA (New Zealands Environmental Risk Management Authority) |
| ECOSARS | Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™ |
| FDA | FDA (Food & Drug Administration) |
| GESTIS | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| HSDB | HSDB (Hazardous Substances Data Bank) |
| INERIS | INERIS (The National Industrial Environment and Risks Institute) |
| IPCS INCHEM | IPCS INCHEM (International Programme on Chemical Safety) |
| IUCLID | IUCLID (The International Uniform Chemical Information Database) |
| NITE | Japan National Institute of Technology and Evaluation (NITE) |
| NIH | NIH (National Institutes of Health) |
| NIOSH | NIOSH (National Institute for Occupational Safety and Health) |
| LOLI | LOLI (List of Lists - An International Chemical Regulatory Database) |
| NDF | no data |
| NICNAS | Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) |
| NIOSH IDLH | Immediately Dangerous to Life or Health |
| OSHA | OSHA (Occupational Safety and Health Administration of the US Department of Labor) |
| PEEN | PEEN (Pan European Ecological Network) |
| RTECS | RTECS (Registry of Toxic Effects of Chemical Substances) |
| SIDS | SIDS (Screening Information Dataset) for High Volume Chemicals |
| SYKE | The Finnish Environment Institute (SYKE) |
| USDA | USDA (United States Department of Agriculture) |
| USDC | USDC (United States Department of Commerce) |
| WHO | WHO (World Health Organization) |

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

| | | | |
|---|---|---|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. |
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

| | |
|---|---|
| **Prepared By** | Hach Product Compliance Department |
| **Issue Date** | 15-Sep-2021 |
| **Revision Date** | 26-Jan-2024 |
| **Revision Note** | None |

**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.**



**End of Safety Data Sheet**