



Material Safety Data Sheet (MSDS)  
Revision Date: 11-27-2022

**Kit Name:** Citrate Buffer (pH6.0, 10×) 1L  
**Catalog#:** VB-6005

**Components:**

|         |                                |
|---------|--------------------------------|
| VB-6005 | Citrate Buffer (pH6.0, 10×) 1L |
|---------|--------------------------------|

## VB-6005 Citrate Buffer (pH6.0, 10×) MSDS

### 1. Identification of the Substance/Mixture and Company

|                              |  |
|------------------------------|--|
| <b>Product Name</b>          | Citrate Buffer (pH6.0, 10×) 1L   |
| <b>Catalog#</b>              | VB-6005  |
| <b>Product Description</b>   | Component  |
| <b>Manufacturer/Supplier</b> | VitroVivo Biotech, LLC. 405 E Gude Dr., Suite 214, Rockville, MD 20850 |
| <b>Tel/fax Number</b>        | Phone: 301-500-0499; Toll free: 1-800-260-9817 Fax: 844-248-6208       |

### 2. Hazards Identification

#### Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)  
Based on available data, the classification criteria are not met

#### Label Elements

None required

#### Hazards not otherwise classified (HNOC)

None identified

### 3. Composition/information on ingredients

**Mixtures Description:** Mixture of the substances listed below.

#### **Composition:**

| <b>Component</b> | <b>CAS#</b> |
|------------------|-------------|
| Citrate acid     | 77-92-9     |
| Sodium hydroxide | 1310-73-2   |

### 4. First Aid Measures

|                     |   |
|---------------------|---|
| <b>Eye Contact</b>  | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.         |
| <b>Skin Contact</b> | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur. |
| <b>Inhalation</b>   | Remove to fresh air. Get medical attention immediately if symptoms occur.   |
| <b>Ingestion</b>    | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.                   |

**Most important symptoms and effects** None reasonably foreseeable.

**Notes to Physician** Treat symptomatically

### 5. Firefighting Measures

|                                       |                          |
|---------------------------------------|--------------------------|
| <b>Suitable Extinguishing Media</b>   | Not combustible.         |
| <b>Unsuitable Extinguishing Media</b> | No information available |
| <b>Flash Point</b>                    | No information available |
| <b>Method -</b>                       | No information available |
| <b>Autoignition Temperature</b>       | No information available |
| <b>Explosion Limits</b>               |                          |
| <b>Upper</b>                          | No data available        |
| <b>Lower</b>                          | No data available        |

|   |                          |
|---|--------------------------|
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Sodium oxides.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| Health | Flammability | Instability | Physical hazards |
| 1      | 0            | 0           | -                |

**6. Accidental Release Measures**

|                                  |  |
|----------------------------------|--|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment as required.                        |
| <b>Environmental Precautions</b> | Should not be released into the environment. See Section 12 for additional Ecological Information. |

**Methods for Containment and Clean Up**      Sweep up and shovel into suitable containers for disposal.

**7. Handling and Storage**

**Handling**      Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

**Storage**      Keep refrigerated.

**8. Exposure Controls/Personal Protection**

**Exposure Guidelines**      This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures**      None under normal use conditions.

**Personal Protective Equipment**

**Eye/face Protection**      Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**      Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**      No protective equipment is needed under normal use conditions.

**Hygiene Measures**      Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and Chemical Properties**

|                            |                          |
|----------------------------|--------------------------|
| <b>Physical State</b>      | Liquid                   |
| <b>Appearance</b>          | Colorless                |
| <b>Odor</b>                | Odorless                 |
| <b>Odor Threshold</b>      | No information available |
| <b>pH</b>                  | 4 - 6                    |
| <b>Melting Point/Range</b> | No data available        |
| <b>Boiling Point/Range</b> | No information available |
| <b>Flash Point</b>         | No information available |

|  |                          |
|--|--------------------------|
| Evaporation Rate                       | No information available |
| Flammability (solid,gas)               | Not applicable           |
| Flammability or explosive limits       |                          |
| Upper                                  | No data available        |
| Lower                                  | No data available        |
| Vapor Pressure                         | No information available |
| Vapor Density                          | No information available |
| Specific Gravity                       | No information available |
| Solubility                             | No information available |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | No information available |
| Decomposition Temperature              | No information available |
| Viscosity                              | No information available |

#### 10 Stability and Reactivity

|                          |  |
|--------------------------|--|
| Reactive Hazard          | None known, based on information available |
| Stability                | Stable under normal conditions.            |
| Conditions to Avoid      | Incompatible products.                     |
| Incompatible Materials   | Oxidizing agent                            |
| Hazardous Decomposition  | Products Sodium oxides                     |
| Hazardous Polymerization | Hazardous polymerization does not occur.   |
| Hazardous Reactions      | None under normal processing.              |

#### 11. Toxicological Information

##### Acute Toxicity

##### Product Information

|             |   |
|-------------|---|
| Oral LD50   | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| Dermal LD50 | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| Vapor LC50  | Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.    |

##### Component Information

| Component   | LD50 Oral  | LD50 Dermal     | LC50 Inhalation |
|-------------|--|-----------------|-----------------|
| Citric acid | LD50 = 3 g/kg ( Rat )<br>LD50 = 3000 mg/kg ( Rat ) | >2 g/kg ( Rat ) | Not listed      |

**Toxicologically Synergistic Products** No information available

##### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|   |   |
|---|---|
| Irritation                                | No information available                                      |
| Sensitization                             | No information available                                      |
| Carcinogenicity                           | No information available                                      |
| Mutagenic Effects                         | No information available                                      |
| Reproductive Effects                      | No information available                                      |
| Developmental Effects                     | No information available                                      |
| Teratogenicity                            | No information available                                      |
| STOT - single exposure                    | None known  |
| STOT - repeated exposure                  | None known  |
| Aspiration hazard                         | No information available                                      |
| Symptoms / effects,both acute and delayed | No information available                                      |
| Endocrine Disruptor Information           | No information available                                      |
| Other Adverse Effects                     | The toxicological properties have not been fully investigated |

## 12. Ecological Information

### Ecotoxicity

| Component   | Freshwater Algae | Freshwater Fish                         | Microtox  | Water Flea          |
|-------------|------------------|---|---|---------------------|
| Citric acid | Not listed       | Leuciscus idus: LC50 = 440-760 mg/L/96h | Photobacterium phosphoreum: EC50 = 14 mg/L/15 min | EC50 = 120 mg/L/72h |

**Persistence and Degradability** Miscible with water Persistence is unlikely based on information available.  
**Bioaccumulation/ Accumulation** No information available.  
**Mobility** Will likely be mobile in the environment due to its water solubility.  
**Component Citric acid** log Pow -1.72

## 13. Disposal Considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport Information

**DOT** Not regulated  
**TDG** Not regulated  
**IATA** Not regulated  
**IMDG/IMO** Not regulated

## 15. Regulatory Information

### United States of America Inventory

| Component        | CAS-No    | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|------------------|-----------|------|---|-----------------------------|
| Citric acid      | 77-92-9   | X    | ACTIVE  | -                           |
| Sodium hydroxide | 1310-73-2 | -    | -   | -                           |

### Legend:

**TSCA** - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

| Component   | CAS-No    | DSL | NDSL | EINECS    | PICCS | ENCS | AICS | IECSC | KECL     |
|-------------|-----------|-----|------|-----------|-------|------|------|-------|----------|
| Citric acid | 77-92-9   | X   | -    | 231-791-2 | X     | X    | X    | X     | KE-35400 |
| NaOH        | 1310-73-2 | -   | -    | -         | X     | -    | X    | X     | -        |

### U.S. Federal Regulations

**SARA 313** Not applicable  
**SARA 311/312 Hazard Categories** See section 2 for more information  
**CWA (Clean Water Act)** Not applicable  
**Clean Air Act** Not applicable  
**OSHA** - Occupational Safety and Health Administration Not applicable  
**CERCLA** Not applicable  
**California Proposition 65** This product does not contain any Proposition 65 chemicals

U.S. Department of Transportation  
 Reportable Quantity (RQ): N

DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**16. Other Information**

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

**ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

**IMDG:** International Maritime Code for Dangerous Goods

**DOT:** US Department of Transportation

**IATA:** International Air Transport Association

**ACGIH:** American Conference of Governmental Industrial Hygienists

**NFPA:** National Fire Protection Association (USA)

**HMIS:** Hazardous Materials Identification System (USA)

**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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