# SAFETY DATA SHEET

According to JIS Z 7253:2019
**Revision date** 11-Jun-2024
Revision Number 3.03

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **Product Name** | pH 4.25 Sodium Citrate Buffer Solution |
| **Product Code** | 199-07185 |

**Supplier** FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Fax: +81-6-6203-2029
**Emergency telephone number** +81-6-6203-3741 / +81-3-3270-8571
**Recommended uses** For research use only
**Restrictions on use** Seek expert judgment when using for purposes other than those recommended.

## Section 2: HAZARDS IDENTIFICATION

**GHS classification**
**Classification of the substance or mixture**
**Acute aquatic toxicity** Category 3
**Chronic aquatic toxicity** Category 3

**Pictograms**
**Signal word** None

**Hazard statements**
H402 - Harmful to aquatic life
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements-(Prevention)**
• Avoid release to the environment
**Precautionary statements-(Response)**
**Precautionary statements-(Storage)**
• Not applicable
**Precautionary statements-(Disposal)**
• Dispose of contents/container to an approved waste disposal plant

**Others**
**Other hazards** Not available

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Single Substance or Mixture** Mixture

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|---|---|---|---|---|---|
| Water | 70 - 80 | 18.02 | - | - | 7732-18-5 |
| Trisodium citrate dihydrate | 10 - 20 | 294.10 | (2)-1323 | * | 6132-04-3 |
| 2,2'-Thiodiethanol | <6.0 | 122.19 | (2)-470 | * | 111-48-8 |
| Citric Acid Monohydrate | <2.0 | 210.14 | (2)-1318 | * | 5949-29-1 |
| Polyoxyethylene Lauryl Ether | <1.0 | 1199.54 | (7)-97 | * | 9002-92-0 |
| Sodium Chloride | <1.0 | 58.44 | (1)-236 | * | 7647-14-5 |

| | | | | | |
|---|---|---|---|---|---|
| Octanoic Acid | <1.0 | 144.21 | (2)-608 | * | 124-07-2 |

**Note on ISHL No.:** * in the table means announced chemical substances.

## Section 4: FIRST AID MEASURES

**Inhalation**
Remove to fresh air. If symptoms persist, call a physician.
**Skin contact**
Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.
**Eye contact**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.
**Ingestion**
Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.
**Protection of first-aiders**
Use personal protective equipment as required.

## Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
**Unsuitable extinguishing media**
No information available
**Specific hazards arising from the chemical product**
Thermal decomposition can lead to release of irritating and toxic gases and vapors.
**Special extinguishing method**
No information available
**Special protective actions for fire-fighters**
Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.
**Environmental precautions**
To be careful not discharged to the environment without being properly handled waste water contaminated.
**Methods and materials for contaminent and methods and materials for cleaning up**
Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.
**Recoverly, neutralization**
No information available
**Secondary disaster prevention measures**
Clean contaminated objects and areas thoroughly observing environmental regulations.

## Section 7: HANDLING AND STORAGE

**Handling**
**Technical measures**
Avoid contact with alkaline substances. Use with local exhaust ventilation.
**Precautions**

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

**Safety handling precautions**

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

**Storage**

**Safe storage conditions**

| | |
|---|---|
| **Storage conditions** | Store away from sunlight in well-ventilated place at room temperature (preferably cool). Keep container tightly closed. |
| **Safe packaging material** | Polyethylene |
| **Incompatible substances** | alkaline substances |

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls**

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

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

**Personal protective equipment**

| | |
|---|---|
| **Respiratory protection** | Protective mask |
| **Hand protection** | chemical protective gloves ( JIS T 8116 ) |
| **Eye protection** | protective eyeglasses or chemical safety goggles (JIS T 8147) |
| **Skin and body protection** | Long-sleeved work clothes |

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as ”Chemical Substances Hazardous to Skin, etc.”, use appropriate protective equipment to them.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Form** | |
| **Color** | colorless |
| **Turbidity** | clear |
| **Appearance** | liquid |
| **Odor** | no data available |
| **Melting point/freezing point** | no data available |
| **Boiling point, initial boiling point and boiling range** | no data available |
| **Flammability** | no data available |
| **Evaporation rate:** | no data available |
| **Flammability (solid, gas):** | no data available |
| **Upper/lower flammability or explosive limits** | |
| **Upper：** | no data available |
| **Lower：** | no data available |
| **Flash point** | no data available |
| **Auto-ignition temperature:** | no data available |
| **Decomposition temperature:** | no data available |
| **pH** | 4.21 - 4.29 (25°C) |
| **Viscosity (coefficient of viscosity)** | no data available |
| **Dynamic viscosity** | no data available |
| **Solubilities** | water and Ethanol Miscible at any arbitrary ratio . |
| **n-Octanol/water partition coefficient:(log Pow)** | no data available |
| **Vapour pressure** | no data available |
| **Specific Gravity / Relative density** | no data available |
| **Vapour density** | no data available |

**Particle characteristics** no data available

## Section 10: STABILITY AND REACTIVITY

**Stability**

**Reactivity** no data available
**Chemical stability** Stable under recommended storage conditions.

**Hazardous reactions**
None under normal processing

**Conditions to avoid**
Extremes of temperature and direct sunlight

**Incompatible materials**
alkaline substances

**Hazardous decomposition products**
Carbon monooxide (CO), Carbon dioxide (CO2), Sulfur oxides (SOx)

## Section 11: TOXICOLOGICAL INFORMATION

**Acute toxicity**

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| 2,2'-Thiodiethanol | 6610 mg/kg ( Rat ) | 4 mg/kg ( Rat ) | N/A |
| Polyoxyethylene Lauryl Ether | 300 - 2000 mg/kg ( Rat ) | > 2000 mg/kg ( Rat ) | N/A |
| Octanoic Acid | 10080 mg/kg ( Rat ) | > 5 g/kg ( Rabbit ) | N/A |

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas- source information |
|---|---|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

| Chemical Name | Acute toxicity -inhalation vapor- source information | Acute toxicity -inhalation dust- source information | Acute toxicity -inhalation mist- source information |
|---|---|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

**Skin irritation/corrosion**

| Chemical Name | Skin corrosion/irritation source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**Serious eye damage/ irritation**

| Chemical Name | Serious eye damage/irritation source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**Respiratory or skin sensitization**

| Chemical Name | Respiratory or Skin sensitization source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**Reproductive cell mutagenicity**

| Chemical Name | germ cell mutagencity source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**Carcinogenicity**

| Chemical Name | Carcinogenicity source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |

| | |
|---|---|
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**Reproductive toxicity**

| Chemical Name | Reproductive toxicity source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**STOT-single exposure**

| Chemical Name | STOT -single exposure- source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**STOT-repeated exposure**

| Chemical Name | STOT -repeated exposure- source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

**Aspiration hazard**

| Chemical Name | Aspiration Hazard source information |
|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. |

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity**

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| 2,2'-Thiodiethanol | *ErC50:Desmodesmus subspicatus >500 mg/L 72 h* | *LC50:Leuciscus idus >10000 mg/L 96 h* | *EC50: Daphnia magna >500 mg/L 48 h* |
| Polyoxyethylene Lauryl Ether | *ErC50 : Desmodesmus 0.237 mg/L 72 h* | *N/A* | *N/A* |
| Sodium Chloride | *N/A* | *LC50 : Lepomis macrochirus 5560 - 6080 mg/L 96 h*<br>*LC50 : Lepomis macrochirus 12946 mg/L 96 h*<br>*LC50 : Pimephales promelas 6020 - 7070 mg/L 96 h*<br>*LC50 : Pimephales promelas 7050 mg/L 96 h*<br>*LC50 : Pimephales promelas 6420 - 6700 mg/L 96 h*<br>*LC50 : Oncorhynchus mykiss 4747 - 7824 mg/L 96 h* | *EC50 : Daphnia magna 1000 mg/L 48 h*<br>*EC50 : Daphnia magna 340.7 - 469.2 mg/L 48 h* |
| Octanoic Acid | *N/A* | *LC50 : Brachydanio rerio 110 mg/L 96 h*<br>*LC50 : Oryzias latipes 310 mg/L 96 h* | *EC50 : Daphnia magna 170 mg/L 24 h* |

**Other data**

| Chemical Name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|---|---|---|
| 2,2'-Thiodiethanol | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Polyoxyethylene Lauryl Ether | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

**Persistence and degradability** No information available
**Bioaccumulative potential** No information available
**Mobility in soil** No information available
**Hazard to the ozone layer** No information available

## Section 13: DISPOSAL CONSIDERATIONS

**Waste from residues**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated container and contaminated packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

## Section 14: TRANSPORT INFORMATION

| | |
|---|---|
| **ADR/RID** | Not regulated |
| **UN number** | - |
| **Proper shipping name:** | |
| **UN classfication** | |
| **Subsidiary hazard class** | |
| **Packing group** | |
| **Marine pollutant** | Not applicable |
| **IMDG** | Not regulated |
| **UN number** | - |
| **Proper shipping name:** | |
| **UN classfication** | |
| **Subsidiary hazard class** | |
| **Packing group** | |
| **Marine pollutant (Sea)** | Not applicable |
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | No information available |
| **IATA** | Not regulated |
| **UN number** | - |
| **Proper shipping name:** | |
| **UN classfication** | |
| **Subsidiary hazard class** | |
| **Packing group** | |
| **Environmentally Hazardous Substance** | Not applicable |

## Section 15: REGULATORY INFORMATION

**Japanese regulations**

| | |
|---|---|
| **Fire Service Act** | Not applicable |
| **Poisonous and Deleterious Substances Control Law** | Not applicable |
| **Industrial Safety and Health Act** | Not applicable |
| **Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc** | Priority Assessment Chemical Substances (Law Article 2, Para.5) |
| **Regulations for the carriage and storage of dangerous goods in ship** | Not applicable |
| **Civil Aeronautics Law** | Not applicable |
| **Pollutant Release and Transfer Register Law (2023.4.1-)** | Not applicable |
| **Export Trade Control Order** | Not applicable |

## Section 16: OTHER INFORMATION

| | |
|---|---|
| **Key literature references and sources for data etc.** | NITE: National Institute of Technology and Evaluation (JAPAN)<br>://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop<br>IATA dangerous Goods Regulations<br>RTECS:Registry of Toxic Effects of Chemical Substances<br>Japan Industrial Safety and Health Association GHS Model SDS<br>Dictionary of Synthetic Oraganic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.<br>Chemical Dictionary, Kyouritsu Publishing Co., Ltd.<br>etc |
| **Record of SDS revisions** | The following contents were revised. Prodauct and company Identification. Hazards identification. Composition/information on ingredients. Handling and storage. Exposure controls/personal protection. Physical and chemical properties. Stability and reactivity. Toxicological information. Ecological information. Regulatory information. |

**Disclaimer**

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
GHS Classification is according to JIS Z 7252:2019. *JIS: Japanese Industrial Standards

**End of Safety Data Sheet**