# SAFETY DATA SHEET

**Creation Date** 28-January-2010 **Revision Date** 28-December-2021 **Revision Number** 5

## 1. Identification

**Product Name** **Buffer Solution, pH 4.00, Color-Coded Red. Certified**

**Cat No. :** **AC611040000; AC611040040; AC611045000**

**Synonyms** No information available

**Recommended Use** Laboratory chemicals.
**Uses advised against** Food, drug, pesticide or biocidal product use.

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

**Company**
**Importer/Distributor**
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

**Manufacturer**
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

**Emergency Telephone Number** For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
**CHEMTREC** Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

## 2. Hazard(s) identification

**Classification**

**WHMIS 2015 Classification** Not classified under the Hazardous Products Regulations (SOR/2015-17)

Based on available data, the classification criteria are not met

**Label Elements**
None required

## 3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|---|---|---|
| Water | 7732-18-5 | 98.91 |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | 1.0 |

| | | |
|---|---|---|
| Formaldehyde | 50-00-0 | 0.05 |
| Methanol | 67-56-1 | 0.02 |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | 16423-68-0 | 0.02 |

## 4. First-aid measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

**Inhalation** Remove to fresh air. Get medical attention immediately if symptoms occur.

**Ingestion** Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms/effects** None reasonably foreseeable.
**Notes to Physician** Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

**Unsuitable Extinguishing Media** No information available

**Flash Point** Not applicable
**Method -** No information available

**Autoignition Temperature** No information available
**Explosion Limits**
**Upper** No data available
**Lower** No data available
**Sensitivity to Mechanical Impact** No information available
**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**
Thermal decomposition can lead to release of irritating gases and vapors. None reasonably foreseeable.

**Hazardous Combustion Products**
Thermal decomposition can lead to release of irritating gases and vapors.
**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 | N/A |

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation.
**Environmental Precautions** Should not be released into the environment.

**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 containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. None known.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component | Alberta | British Columbia | Ontario TWAEV | Quebec | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|---|---|---|---|
| Formaldehyde | Ceiling: 1 ppm<br>Ceiling: 1.3 mg/m³<br>TWA: 0.75 ppm<br>TWA: 0.9 mg/m³ | TWA: 0.1 ppm<br>STEL: 0.3 ppm | TWA: 0.1 ppm<br>STEL: 1 ppm | Ceiling: 2 ppm<br>Ceiling: 3 mg/m³ | TWA: 0.1 ppm<br>STEL: 0.3 ppm | (Vacated) TWA: 3 ppm<br>(Vacated) STEL: 10 ppm<br>(Vacated) Ceiling: 5 ppm<br>TWA: 0.75 ppm<br>STEL: 2 ppm | IDLH: 20 ppm<br>TWA: 0.016 ppm<br>Ceiling: 0.1 ppm |
| Methanol | TWA: 200 ppm<br>TWA: 262 mg/m³<br>STEL: 250 ppm<br>STEL: 328 mg/m³<br>Skin | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | TWA: 200 ppm<br>TWA: 262 mg/m³<br>STEL: 250 ppm<br>STEL: 328 mg/m³<br>Skin | TWA: 200 ppm<br>STEL: 250 ppm<br>Skin | (Vacated) TWA: 200 ppm<br>(Vacated) TWA: 260 mg/m³<br>(Vacated) STEL: 250 ppm<br>(Vacated) STEL: 325 mg/m³<br>Skin<br>TWA: 200 ppm<br>TWA: 260 mg/m³ | IDLH: 6000 ppm<br>TWA: 200 ppm<br>TWA: 260 mg/m³<br>STEL: 250 ppm<br>STEL: 325 mg/m³ |

**Legend**

*ACGIH - American Conference of Governmental Industrial Hygienists*
*OSHA - Occupational Safety and Health Administration*
*NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health*

**Engineering Measures**

None under normal use conditions.

**Personal protective equipment**

**Eye 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.

**Hand Protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

| Glove material | Breakthrough time | Glove thickness | Glove comments |
|---|---|---|---|
| Natural rubber<br>Nitrile rubber<br>Neoprene<br>PVC | See manufacturers recommendations | - | Splash protection only |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

No protective equipment is needed under normal use conditions.

**Recommended Filter type:** Particle filter

**Environmental exposure controls**
No information available.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Liquid |
| **Appearance** | Red |
| **Odor** | Odorless |
| **Odor Threshold** | No information available |
| **pH** | 4.0 |
| **Melting Point/Range** | 0 °C / 32 °F |
| **Boiling Point/Range** | 100 °C / 212 °F |
| **Flash Point** | Not applicable |
| **Evaporation Rate** | 1.0 (ether = 1) |
| **Flammability (solid,gas)** | Not applicable |
| **Flammability or explosive limits** | |
| **Upper** | No data available |
| **Lower** | No data available |
| **Vapor Pressure** | No information available |
| **Vapor Density** | 0.7 (Water = 1.0) |
| **Specific Gravity** | 1.0 |
| **Solubility** | Soluble in water |
| **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** | Excess heat. |
| **Incompatible Materials** | None known |
| **Hazardous Decomposition Products** | Thermal decomposition can lead to release of irritating gases and vapors |
| **Hazardous Polymerization** | Hazardous polymerization does not occur. |
| **Hazardous Reactions** | None under normal processing. |

## 11. Toxicological information

**Acute Toxicity**

| | |
|---|---|
| **Product Information** | No acute toxicity information is available for this product |
| **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 |
|---|---|---|---|
| Water | - | - | - |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | LD50 > 3200 mg/kg ( Rat ) | >1000 mg/kg | Not listed |
| Formaldehyde | 500 mg/kg (Rat) | LD50 = 270 mg/kg (Rabbit) | 0.578 mg/L (Rat) 4 h |
| Methanol | LD50 = 1187 – 2769 mg/kg (Rat) | LD50 = 17100 mg/kg ( Rabbit ) | LC50 = 128.2 mg/L ( Rat ) 4 h |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | Not listed | LD50 > 2000 mg/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** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Water | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Formaldehyde | 50-00-0 | Group 1 | Known | A1 | X | A2 |
| Methanol | 67-56-1 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | 16423-68-0 | Not listed | Not listed | Not listed | Not listed | Not listed |

*IARC (International Agency for Research on Cancer)*

*NTP: (National Toxicity Program)*

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

*Mexico - Occupational Exposure Limits - Carcinogens*

*IARC (International Agency for Research on Cancer)*
*Group 1 - Carcinogenic to Humans*
*Group 2A - Probably Carcinogenic to Humans*
*Group 2B - Possibly Carcinogenic to Humans*
*NTP: (National Toxicity Program)*
*Known - Known Carcinogen*
*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*
*A1 - Known Human Carcinogen*
*A2 - Suspected Human Carcinogen*
*A3 - Animal Carcinogen*
*ACGIH: (American Conference of Governmental Industrial Hygienists)*
*Mexico - Occupational Exposure Limits - Carcinogens*
*A1 - Confirmed Human Carcinogen*
*A2 - Suspected Human Carcinogen*
*A3 - Confirmed Animal Carcinogen*
*A4 - Not Classifiable as a Human Carcinogen*
*A5 - Not Suspected as a Human Carcinogen*

**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**

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| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Formaldehyde | Not listed | Leuciscus idus: LC50 = 15 mg/L 96h | Not listed | EC50 = 20 mg/L 96h<br>EC50 = 2 mg/L 48h |
| Methanol | Not listed | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 = 39000 mg/L 25 min<br>EC50 = 40000 mg/L 15 min<br>EC50 = 43000 mg/L 5 min | EC50 > 10000 mg/L 24h |

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available.

**Mobility** .

| Component | log Pow |
|---|---|
| Formaldehyde | -0.35 |
| Methanol | -0.74 |

## 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.

| Component | RCRA - U Series Wastes | RCRA - P Series Wastes |
|---|---|---|
| Formaldehyde - 50-00-0 | U122 | - |
| Methanol - 67-56-1 | U154 | - |

## 14. Transport information

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

## 15. Regulatory information

**International Inventories**

| Component | CAS-No | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS | ELINCS | NLP |
|---|---|---|---|---|---|---|---|---|
| Water | 7732-18-5 | X | - | X | ACTIVE | 231-791-2 | - | - |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | X | - | X | ACTIVE | 212-889-4 | - | - |
| Formaldehyde | 50-00-0 | X | - | X | ACTIVE | 200-001-8 | - | - |
| Methanol | 67-56-1 | X | - | X | ACTIVE | 200-659-6 | - | - |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | 16423-68-0 | X | - | X | ACTIVE | 240-474-8 | - | - |

| Component | CAS-No | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|---|---|---|---|---|---|---|---|---|---|
| Water | 7732-18-5 | X | KE-35400 | X | - | X | X | X | X |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | X | KE-02310 | X | X | X | X | X | X |
| Formaldehyde | 50-00-0 | X | KE-17074 | X | X | X | X | X | X |
| Methanol | 67-56-1 | X | KE-23193 | X | X | X | X | X | X |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | 16423-68-0 | X | KE-10872 | X | X | X | X | X | X |

**Legend:**
X - Listed '-' - Not Listed
**KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
**IECSC** - Chinese Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**ENCS** - Japanese Existing and New Chemical Substances
**AICS** - Australian Inventory of Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

| Component | Canada - National Pollutant Release Inventory (NPRI) | Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances | Canada's Chemicals Management Plan (CEPA) |
|---|---|---|---|
| Formaldehyde | Part 1, Group A Substance<br>Part 5, Individual Substances Part 4 Substance | Schedule I | |
| Methanol | Part 1, Group A Substance<br>Part 5, Individual Substances Part 4 Substance | | |

**Legend** NPRI - National Pollutant Release Inventory

**Other International Regulations**

**Authorisation/Restrictions according to EU REACH**

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---|---|---|---|
| Formaldehyde | - | Use restricted. See item 72.<br>(see link for restriction details)<br>Use restricted. See item 28.<br>(see link for restriction details)<br>Use restricted. See item 75.<br>(see link for restriction details) | - |
| Methanol | - | Use restricted. See item 69.<br>(see link for restriction details) | - |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | - | Use restricted. See item 75.<br>(see link for restriction details) | - |

*https://echa.europa.eu/substances-restricted-under-reach*

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component | CAS-No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---|---|---|---|---|---|
| Water | 7732-18-5 | Listed | Not applicable | Not applicable | Not applicable |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | Not applicable | Not applicable | Not applicable | Not applicable |
| Formaldehyde | 50-00-0 | Listed | Not applicable | Not applicable | Not applicable |
| Methanol | 67-56-1 | Listed | Not applicable | Not applicable | Not applicable |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | 16423-68-0 | Not applicable | Not applicable | Not applicable | Not applicable |

| Component | CAS-No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|---|---|---|---|---|
| Water | 7732-18-5 | Not applicable | Not applicable | Not applicable | Not applicable |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | Not applicable | Not applicable | Not applicable | Not applicable |
| Formaldehyde | 50-00-0 | 5 tonne | 50 tonne | Not applicable | Not applicable |
| Methanol | 67-56-1 | 500 tonne | 5000 tonne | Not applicable | Not applicable |
| Spiro[isobenzofuran-1(3H),9-[9H]xanthen]-3-one, 3,6-dihydroxy-2,4,5,7-tetraiodo-, sodium salt (1:2) | 16423-68-0 | Not applicable | Not applicable | Not applicable | Not applicable |

## 16. Other information

**Prepared By**
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**Creation Date** 28-January-2010
**Revision Date** 28-December-2021
**Print Date** 28-December-2021
**Revision Summary** This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

**Disclaimer**

**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, use, processing, storage, transportation, disposal and release 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**

**End of SDS**