

Section 1 - Identification

Product Name
Buffer solution pH 4
Product Code
HAC22834-49, HACLZW9460
Address

 ThermoFisher Scientific Australia Pty Ltd
 5 Caribbean Drive, Scoresby
 VICTORIA 3179, Australia

Emergency Tel.
**CHEMTREC®
 03 9757 4559 or +613 9757 4559**
Telephone / Fax Numbers

Tel: 1300 735 292

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E-mail address

ANZinfo@thermofisher.com

Recommended Use

Laboratory chemicals.

Uses advised against

This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product contains one or more substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as not hazardous according to criteria of Safe Work Australia.

Physical hazards

No hazards identified

Health hazards

No hazards identified

Environmental hazards

No hazards identified

Label Elements

None required

Other information

This product does not contain any known or suspected endocrine disruptors

Section 3 - Composition and Information on Ingredients

| Component | CAS No | Weight % |
|--|-----------|----------|
| Water | 7732-18-5 | 99 |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | 877-24-7 | 1 |
| Mercuric chloride | 7487-94-7 | 0.001 |
| Acid fuchsine | 3244-88-0 | 0.0005 |

Section 4 - First Aid Measures

| | |
|-------------------------------------|--|
| Inhalation | Remove to fresh air. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Eye Contact | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| Self-Protection of the First Aider | No special precautions required. |
| First Aid Facilities | Eyewash, safety shower and washroom. |
| Most important symptoms and effects | No information available. |
| Notes to Physician | Treat symptomatically. |

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

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

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

None reasonably foreseeable.

Special protective equipment and precautions for fire fighters

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

Section 6 - Accidental Release Measures

Emergency procedures

Ensure adequate ventilation.

Environmental Precautions

See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up

Clean-up methods - small spillage

Clean-up methods - large spillage

Not applicable, packaged goods.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Ensure adequate ventilation.

Conditions for Safe Storage, Including any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Exposure limits

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

DE - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

| Component | Australia | New Zealand WEL | ACGIH TLV | The United Kingdom | Germany |
|-------------------|--|-----------------|--------------------------------------|----------------------------------|-------------------------------|
| Mercuric chloride | TWA: 0.003 ppm TWA: 0.025 mg/m ³ | | TWA: 0.025 mg/m ³ Skin | TWA: 0.02 mg/m ³ 8 hr | 0.1mg/ml VME skin absorber |

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Exposure Controls**Engineering Measures**

None under normal use conditions.

Personal protective equipment**Eye Protection**

Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | AUS/NZ Standard | Glove comments |
|----------------|-------------------|-----------------|-----------------|-----------------------|
| Natural rubber | See manufacturers | - | AS/NZS 2161 | (minimum requirement) |
| Nitrile rubber | recommendations | | | |
| Neoprene | | | | |
| PVC | | | | |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, 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.

Remove gloves with care avoiding skin contamination.

| | |
|---------------------------------|---|
| Skin and body protection | Long sleeved clothing |
| Respiratory Protection | Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices |
| Recommended Filter type: | Particle filter (or AUS/NZ equivalent) |

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

Environmental exposure controls No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

| | | |
|--|--------------------------|--|
| Appearance | Red | |
| Physical State | Liquid | |
| Odor | No information available | |
| Odor Threshold | No data available | |
| pH | 3.98 | |
| Melting Point/Range | No data available | |
| Softening Point | No data available | |
| Boiling Point/Range | Not applicable | |
| Flash Point | Not applicable | Method - No information available |
| Evaporation Rate | No data available | |
| Flammability (solid,gas) | Not applicable | Liquid |
| Explosion Limits | No data available | |
| Vapor Pressure | No data available | |
| Vapor Density | No data available | (Air = 1.0) |
| Specific Gravity / Density | No data available | |
| Bulk Density | Not applicable | Liquid |
| Water Solubility | No information available | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | <=-3.9 | |
| Acid fuchsine | -6.46 | |
| Autoignition Temperature | No data available | |
| Decomposition Temperature | No data available | |
| Viscosity | No data available | |
| Explosive Properties | No information available | |
| Oxidizing Properties | No information available | |

Other information

Section 10 - Stability and Reactivity

| | |
|----------------------------|--|
| Reactivity | None known, based on information available |
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Heat, flames and sparks. |

Incompatible Materials None known.

Hazardous Decomposition Products None under normal use conditions.

Hazardous Polymerization No information available.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--|---------------------------------------|----------------------------|-----------------|
| Water | - | - | - |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | LD50 > 3200 mg/kg (Rat) | >1000 mg/kg | |
| Mercuric chloride | 25.9 mg/kg (Rat) 1 mg/kg (Rat) | LD50 = 41 mg/kg (Rabbit) | |

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory

No data available

Skin

No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs

No information available.

(j) aspiration hazard; No data available

Symptoms / effects, both acute and delayed No information available

Section 12 - Ecological Information

Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|-----------|-----------------|------------|------------------|----------|
|-----------|-----------------|------------|------------------|----------|

| | | | | |
|-------------------|--|--|--|--|
| Mercuric chloride | LC50: 0.1 - 0.182 mg/L, 96h flow-through (Pimephales promelas) LC50: 0.096 - 0.133 mg/L, 96h static (Lepomis macrochirus) LC50: 0.13 - 0.19 mg/L, 96h static (Oncorhynchus mykiss) LC50: 0.014 - 0.019 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 0.02 - 0.26 mg/L, 96h static (Cyprinus carpio) LC50: = 4.425 mg/L, 96h (Cyprinus carpio) LC50: = 0.4 mg/L, 96h semi-static (Lepomis macrochirus) LC50: = 0.041 mg/L, 96h (Poecilia reticulata) LC50: 5.933 - 10.34 mg/L, 96h static (Poecilia reticulata) LC50: = 0.155 mg/L, 96h (Pimephales promelas) | EC50=0.0015mg/L 48 h EC50=0.012mg/L >48 h | | |
|-------------------|--|--|--|--|

Persistence and Degradability No information available
Bioaccumulative Potential No information available

| Component | log Pow | Bioconcentration factor (BCF) |
|--|---------|-------------------------------|
| 1,2-Benzenedicarboxylic acid, monopotassium salt | <=-3.9 | No data available |
| Acid fuchsine | -6.46 | No data available |

Mobility No information available.
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues/Unused Products Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.

Other Information Chemical wastes should be disposed through a licensed commercial waste collection service.

Section 14 - Transport Information

IMDG/IMO Not regulated

| Component | IMDG Marine Pollutant |
|--|--|
| Mercuric chloride 7487-94-7 (0.001) | IMDG regulated marine pollutant (UN1624, listed under Mercury bichloride) IMDG regulated marine pollutant (UN2025) IMDG regulated marine pollutant (Listed in the index, [MERCURY BASED PESTICIDE], listed under Mercuric compounds) |

| | |
|-------------------------------|---------------------------------|
| ADG | Not regulated |
| IATA | Not regulated |
| Environmental hazards | No hazards identified |
| Special Precautions | No special precautions required |
| Additional information | None known |

Section 15 - Regulatory Information

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

National Regulations **Australia**

See section 8 for national exposure control parameters.

| Component | Health Surveillance |
|--|---|
| Mercuric chloride 7487-94-7 (0.001) | Listed Demographic, medical and occupational history Physical examination with emphasis on dermatological, gastrointestinal, neurological and renal systems Urinary inorganic Mercury |

Standard for the Uniform Scheduling of Medicines and Poisons

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

| Component | Standard for the Uniform Scheduling of Medicines and Poisons |
|-------------------------------|--|
| Mercuric chloride - 7487-94-7 | Schedule 7 listed |

Australian Industrial Chemicals Introduction Scheme (AICIS)

| Component | Australian Industrial Chemicals Introduction Scheme (AICIS) | Additional information |
|---|---|------------------------|
| Water - 7732-18-5 | Present | - |
| 1,2-Benzenedicarboxylic acid, monopotassium salt - 877-24-7 | Present | - |
| Mercuric chloride - 7487-94-7 | Present | - |
| Acid fuchsine - 3244-88-0 | Present | - |

Australian - Illicit Drug Precursors/Reagents Substance List

This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances.

Chemicals of Security Concern

This product contains one or more substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

| Component | Australian - Illicit Drug Precursors/Reagents Substance List | Chemicals of Security Concern |
|-------------------------------|--|-------------------------------|
| Mercuric chloride - 7487-94-7 | Category 2 | Listed in Appendix A |

Legend

Category 2 - Chemicals and apparatus that require an End User Declaration when sold to non-account customers

Chemicals of Security Concern - for further information see <http://www.chemicalsecurity.gov.au/securityconcerns>

National pollutant inventory Not applicable

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licensing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

| Component | AICS | NZIoC | EINECS | ELINCS | TSCA | DSL | NDSL | PICCS | ENCS | ISHL | IECSC | KECL |
|--|------|-------|-----------|--------|------|-----|------|-------|------|------|-------|----------|
| Water | X | X | 231-791-2 | - | X | X | - | X | X | | X | KE-35400 |
| 1,2-Benzenedicarboxylic acid, monopotassium salt | X | X | 212-889-4 | - | X | X | - | X | X | X | X | KE-02310 |
| Mercuric chloride | X | X | 231-299-8 | - | X | X | - | X | X | X | X | KE-23121 |
| Acid fuchsine | X | X | 221-816-5 | - | 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>)

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Chemicals Subject to Prior Informed Consent (PIC)

| Component | Rotterdam Convention (PIC) |
|-------------------------------|----------------------------|
| Mercuric chloride - 7487-94-7 | X |

MARPOL - International Convention for the Prevention of Pollution from Ships

| Component | IMDG Marine Pollutant |
|-------------------------------|--|
| Mercuric chloride - 7487-94-7 | IMDG regulated marine pollutant (UN1624, listed under Mercury bichloride) IMDG regulated marine pollutant (UN2025) IMDG regulated marine pollutant (Listed in the index, [MERCURY BASED PESTICIDE], listed under Mercuric compounds) |

Basel convention on the control of transboundary movements of hazardous wastes and their disposal

Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

| Component | Basel Convention (Hazardous Waste) | Australian Hazardous Waste Act - Categories of Wastes to Be Controlled |
|-------------------------------|------------------------------------|--|
| Mercuric chloride - 7487-94-7 | Annex I - Y29 | Y29 |

| Component | CAS No | OECD HPV | Restriction of Hazardous Substances (RoHS) | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements |
|--|-----------|----------------|--|---|--|
| 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 |
| Mercuric chloride | 7487-94-7 | Not applicable | Not applicable | Not applicable | Not applicable |
| Acid fuchsine | 3244-88-0 | Not applicable | Not applicable | Not applicable | Not applicable |

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) |
|-------------------|---|---|---|
| Mercuric chloride | - | Use restricted. See entry 75. (see link for restriction details) Use restricted. See entry 18. (see link for restriction details) | - |

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

Section 16 - Other Information

Legend

| | |
|--|--|
| AICS - Australian Inventory of Chemical Substances | NZIoC - New Zealand Inventory of Chemicals |
| 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 |
| DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List | ENCS - Japanese Existing and New Chemical Substances |
| IECSC - Chinese Inventory of Existing Chemical Substances | KECL - Korean Existing and Evaluated Chemical Substances |
| PICCS - Philippines Inventory of Chemicals and Chemical Substances | CAS - Chemical Abstracts Service |
| TWA - Time Weighted Average | ACGIH - American Conference of Governmental Industrial Hygienists |
| IARC - International Agency for Research on Cancer | Predicted No Effect Concentration (PNEC) |
| ICAO/IATA - International Civil Aviation Organization/International Air Transport Association | IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code |
| MARPOL - International Convention for the Prevention of Pollution from Ships | ADG - Australian Code for the Transport of Dangerous Goods by Road and Rail |
| NZS 5433:2020 - Transport of Dangerous Goods on Land | OECD - Organisation for Economic Co-operation and Development |
| LD50 - Lethal Dose 50% | LC50 - Lethal Concentration 50% |
| EC50 - Effective Concentration 50% | ATE - Acute Toxicity Estimate |
| WEL - Workplace Exposure Limit | RPE - Respiratory Protective Equipment |
| DNEL - Derived No Effect Level | NOEC - No Observed Effect Concentration |
| POW - Partition coefficient Octanol:Water | BCF - Bioconcentration factor |
| vPvB - very Persistent, very Bioaccumulative | PBT - Persistent, Bioaccumulative, Toxic |
| VOC - (Volatile Organic Compound) | |

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Revision Date 12-Mar-2025
Revision Summary Update to GHS format.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

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 Safety Data Sheet