# SAFETY DATA SHEET

**Australian statement of hazardous nature :** Classified as hazardous according to criteria of Safe Work Australia

## Section 1 - Identification

**Product Name** **Arsenic**

| | |
|---|---|
| **Product Code** | **SPXSPEC-AS3, SPXPLAS1-2X** |
| **Address** | ThermoFisher Scientific Australia Pty Ltd<br>5 Caribbean Drive, Scoresby<br>VICTORIA 3179, Australia |
| **Emergency Tel.** | **CHEMTREC®**<br>**03 9757 4559 or +613 9757 4559** |
| **Telephone / Fax Numbers** | Tel: 1300 735 292<br>Fax: 1800 067 639 |
| **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 hazardous according to criteria of Safe Work Australia

**Physical hazards**
No hazards identified

**Health hazards**

| | |
|---|---|
| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 2 |

**Environmental hazards**
No hazards identified

**Label Elements**

Exclamation Mark

**Signal Word** **Warning**

**Hazard Statements**
H315 - Causes skin irritation
H319 - Causes serious eye irritation

**Precautionary Statements**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear eye protection/ face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 - Store in a well-ventilated place
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information**
No information available
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 | >97 |
| Hydrogen chloride | 7647-01-0 | 2 |
| Arsenic | 7440-38-2 | 0.1 |

# 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** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**First Aid Facilities** Eyewash, safety shower and washroom.

**Most important symptoms and effects** Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Notes to Physician** Treat symptomatically. Symptoms may be delayed.

# 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**
Thermal decomposition can lead to release of irritating gases and vapors.

**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**
Typically only supplied is small quantiites as packaged goods.
If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

**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
**NZ** - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

| Component | Australia | New Zealand WEL | ACGIH TLV | The United Kingdom | Germany |
|---|---|---|---|---|---|
| Hydrogen chloride | | Ceiling: 5 ppm<br>Ceiling: 7.5 mg/m³ | Ceiling: 2 ppm | STEL: 5 ppm 15 min<br>STEL: 8 mg/m³ 15 min<br>TWA: 1 ppm 8 hr<br>TWA: 2 mg/m³ 8 hr | TWA: 2 ppm (8 Stunden). AGW - exposure factor 2<br>TWA: 3 mg/m³ (8 Stunden). AGW - exposure factor 2<br>TWA: 2 ppm (8 Stunden). MAK<br>TWA: 3.0 mg/m³ (8 Stunden). MAK<br>Höhepunkt: 4 ppm<br>Höhepunkt: 6 mg/m³ |
| Arsenic | TWA: 0.05 mg/m³ | TWA: 0.001 mg/m³ | TWA: 0.01 mg/m³ | STEL: 0.3 mg/m³ 15 min<br>TWA: 0.1 mg/m³ 8 hr<br>Carc. | |

**Biological limit values**

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

| Component | Australia | New Zealand | European Union | United Kingdom | Germany |
|---|---|---|---|---|---|
| Arsenic | | 15 µg/L (urine) end of work week (sum of inorganic Arsenic and its metabolites) | | | |

**Exposure Controls**

**Engineering Measures**

Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment**

**Eye Protection** 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 |
|---|---|---|---|---|
| Nitrile rubber<br>Viton (R)<br>Natural rubber<br>Neoprene<br>PVC<br>Butyl rubber | See manufacturers recommendations | - | AS/NZS 2161 | (minimum requirement) |

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 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.

Remove gloves with care avoiding skin contamination.

**Skin and body protection** Long sleeved clothing

**Repiratory 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 repiratory protective devices

**Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387 Particulates filter conforming to EN 143 Acid gases filter Type E Yellow (or AUS/NZ equivalent)

**Recommended half mask:-** Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 Particle filtering: EN149:2001 (or AUS/NZ equivalent)

When RPE is used a face piece Fit Test should be conducted

**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** | Colorless | |
| **Physical State** | Liquid | |
| **Odor** | No information available | |
| **Odor Threshold** | No data available | |
| **pH** | Not applicable | |
| **Melting Point/Range** | No data available | |
| **Softening Point** | No data available | |
| **Boiling Point/Range** | 100 °C / 212 °F | |
| **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)** | | |
| **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 | - | - | - |
| Hydrogen chloride | LD50 238 - 277 mg/kg ( Rat ) | LD50 > 5010 mg/kg ( Rabbit ) | LC50 = 1.68 mg/L ( Rat ) 1 h |
| Arsenic | LD50 = 15 mg/kg ( Rat ) | | |

**(b) skin corrosion/irritation;** Category 2

**(c) serious eye damage/irritation;** Category 2

**(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

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component | Australia | New Zealand | New South Wales | Western Australia | IARC | EU | UK | Germany |
|---|---|---|---|---|---|---|---|---|
| Arsenic | | Confirmed carcinogen | | | Group 1 | | | Cat. 1 |

**(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** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

# Section 12 - Ecological Information

**Ecotoxicity effects** .
**Persistence and Degradability** No information available
**Bioaccumulative Potential** No information 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** | Dispose of this container to hazardous or special waste collection point. |
| **Other Information** | Chemical wastes should be disposed through a licensed commercial waste collection service. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. |

# Section 14 - Transport Information

**IMDG/IMO**

| | |
|---|---|
| **UN-No** | UN1789 |
| **Proper Shipping Name** | HYDROCHLORIC ACID |
| **Technical Shipping Name** | Arsenic standard1000ppm in 2-5% HCl |
| **Hazard Class** | 8 |
| **Packing Group** | III |

**ADG**

| | |
|---|---|
| **UN-No** | UN1789 |
| **Proper Shipping Name** | HYDROCHLORIC ACID |
| **Technical Shipping Name** | Arsenic standard1000ppm in 2-5% HCl |
| **Hazard Class** | 8 |
| **Packing Group** | III |

| Component | Hazchem Code |
|---|---|
| Hydrogen chloride<br>7647-01-0 ( 2 ) | 2RE<br>2R |
| Arsenic<br>7440-38-2 ( 0.1 ) | 2Z |

**IATA**

| | |
|---|---|
| **UN-No** | UN1789 |
| **Proper Shipping Name** | HYDROCHLORIC ACID |
| **Technical Shipping Name** | Arsenic standard1000ppm in 2-5% HCl |
| **Hazard Class** | 8 |
| **Packing Group** | III |

| | |
|---|---|
| **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.

**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 |
|---|---|
| Hydrogen chloride - 7647-01-0 | Schedule 5 listed - except its salts and derivatives;in preparations except: in preparations containing <=0.5% of Hydrochloric acid, or for therapeutic use<br>Schedule 6 listed - except its salts and derivatives;except: when included in Schedule 5, in preparations for therapeutic use, or in preparations containing <=0.5% of Hydrochloric acid |
| Arsenic - 7440-38-2 | Schedule 4 listed - for human therapeutic use except when separately specified in these Schedules<br>Schedule 6 listed - in animal feed premixes;except when separately specified in this Schedule<br>Schedule 6 listed - in ant poisons;except when separately specified in this Schedule<br>Schedule 6 listed - in preparations for the treatment of animals except Thiacetarsamide when included in Schedule 4;except when separately specified in this Schedule<br>Schedule 7 listed |

**Australian Industrial Chemicals Introduction Scheme (AICIS)**

| Component | Australian Industrial Chemicals Introduction Scheme (AICIS) | Additional information |
|---|---|---|
| Water - 7732-18-5 | Present | - |
| Hydrogen chloride - 7647-01-0 | Present | - |
| Arsenic - 7440-38-2 | 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 |
|---|---|---|
| Hydrogen chloride - 7647-01-0 | Category 3 | Listed in Appendix A |

**Legend**
Category 3 - Chemicals and apparatus that may be used in the illicit production of drugs. Purchases from this list should alert companies or organizations to seek further indicators of any suspicious orders or enquiries. No official reporting is required for items on this list unless considered warranted

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

**National pollutant inventory** Subject to reporting requirements

| Component | National pollutant inventory |
|---|---|
| Hydrogen chloride - 7647-01-0 | 10 tonne/yr. Threshold category 1<br>400 tonne/yr. Threshold category 2a<br>1 tonne/h. Threshold category 2a<br>2000 tonne/yr. Threshold category 2b<br>60000 MWH. Threshold category 2b<br>20 MW. Threshold category 2b |
| Arsenic - 7440-38-2 | 10 tonne/yr. Threshold category 1<br>2000 tonne/yr. Threshold category 2b<br>60000 MWH. Threshold category 2b<br>20 MW. Threshold category 2b |

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

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

| Component | Australia | New South Wales | Western Australia | New Zealand |
|---|---|---|---|---|
| Arsenic - 7440-38-2 | | | | Confirmed carcinogen |

**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 |
| Hydrogen chloride | X | X | 231-595-7 | - | X | X | - | X | X | X | X | KE-20189 |
| Arsenic | X | X | 231-148-6 | - | X | X | - | X | X | | X | KE-01933 |

**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)** Not applicable

**Basel convention on the control of transboundary movements of hazardous wastes and their dispoal**
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 |
|---|---|---|
| Hydrogen chloride - 7647-01-0 | Annex I - Y34 | Y34 solid or solution |
| Arsenic - 7440-38-2 | Annex I - Y24 | Y24 |

| 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 |
| Hydrogen chloride | 7647-01-0 | Listed | Not applicable | 25 tonne | 250 tonne |
| Arsenic | 7440-38-2 | Listed | 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) |
|---|---|---|---|
| Hydrogen chloride | - | Use restricted. See item 75. (see link for restriction details) | - |
| Arsenic | - | Use restricted. See item 75. (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/NDSL** - 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 Predicted No Effect Concentration (PNEC)

**IARC** - International Agency for Research on Cancer

**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.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.

| | |
|---|---|
| **Revision Date** | 14-Jul-2023 |
| **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