

ALFAA88118

## Zinc, AAS standard solution, Specpure®, Zn 1000µg/ml

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**产品说明:** 锌, AAS标准溶液, Specpure™, Zn 1000 µg/ml  
**Product Description:** Zinc, AAS standard solution, Specpure®, Zn 1000µg/ml

**Cat No. :** 88118  
**Molecular Formula** Zn in 5% HN O3

**Supplier** Avocado Research Chemicals Ltd.  
(Part of Thermo Fisher Scientific)  
Shore Road, Heysham  
Lancashire, LA3 2XY,  
United Kingdom  
Office Tel: +44 (0) 1524 850506  
Office Fax: +44 (0) 1524 850608

**Emergency Telephone Number** For information **US** call: 001-800-227-6701 / **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

**E-mail address** begel.sdsdesk@thermofisher.com

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Liquid

**Appearance**  
Colorless

**Odor**  
No information available

**Emergency Overview**

Causes severe skin burns and eye damage. May be corrosive to metals.

#### Classification of the substance or mixture

|  |              |
|--|--------------|
| Substances/mixtures corrosive to metal | Category 1   |
| Skin Corrosion/Irritation              | Category 1 A |
| Serious Eye Damage/Eye Irritation      | Category 1   |

#### Label Elements



**Signal Word**

**Danger**

#### Hazard Statements

H290 - May be corrosive to metals

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H314 - Causes severe skin burns and eye damage

**Precautionary Statements****Prevention**

P234 - Keep only in original packaging

P264 - Wash face, hands and any exposed skin thoroughly after handling

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P390 - Absorb spillage to prevent material damage

P362 + P364 - Take off contaminated clothing and wash it before reuse

**Storage**

P402 - Store in a dry place

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P406 - Store in corrosion resistant polypropylene container with a resistant inliner

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

May be corrosive to metals.

**Health Hazards**

Corrosive. Causes skin and eye burns. Causes serious eye damage.

**Environmental hazards**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

This product does not contain any known or suspected endocrine disruptors.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Component                   | CAS No    | Weight % |
|-----------------------------|-----------|----------|
| Water                       | 7732-18-5 | 94.90    |
| Nitric acid ...% [C ≤ 70 %] | 7697-37-2 | 5.00     |
| Zinc metal                  | 7440-66-6 | 0.1      |

**SECTION 4. FIRST AID MEASURES****General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

**Inhalation**

If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.

**Ingestion**

Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician

immediately.

**Most important symptoms and effects**

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**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.

**Notes to Physician**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Not combustible. CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

**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. The product causes burns of eyes, skin and mucous membranes.

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

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Environmental Precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

**Storage**

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

**Specific Use(s)**

Use in laboratories

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Control Parameters

| Component                   | China | Taiwan                                   | Thailand   | Hong Kong   |
|-----------------------------|-------|--|------------|---|
| Nitric acid ...% [C ≤ 70 %] | -     | TWA: 2 ppm<br>TWA: 5.2 mg/m <sup>3</sup> | TWA: 2 ppm | TWA: 2 ppm<br>TWA: 5.2 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> |

| Component                   | ACGIH TLV                 | OSHA PEL  | NIOSH   | The United Kingdom                                       | European Union   |
|-----------------------------|---------------------------|---|---|--|--|
| Nitric acid ...% [C ≤ 70 %] | TWA: 2 ppm<br>STEL: 4 ppm | (Vacated) TWA: 2 ppm<br>(Vacated) TWA: 5 mg/m <sup>3</sup><br>(Vacated) STEL: 4 ppm<br>(Vacated) STEL: 10 mg/m <sup>3</sup><br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup> | IDLH: 25 ppm<br>TWA: 2 ppm<br>TWA: 5 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 10 mg/m <sup>3</sup> | STEL: 1 ppm 15 min<br>STEL: 2.6 mg/m <sup>3</sup> 15 min | STEL: 1 ppm (15min)<br>STEL: 2.6 mg/m <sup>3</sup> (15min) |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

## Monitoring methods

MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry MDHS 99 Metals in air by ICP-AES

## 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 (European standard - EN 166)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers | -               | EN 374      | (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** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

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**Recommended Filter type:** Particulates filter conforming to EN 143**Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Particle filtering: EN149:2001  
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**

|  |                          |  |
|--|--------------------------|--|
| <b>Appearance</b>                              | Colorless                |  |
| <b>Physical State</b>                          | Liquid                   |  |
| <b>Odor</b>                                    | No information available |  |
| <b>Odor Threshold</b>                          | No data available        |  |
| <b>pH</b>                                      | 1                        |  |
| <b>Melting Point/Range</b>                     | No data available        |  |
| <b>Softening Point</b>                         | No data available        |  |
| <b>Boiling Point/Range</b>                     | No information available |  |
| <b>Flash Point</b>                             | No information available | <b>Method -</b> No information available |
| <b>Evaporation Rate</b>                        | No data available        |  |
| <b>Flammability (solid,gas)</b>                | Not applicable           | Liquid                                   |
| <b>Explosion Limits</b>                        | No data available        |  |
| <b>Vapor Pressure</b>                          | No data available        |  |
| <b>Vapor Density</b>                           | No data available        | (Air = 1.0)                              |
| <b>Specific Gravity / Density</b>              | No data available        |  |
| <b>Bulk Density</b>                            | Not applicable           | Liquid                                   |
| <b>Water Solubility</b>                        | Miscible                 |  |
| <b>Solubility in other solvents</b>            | No information available |  |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |  |
| <b>Component</b>                               | <b>log Pow</b>           |  |
| Nitric acid ...% [C ≤ 70 %]                    | -2.3                     |  |
| <b>Autoignition Temperature</b>                | No data available        |  |
| <b>Decomposition Temperature</b>               | No data available        |  |
| <b>Viscosity</b>                               | No data available        |  |
| <b>Explosive Properties</b>                    | No information available |  |
| <b>Oxidizing Properties</b>                    | No information available |  |
| <b>Molecular Formula</b>                       | Zn in 5% HN O3           |  |

**SECTION 10. STABILITY AND REACTIVITY**

|                                 |                                 |
|---------------------------------|---------------------------------|
| <b>Stability</b>                | Stable under normal conditions. |
| <b>Hazardous Reactions</b>      | None under normal processing.   |
| <b>Hazardous Polymerization</b> | No information available.       |
| <b>Conditions to Avoid</b>      | None known.                     |
| <b>Materials to avoid</b>       | Strong bases.                   |

**Hazardous Decomposition Products** Nitrogen oxides (NOx). Metal oxides.**SECTION 11. TOXICOLOGICAL INFORMATION**

# SAFETY DATA SHEET

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## Product Information

### (a) acute toxicity; Toxicology data for the components

| Component                   | LD50 Oral                | LD50 Dermal | LC50 Inhalation           |
|-----------------------------|--------------------------|-------------|---------------------------|
| Water                       | -                        | -           | -                         |
| Nitric acid ...% [C ≤ 70 %] |                          |             | LC50 = 2500 ppm. (Rat) 1h |
| Zinc metal                  | LD50 = 630 mg/kg ( Rat ) |             |                           |

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(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** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects** May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

| Component  | Freshwater Fish  | Water Flea   | Freshwater Algae   | Microtox |
|------------|--|--|--|----------|
| Zinc metal | LC50: = 0.41 mg/L, 96h static (Oncorhynchus mykiss)<br>LC50: = 0.59 mg/L, 96h semi-static (Oncorhynchus mykiss)<br>LC50: 2.16 - 3.05 mg/L, 96h flow-through (Pimephales promelas)<br>LC50: 0.211 - 0.269 | EC50: 0.139 - 0.908 mg/L, 48h Static (Daphnia magna) | EC50: 0.09 - 0.125 mg/L, 72h static (Pseudokirchneriella subcapitata)<br>EC50: 0.11 - 0.271 mg/L, 96h static (Pseudokirchneriella subcapitata) |          |

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|  |  |  |  |  |
|--|--|--|--|--|
|  | mg/L, 96h semi-static<br>(Pimephales promelas)<br>LC50: = 2.66 mg/L, 96h<br>static (Pimephales<br>promelas)<br>LC50: = 30 mg/L, 96h<br>(Cyprinus carpio)<br>LC50: = 0.45 mg/L, 96h<br>semi-static (Cyprinus<br>carpio)<br>LC50: = 7.8 mg/L, 96h<br>static (Cyprinus carpio)<br>LC50: = 0.24 mg/L, 96h<br>flow-through<br>(Oncorhynchus mykiss)<br>LC50: = 3.5 mg/L, 96h<br>static (Lepomis<br>macrochirus) |  |  |  |
|--|--|--|--|--|

**Persistence and Degradability**
**Persistence**  
**Degradation in sewage**  
**treatment plant**

Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary  
 May persist, based on information available.  
 Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Bioaccumulative Potential**

May have some potential to bioaccumulate

| Component                   | log Pow | Bioconcentration factor (BCF) |
|-----------------------------|---------|-------------------------------|
| Nitric acid ...% [C ≤ 70 %] | -2.3    | No data available             |

**Mobility in soil**

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

**Endocrine Disruptor Information**  
**Persistent Organic Pollutant**  
**Ozone Depletion Potential**

This product does not contain any known or suspected endocrine disruptors  
 This product does not contain any known or suspected substance  
 This product does not contain any known or suspected substance

### SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused**  
**Products**

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point.

**Other Information**

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms.

### SECTION 14. TRANSPORT INFORMATION

**Road and Rail Transport**

|                                |   |
|--------------------------------|---|
| <b>UN-No</b>                   | UN3264                                      |
| <b>Proper Shipping Name</b>    | Corrosive liquid, acidic, inorganic, n.o.s. |
| <b>Technical Shipping Name</b> | (NITRIC ACID)                               |
| <b>Hazard Class</b>            | 8   |
| <b>Packing Group</b>           | III   |

**IMDG/IMO**

## Zinc, AAS standard solution, Specpure®, Zn 1000µg/ml

**UN-No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s.  
**Technical Shipping Name** (NITRIC ACID)  
**Hazard Class** 8  
**Packing Group** III

IATA

**UN-No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s.  
**Technical Shipping Name** (NITRIC ACID)  
**Hazard Class** 8  
**Packing Group** III

**Special Precautions for User** No special precautions required

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

| Component                   | The Inventory of Hazardous Chemicals (2015 Edition) | List of dangerous goods GB 12268 - 2012 | TCSI | IECSC | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL     |
|-----------------------------|---|---|------|-------|-----------|------|-----|-------|------|------|------|----------|
| Water                       | -   | -                                       | X    | X     | 231-791-2 | X    | X   | X     | X    |      | X    | KE-35400 |
| Nitric acid ...% [C ≤ 70 %] | X   | X                                       | X    | X     | 231-714-2 | X    | X   | X     | X    | X    | X    | KE-25911 |
| Zinc metal                  | X   | X                                       | X    | X     | 231-175-3 | X    | X   | X     | X    |      | X    | KE-35518 |

**National Regulations****SECTION 16. OTHER INFORMATION**

**Prepared By** Health, Safety and Environmental Department  
**Revision Date** 09-May-2024  
**Revision Summary** New emergency telephone response service provider.

**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.

Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances



**Zinc, AAS standard solution, Specpure®, Zn 1000µg/ml****KECL** - Korean Existing and Evaluated Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**WEL** - Workplace Exposure Limit**ACGIH** - American Conference of Governmental Industrial Hygienists**DNEL** - Derived No Effect Level**RPE** - Respiratory Protective Equipment**LC50** - Lethal Concentration 50%**NOEC** - No Observed Effect Concentration**PBT** - Persistent, Bioaccumulative, Toxic**TWA** - Time Weighted Average**IARC** - International Agency for Research on Cancer**PNEC** - Predicted No Effect Concentration**LD50** - Lethal Dose 50%**EC50** - Effective Concentration 50%**POW** - Partition coefficient Octanol:Water**vPvB** - very Persistent, very Bioaccumulative**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road**OECD** - Organisation for Economic Co-operation and Development**BCF** - Bioconcentration factor**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code**MARPOL** - International Convention for the Prevention of Pollution from Ships**ATE** - Acute Toxicity Estimate**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

**Physical hazards**

On basis of test data

**Health Hazards**

Calculation method

**Environmental hazards**

Calculation method

**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**