

## 1 Identification

- **Product identifier**
- **Product Name:** Instrument Check Standard 4
- **Part Number:**  
CALMIX4-100  
CALMIX4-500
- **Application of the substance / the mixture** For Laboratory Use Only
- **Uses advised against** Not for Human or Animal Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Spex CertiPrep, LLC.  
203 Norcross Ave, Metuchen,  
NJ 08840 USA  
732-549-7144  
USMet-CRMSales@antylia.com
- **Information department:** product safety department
- **Emergency telephone number:**  
Emergency Phone Number (24 hours)  
CHEMTREC (800-424-9300)  
Outside US: 703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Skin Irritation 2 H315 Causes skin irritation.  
Eye Irritation 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P264 Wash thoroughly after handling.  
P280 Wear eye protection / face protection.  
P302+P352 If on skin: Wash with plenty of water.  
P321 Specific treatment (see on this label).  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332+P313 If skin irritation occurs: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P337+P313 If eye irritation persists: Get medical advice/attention.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 2  
Fire = 0  
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 2 Health = 2  
FIRE 0 Fire = 0  
REACTIVITY 0 Reactivity = 0

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- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

|           |             |      |
|-----------|-------------|------|
| 7697-37-2 | nitric acid | 2.0% |
|-----------|-------------|------|

· **Chemical identification of the substance/preparation**

|           |                                                     |          |
|-----------|-----------------------------------------------------|----------|
| 7732-18-5 | water, distilled, conductivity or of similar purity | 97.9849% |
| 7440-09-7 | potassium                                           | 0.005%   |
| 7429-90-5 | aluminium                                           | 0.001%   |
| 7439-92-1 | lead                                                | 0.001%   |
| 7439-96-5 | manganese                                           | 0.001%   |
| 7440-02-0 | nickel                                              | 0.001%   |
| 7440-20-2 | scandium                                            | 0.001%   |
| 7440-23-5 | sodium                                              | 0.001%   |
| 7440-38-2 | arsenic                                             | 0.001%   |
| 7440-50-8 | copper                                              | 0.001%   |
| 7440-66-6 | zinc                                                | 0.001%   |
| 7723-14-0 | phosphorus                                          | 0.001%   |
| 7440-39-3 | barium                                              | 0.0001%  |

### 4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Do not give anything to eat or drink - Do not induce vomiting
- **Information for Doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-I:**

|           |             |                        |
|-----------|-------------|------------------------|
| 7697-37-2 | nitric acid | 0.16 ppm               |
| 7440-09-7 | potassium   | 2.3 mg/m <sup>3</sup>  |
| 7439-92-1 | lead        | 0.15 mg/m <sup>3</sup> |
| 7439-96-5 | manganese   | 3 mg/m <sup>3</sup>    |

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|           |            |                        |
|-----------|------------|------------------------|
| 7440-02-0 | nickel     | 4.5 mg/m <sup>3</sup>  |
| 7440-20-2 | scandium   | 30 mg/m <sup>3</sup>   |
| 7440-23-5 | sodium     | 13 mg/m <sup>3</sup>   |
| 7440-38-2 | arsenic    | 1.5 mg/m <sup>3</sup>  |
| 7440-50-8 | copper     | 3 mg/m <sup>3</sup>    |
| 7440-66-6 | zinc       | 6 mg/m <sup>3</sup>    |
| 7723-14-0 | phosphorus | 0.27 mg/m <sup>3</sup> |
| 7440-39-3 | barium     | 1.5 mg/m <sup>3</sup>  |

**· PAC-2:**

|           |             |                       |
|-----------|-------------|-----------------------|
| 7697-37-2 | nitric acid | 24 ppm                |
| 7440-09-7 | potassium   | 25 mg/m <sup>3</sup>  |
| 7439-92-1 | lead        | 120 mg/m <sup>3</sup> |
| 7439-96-5 | manganese   | 5 mg/m <sup>3</sup>   |
| 7440-02-0 | nickel      | 50 mg/m <sup>3</sup>  |
| 7440-20-2 | scandium    | 330 mg/m <sup>3</sup> |
| 7440-23-5 | sodium      | 140 mg/m <sup>3</sup> |
| 7440-38-2 | arsenic     | 17 mg/m <sup>3</sup>  |
| 7440-50-8 | copper      | 33 mg/m <sup>3</sup>  |
| 7440-66-6 | zinc        | 21 mg/m <sup>3</sup>  |
| 7723-14-0 | phosphorus  | 3 mg/m <sup>3</sup>   |
| 7440-39-3 | barium      | 180 mg/m <sup>3</sup> |

**· PAC-3:**

|           |             |                         |
|-----------|-------------|-------------------------|
| 7697-37-2 | nitric acid | 92 ppm                  |
| 7440-09-7 | potassium   | 150 mg/m <sup>3</sup>   |
| 7439-92-1 | lead        | 700 mg/m <sup>3</sup>   |
| 7439-96-5 | manganese   | 1,800 mg/m <sup>3</sup> |
| 7440-02-0 | nickel      | 99 mg/m <sup>3</sup>    |
| 7440-20-2 | scandium    | 2,000 mg/m <sup>3</sup> |
| 7440-23-5 | sodium      | 870 mg/m <sup>3</sup>   |
| 7440-38-2 | arsenic     | 100 mg/m <sup>3</sup>   |
| 7440-50-8 | copper      | 200 mg/m <sup>3</sup>   |
| 7440-66-6 | zinc        | 120 mg/m <sup>3</sup>   |
| 7723-14-0 | phosphorus  | 18 mg/m <sup>3</sup>    |
| 7440-39-3 | barium      | 1,100 mg/m <sup>3</sup> |

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.

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- Avoid contact with the eyes.  
Avoid contact with the eyes and skin.  
· **Respiratory protection:** Not required.  
· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material** The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid  
Color: According to product specification

· **Odor:** Characteristic

· **Odour Threshold:** Not applicable.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: Undetermined.  
Boiling point/Boiling range: 100 °C (212 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Decomposition temperature:** Not applicable.

· **Ignition temperature:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not applicable.  
Upper: Not applicable.

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

· **Density at 20 °C (68 °F)** 1.01049 g/cm<sup>3</sup> (8.43254 lbs/gal)

· **Relative density** Not applicable.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Fully miscible.

· **Partition coefficient (n-octanol/water):** Not applicable.

· **Viscosity:**

Dynamic: Not applicable.  
Kinematic: Not applicable.

· **Solvent content:**

Water: 98.0 %

VOC content: 0.00 %

Solids content: 0.0 %

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· **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

**7697-37-2 nitric acid**

Inhalative LC50/4 h 2.65 mg/l (ATE)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

|           |         |    |
|-----------|---------|----|
| 7439-92-1 | lead    | 2B |
| 7440-02-0 | nickel  | 2B |
| 7440-38-2 | arsenic | 1  |

· **NTP (National Toxicology Program)**

|           |         |   |
|-----------|---------|---|
| 7439-92-1 | lead    | R |
| 7440-02-0 | nickel  | R |
| 7440-38-2 | arsenic | K |

· **OSHA-Ca (Occupational Safety & Health Administration)**

|           |         |
|-----------|---------|
| 7440-38-2 | arsenic |
|-----------|---------|

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

#### 14 Transport information

|                                                                                                                                                                                                                                         |                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| · <b>UN-Number</b><br>· <b>DOT, ADR, IMDG, IATA</b>                                                                                                                                                                                     | UN3264                                                                                                                                                                                        |
| · <b>UN proper shipping name</b><br>· <b>DOT</b><br>· <b>ADR</b><br>· <b>IMDG, IATA</b>                                                                                                                                                 | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid)<br>3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)<br>CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)      |
| · <b>Transport hazard class(es)</b><br>· <b>DOT</b>                                                                                                                                                                                     |                                                                                                                                                                                               |
|                                                                                                                                                        |                                                                                                                                                                                               |
| · <b>Class</b><br>· <b>Label</b>                                                                                                                                                                                                        | 8 Corrosive substances<br>8                                                                                                                                                                   |
| · <b>ADR, IMDG, IATA</b>                                                                                                                                                                                                                |                                                                                                                                                                                               |
|                                                                                                                                                        |                                                                                                                                                                                               |
| · <b>Class</b><br>· <b>Label</b>                                                                                                                                                                                                        | 8 Corrosive substances<br>8                                                                                                                                                                   |
| · <b>Packing group</b><br>· <b>DOT, ADR, IMDG, IATA</b>                                                                                                                                                                                 | III                                                                                                                                                                                           |
| · <b>Environmental hazards:</b>                                                                                                                                                                                                         | Not applicable.                                                                                                                                                                               |
| · <b>Special precautions for user</b><br>· <b>Hazard identification number (Kemler code):</b><br>· <b>EMS Number:</b><br>· <b>Segregation groups</b><br>· <b>Stowage Category</b><br>· <b>Stowage Code</b><br>· <b>Segregation Code</b> | Warning: Corrosive substances<br>80<br>F-A,S-B<br>(SGG1) Acids<br>A<br>SW2 Clear of living quarters.<br>SG36 Stow "separated from" SGG18-alkalis.<br>SG49 Stow "separated from" SGG6-cyanides |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>                                                                                                                                                        | Not applicable.                                                                                                                                                                               |
| · <b>Transport/Additional information:</b>                                                                                                                                                                                              |                                                                                                                                                                                               |
| · <b>ADR</b><br>· <b>Excepted quantities (EQ)</b>                                                                                                                                                                                       | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml                                                                              |
| · <b>IMDG</b><br>· <b>Limited quantities (LQ)</b><br>· <b>Excepted quantities (EQ)</b>                                                                                                                                                  | 5L<br>Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml                                                                        |
| · <b>UN "Model Regulation":</b>                                                                                                                                                                                                         | UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID),<br>8, III                                                                                                                  |

#### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture** No further relevant information available.  
· **Sara**

|                                                          |             |
|----------------------------------------------------------|-------------|
| · <b>Section 313 (Specific toxic chemical listings):</b> |             |
| 7697-37-2                                                | nitric acid |
| 7429-90-5                                                | aluminium   |
| 7439-92-1                                                | lead        |
| 7439-96-5                                                | manganese   |

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|           |            |
|-----------|------------|
| 7440-02-0 | nickel     |
| 7440-38-2 | arsenic    |
| 7440-50-8 | copper     |
| 7440-66-6 | zinc       |
| 7723-14-0 | phosphorus |
| 7440-39-3 | barium     |

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

|           |            |
|-----------|------------|
| 7439-92-1 | lead       |
| 7439-96-5 | manganese  |
| 7723-14-0 | phosphorus |

· **Proposition 65**

· **Chemicals known to cause cancer:**

|           |         |
|-----------|---------|
| 7439-92-1 | lead    |
| 7440-02-0 | nickel  |
| 7440-38-2 | arsenic |

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

|           |           |                       |
|-----------|-----------|-----------------------|
| 7439-92-1 | lead      | B2                    |
| 7439-96-5 | manganese | D                     |
| 7440-38-2 | arsenic   | A                     |
| 7440-50-8 | copper    | D                     |
| 7440-66-6 | zinc      | D, I, II              |
| 7440-39-3 | barium    | D, CBD(inh), NL(oral) |

· **TLV (Threshold Limit Value)**

|           |           |    |
|-----------|-----------|----|
| 7429-90-5 | aluminium | A4 |
| 7439-92-1 | lead      | A3 |
| 7440-02-0 | nickel    | A5 |
| 7440-38-2 | arsenic   | A1 |
| 7440-39-3 | barium    | A4 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

|           |         |
|-----------|---------|
| 7440-02-0 | nickel  |
| 7440-38-2 | arsenic |

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07

· **Signal word** Warning

· **Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

P264 Wash thoroughly after handling.

P280 Wear eye protection / face protection.

P302+P352 If on skin: Wash with plenty of water.

P321 Specific treatment (see on this label).

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313 If skin irritation occurs: Get medical advice/attention.

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

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P337+P313      *If eye irritation persists: Get medical advice/attention.*  
**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** product safety department

· **Contact:**

Spex CertiPrep, LLC.

1-732-549-7144

· **Date of preparation / last revision** 09/04/2024

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A