**Kit Components**

| Product code | Description |
|---|---|
| **EPA-SET** | **ICP Environmental EPA Set** |

Components:

| | |
|---|---|
| INTER18-100 | Interference Check Standard, 18 |
| INTER5-100 | Interference Check Standard, 5 |
| MIXSTD1-100 | Mixed Calibration Standard 1 |
| MIXSTD2-100 | Mixed Calibration Standard 2 |
| MIXSTD3-100 | Mixed Calibration Standard 3 |
| MIXSTD4-100 | Mixed Calibration Standard 4 |
| MIXSTD5-100 | Mixed Calibration Standard 5 |
| PLBLK-HCL | Hydrochloric Acid Blank |
| PLBLK-HNO3 | Nitric Acid Blank |
| PLHG2-1Y | 100 µg/mL Mercury |
| PLSB7-2Y | 1000 µg/mL Antimony |

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 09/17/2015

## 1 Identification

· **Product identifier**

· **Product Name: Interference Check Standard, 18**

· **Part Number:**
INTER18-100
INTER18-100N
INTER18-500
INTER18-500N
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS08 Health hazard

Carc. 1A H350 May cause cancer.
Repr. 1A H360 May damage fertility or the unborn child.

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
arsenic
Lead from Lead Oxide
· **Hazard statements**
Causes severe skin burns and eye damage.
May cause cancer.
May damage fertility or the unborn child.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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**Product Name: Interference Check Standard, 18**

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· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


*Health = 3*
*Fire = 0*
*Reactivity = 0*

· **HMIS-ratings (scale 0 - 4)**


*Health = 3*
*Fire = 0*
*Reactivity = 0*

· **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 | 5.0% |
| 7440-38-2 | arsenic | 0.1% |
| 7439-92-1 | Lead from Lead Oxide | 0.1% |
| 7440-28-0 | Thallium from Thallium nitrate | 0.1% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7440-09-7 | Potassium from Potassium nitrate | 2.0% |
| 7782-49-2 | selenium | 0.05% |
| 7440-39-3 | Barium from Barium carbonate | 0.03% |
| 7440-43-9 | cadmium (non-pyrophoric) | 0.03% |
| 7440-47-3 | Chromium from Chromium(III) nitrate nonahydrate | 0.03% |
| 7440-48-4 | cobalt | 0.03% |
| 7440-50-8 | copper | 0.03% |
| 7440-02-0 | nickel | 0.03% |
| 7440-22-4 | silver | 0.03% |
| 7440-62-2 | Vanadium from Ammonium trioxovanadate | 0.03% |
| 7440-66-6 | zinc powder -zinc dust (stabilized) | 0.03% |
| 7439-96-5 | manganese | 0.02% |
| 7440-41-7 | Beryllium from Beryllium Acetate | 0.01% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 92.35% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **Information for Doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** 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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |
| **7440-38-2 arsenic** | |
| PEL | Long-term value: 0.5* 0.01** mg/m³<br>as As; *organic**inorg. compds.; 29 CFR 1910.1018 |
| REL | Ceiling limit value: 0.002 mg/m³<br>as As; 15min; See Pocket Guide App. A |
| TLV | Long-term value: 0.01 mg/m³<br>as As; BEI |
| **7439-92-1 Lead from Lead Oxide** | |
| PEL | Long-term value: 0.05* mg/m³<br>*see 29 CFR 1910.1025 |

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| | |
|---|---|
| REL | Long-term value: 0.05* mg/m³<br>*8-hr TWA,excl. lead arsenate;See PocketGuideApp.C |
| TLV | Long-term value: 0.05* mg/m³<br>*and inorganic compounds, as Pb; BEI |

**7440-28-0 Thallium from Thallium nitrate**

| | |
|---|---|
| PEL | Long-term value: 0.1 mg/m³<br>as Tl; Skin |
| REL | Long-term value: 0.1 mg/m³<br>as Tl; Skin |
| TLV | Long-term value: 0.02* mg/m³<br>as Tl; *inhalable fraction; Skin |

· **Ingredients with biological limit values:**

**7440-38-2 arsenic**

| | |
|---|---|
| BEI | 35 µg As/L<br>Medium: urine<br>Time: end of workweek<br>Parameter: Inorganic arsenic plus methylated metabolites (background) |

**7439-92-1 Lead from Lead Oxide**

| | |
|---|---|
| BEI | 30 µg/100 ml<br>Medium: blood<br>Time: not critical<br>Parameter: Lead<br><br>10 µg/100 ml<br>Medium: blood<br>Time: not critical<br>Parameter: Lead (women of child bearing potential) |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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



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## 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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.0698 g/cm³ (8.927 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 92.3 % |
| **Solids content:** | 2.7 % |
| · **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:** | | |
|---|---|---|
| **7440-28-0 Thallium from Thallium nitrate** | | |
| Oral | LD50 | 15 mg/kg (mouse) |

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.

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**Product Name: Interference Check Standard, 18**

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· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 7440-38-2 | arsenic | 1 |
| 7439-92-1 | Lead from Lead Oxide | 2B |
| 7782-49-2 | selenium | 3 |
| 7440-43-9 | cadmium (non-pyrophoric) | 1 |
| 7440-47-3 | Chromium from Chromium(III) nitrate nonahydrate | 3 |
| 7440-48-4 | cobalt | 2B |
| 7440-02-0 | nickel | 1 |
| 7440-41-7 | Beryllium from Beryllium Acetate | 1 |

| · **NTP (National Toxicology Program)** | | |
|---|---|---|
| 7440-38-2 | arsenic | K |
| 7439-92-1 | Lead from Lead Oxide | R |
| 7782-49-2 | selenium | R |
| 7440-43-9 | cadmium (non-pyrophoric) | K |
| 7440-02-0 | nickel | R |
| 7440-41-7 | Beryllium from Beryllium Acetate | K |

| · **OSHA-Ca (Occupational Safety & Health Administration)** | |
|---|---|
| 7440-38-2 | arsenic |
| 7440-43-9 | cadmium (non-pyrophoric) |

## 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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.

## 14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** UN3264

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**Product Name: Interference Check Standard, 18**

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| | |
|---|---|
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |

· **Transport hazard class(es)**

· **DOT**

| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |

· **ADR, IMDG, IATA**

| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | Not applicable. |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III, (E) |

## 15 Regulatory information

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

| · **Section 355 (extremely hazardous substances):** | |
|---|---|
| 7697-37-2 | nitric acid |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 7697-37-2 | nitric acid |
| 7440-38-2 | arsenic |
| 7439-92-1 | Lead from Lead Oxide |
| 7440-28-0 | Thallium from Thallium nitrate |
| 7782-49-2 | selenium |
| 7440-39-3 | Barium from Barium carbonate |
| 7440-43-9 | cadmium (non-pyrophoric) |

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**Product Name: Interference Check Standard, 18**

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| | |
|---|---|
| 7440-47-3 | Chromium from Chromium(III) nitrate nonahydrate |
| 7440-48-4 | cobalt |
| 7440-50-8 | copper |
| 7440-02-0 | nickel |
| 7440-22-4 | silver |
| 7440-62-2 | Vanadium from Ammonium trioxovanadate |
| 7440-66-6 | zinc powder -zinc dust (stabilized) |
| 7439-96-5 | manganese |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 7440-38-2 | arsenic |
| 7439-92-1 | Lead from Lead Oxide |
| 7440-43-9 | cadmium (non-pyrophoric) |
| 7440-48-4 | cobalt |
| 7440-02-0 | nickel |
| 7440-41-7 | Beryllium from Beryllium Acetate |

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

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

| | |
|---|---|
| 7440-43-9 | cadmium (non-pyrophoric) |

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

| | |
|---|---|
| 7440-43-9 | cadmium (non-pyrophoric) |

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 7440-38-2 | arsenic | A |
| 7439-92-1 | Lead from Lead Oxide | B2 |
| 7782-49-2 | selenium | D |
| 7440-39-3 | Barium from Barium carbonate | D, CBD(inh), NL(oral) |
| 7440-43-9 | cadmium (non-pyrophoric) | B1 |
| 7440-50-8 | copper | D |
| 7440-22-4 | silver | D |
| 7440-66-6 | zinc powder -zinc dust (stabilized) | D, I, II |
| 7439-96-5 | manganese | D |
| 7440-41-7 | Beryllium from Beryllium Acetate | B1, K/L(inh), CBD(oral) |

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7440-38-2 | arsenic | A1 |
| 7439-92-1 | Lead from Lead Oxide | A3 |
| 7440-39-3 | Barium from Barium carbonate | A4 |
| 7440-43-9 | cadmium (non-pyrophoric) | A2 |
| 7440-48-4 | cobalt | A3 |
| 7440-02-0 | nickel | A5 |

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

| | |
|---|---|
| 7440-38-2 | arsenic |
| 7440-43-9 | cadmium (non-pyrophoric) |
| 7440-02-0 | nickel |

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

GHS05 GHS08

· **Signal word** Danger

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**Safety Data Sheet**
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**Product Name: Interference Check Standard, 18**

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· **Hazard-determining components of labeling:**
nitric acid
arsenic
Lead from Lead Oxide
· **Hazard statements**
Causes severe skin burns and eye damage.
May cause cancer.
May damage fertility or the unborn child.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Carc. 1A: Carcinogenicity, Hazard Category 1A
Repr. 1A: Reproductive toxicity, Hazard Category 1A

**Safety Data Sheet**
**acc. to OSHA HCS**

*Printing date 10/26/2015* *Reviewed on 04/14/2015*

## 1 Identification

· **Product identifier**

· **Product Name: Interference Check Standard, 5**

· **Part Number:** INTER5-100 / 500
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

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



(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 04/14/2015

**Product Name: Interference Check Standard, 5**

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## 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 | 5.0% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7440-70-2 | Calcium from Calcium carbonate | 0.6% |
| 7439-89-6 | iron | 0.5% |
| 7439-95-4 | magnesium | 0.3% |
| 7429-90-5 | aluminium | 0.12% |
| 497-19-8 | sodium carbonate | 0.1% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 93.38% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** 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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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.

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**Product Name: Interference Check Standard, 5**

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· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |

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**Product Name: Interference Check Standard, 5**

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| | |
|---|---|
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.06697 g/cm³ (8.904 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 93.4 % |
| **Solids content:** | 1.6 % |
| · **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:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** |
|---|
| None of the ingredients is listed. |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |



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## 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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |

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| | |
|---|---|
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **UN "Model Regulation":** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, III |

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7697-37-2 | nitric acid |
| 7429-90-5 | aluminium |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7429-90-5 | aluminium | A4 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
*Immediately call a POISON CENTER/doctor.*
*Store locked up.*
*Dispose of contents/container in accordance with local/regional/national/international regulations.*
· **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** *10/26/2015 / -*
· **Abbreviations and acronyms:**
*ADR: Accord européen sur le transport 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*
*ACGIH: American Conference of Governmental Industrial Hygienists*
*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)*
*PBT: Persistent, Bioaccumulative and Toxic*
*vPvB: very Persistent and very Bioaccumulative*
*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*
*Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

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## 1 Identification

· **Product identifier**

· **Product Name: Mixed Calibration Standard 1**

· **Part Number:**
MIXSTD1-100
MIXSTD1-500
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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 Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 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**
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Wear protective gloves.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 1
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 1
Fire = 0
Reactivity = 0

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



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## 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** | | |
|---|---|---|
| 7439-92-1 | Lead from Lead Oxide | 0.05% |
| 7782-49-2 | selenium | 0.02% |
| 7440-43-9 | cadmium (non-pyrophoric) | 0.015% |
| 7440-66-6 | zinc powder -zinc dust (stabilized) | 0.015% |
| 7439-96-5 | manganese | 0.01% |
| 7440-41-7 | Beryllium from Beryllium Acetate | 0.005% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 97.885% |

## 4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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:** 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).
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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.



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## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |

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| | |
|---|---|
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.01875 g/cm³ (8.501 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 97.9 % |
| **Solids content:** | 0.1 % |
| · **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:**
· **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 from Lead Oxide | 2B |
| 7782-49-2 | selenium | 3 |
| 7440-43-9 | cadmium (non-pyrophoric) | 1 |
| 7440-41-7 | Beryllium from Beryllium Acetate | 1 |

| · **NTP (National Toxicology Program)** | | |
|---|---|---|
| 7439-92-1 | Lead from Lead Oxide | R |
| 7782-49-2 | selenium | R |
| 7440-43-9 | cadmium (non-pyrophoric) | K |
| 7440-41-7 | Beryllium from Beryllium Acetate | K |

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

| | |
|---|---|
| 7440-43-9 | cadmium (non-pyrophoric) |

## 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.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | Not applicable. |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |

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| | |
|---|---|
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III, (E) |

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7697-37-2 | nitric acid |
| 7439-92-1 | Lead from Lead Oxide |
| 7782-49-2 | selenium |
| 7440-43-9 | cadmium (non-pyrophoric) |
| 7440-66-6 | zinc powder -zinc dust (stabilized) |
| 7439-96-5 | manganese |
| 7440-41-7 | Beryllium from Beryllium Acetate |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 7439-92-1 | Lead from Lead Oxide |
| 7440-43-9 | cadmium (non-pyrophoric) |
| 7440-41-7 | Beryllium from Beryllium Acetate |

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

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

| | |
|---|---|
| 7440-43-9 | cadmium (non-pyrophoric) |

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

| | |
|---|---|
| 7440-43-9 | cadmium (non-pyrophoric) |

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 7439-92-1 | Lead from Lead Oxide | B2 |
| 7782-49-2 | selenium | D |
| 7440-43-9 | cadmium (non-pyrophoric) | B1 |
| 7440-66-6 | zinc powder -zinc dust (stabilized) | D, I, II |
| 7439-96-5 | manganese | D |
| 7440-41-7 | Beryllium from Beryllium Acetate | B1, K/L(inh), CBD(oral) |

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7439-92-1 | Lead from Lead Oxide | A3 |
| 7440-43-9 | cadmium (non-pyrophoric) | A2 |

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

| | |
|---|---|
| 7440-43-9 | cadmium (non-pyrophoric) |

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**Safety Data Sheet**
**acc. to OSHA HCS**

*Printing date 10/26/2015* *Reviewed on 09/25/2015*

**Product Name: Mixed Calibration Standard 1**

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

GHS07

· **Signal word** Warning
· **Hazard statements**
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Wear protective gloves.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
If skin irritation occurs: Get medical advice/attention.
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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

**Safety Data Sheet**
**acc. to OSHA HCS**

*Printing date 10/26/2015* *Reviewed on 12/24/2014*

## 1 Identification

· **Product identifier**

· **Product Name: Mixed Calibration Standard 2**

· **Part Number:** MIXSTD2-100 / 500
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

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



(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 12/24/2014

**Product Name: Mixed Calibration Standard 2**

(Contd. of page 1)

## 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 | 5.0% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7439-89-6 | iron | 1.0% |
| 7440-39-3 | Barium from Barium carbonate | 0.01% |
| 7440-48-4 | cobalt | 0.01% |
| 7440-50-8 | copper | 0.01% |
| 7440-62-2 | Vanadium from Ammonium trioxovanadate | 0.01% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 93.96% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** 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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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.

(Contd. on page 3)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Mixed Calibration Standard 2**

(Contd. of page 2)

· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |

(Contd. on page 4)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 12/24/2014

**Product Name: Mixed Calibration Standard 2**

(Contd. of page 3)

| | |
|---|---|
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.0961 g/cm³ (9.147 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 94.0 % |
| **Solids content:** | 1.0 % |
| · **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:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 7440-48-4 | cobalt | 2B |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |



(Contd. on page 5)

**Safety Data Sheet**
**acc. to OSHA HCS**

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**Product Name: Mixed Calibration Standard 2**

(Contd. of page 4)

## 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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |

(Contd. on page 6)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 12/24/2014

**Product Name: Mixed Calibration Standard 2**

(Contd. of page 5)

| | |
|---|---|
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, III |

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7697-37-2 | nitric acid |
| 7440-39-3 | Barium from Barium carbonate |
| 7440-48-4 | cobalt |
| 7440-50-8 | copper |
| 7440-62-2 | Vanadium from Ammonium trioxovanadate |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 7440-48-4 | cobalt |

· **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)**

| | | |
|---|---|---|
| 7440-39-3 | Barium from Barium carbonate | D, CBD(inh), NL(oral) |
| 7440-50-8 | copper | D |

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7440-39-3 | Barium from Barium carbonate | A4 |
| 7440-48-4 | cobalt | A3 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

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

GHS05

· **Signal word** Danger

(Contd. on page 7)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Mixed Calibration Standard 2**

(Contd. of page 6)

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

**Safety Data Sheet**
**acc. to OSHA HCS**

*Printing date 10/26/2015* *Reviewed on 10/26/2015*

## 1 Identification

· **Product identifier**

· **Product Name: Mixed Calibration Standard 3**

· **Part Number:**
MIXSTD3-100
MIXSTD3-500
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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 Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 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**
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Wear protective gloves.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 1
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 1
Fire = 0
Reactivity = 0

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



(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 10/26/2015

**Product Name: Mixed Calibration Standard 3**

(Contd. of page 1)

## 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% |
| 7664-39-3 | hydrofluoric acid | 0.2% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7440-38-2 | arsenic | 0.05% |
| 7440-21-3 | alkali fluorosilicates (NH4) | 0.01% |
| 7439-98-7 | molybdenum | 0.01% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 97.73% |

## 4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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:** 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).
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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 item 7.

(Contd. on page 3)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 10/26/2015

**Product Name: Mixed Calibration Standard 3**

(Contd. of page 2)

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |

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| | |
|---|---|
| · **Explosion limits:** | |
| **Lower:** | Not applicable. |
| **Upper:** | Not applicable. |
| · **Vapor pressure at 20 °C (68 °F):** | 23 hPa (17 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.01136 g/cm³ (8.44 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 97.7 % |
| **Solids content:** | 0.1 % |
| · **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:**
· **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)** | | |
|---|---|---|
| 7440-38-2 | arsenic | 1 |

| · **NTP (National Toxicology Program)** | | |
|---|---|---|
| 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.

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· **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.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Hydrofluoric acid, Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrofluoric acid, Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | Not applicable. |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |

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| | |
|---|---|
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROFLUORIC ACID, NITRIC ACID SOLUTION), 8, III, (E) |

## 15 Regulatory information

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

| · **Section 355 (extremely hazardous substances):** | |
|---|---|
| 7697-37-2 | nitric acid |
| 7664-39-3 | hydrofluoric acid |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 7697-37-2 | nitric acid |
| 7664-39-3 | hydrofluoric acid |
| 7440-38-2 | arsenic |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

| · **Chemicals known to cause cancer:** | |
|---|---|
| 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)** | | |
|---|---|---|
| 7440-38-2 | arsenic | A |

| · **TLV (Threshold Limit Value established by ACGIH)** | | |
|---|---|---|
| 7440-38-2 | arsenic | A1 |
| 7439-98-7 | molybdenum | A3 |

| · **NIOSH-Ca (National Institute for Occupational Safety and Health)** | |
|---|---|
| 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**
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Wear protective gloves.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.

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· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

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## 1 Identification

· **Product identifier**

· **Product Name: Mixed Calibration Standard 4**

· **Part Number:** MIXSTD4-100 / 500
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

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



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## 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 | 5.0% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7440-70-2 | Calcium from Calcium carbonate | 0.1% |
| 7440-09-7 | Potassium from Potassium nitrate | 0.04% |
| 7440-23-5 | Sodium from Sodium carbonate | 0.02% |
| 7429-90-5 | aluminium | 0.02% |
| 7440-02-0 | nickel | 0.002% |
| 7440-47-3 | Chromium from Chromium(III) nitrate nonahydrate | 0.002% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 94.816% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** 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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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.

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· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |

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| | |
|---|---|
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.02626 g/cm³ (8.564 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 94.8 % |
| **Solids content:** | 0.2 % |
| · **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:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 7440-02-0 | nickel | 1 |
| 7440-47-3 | Chromium from Chromium(III) nitrate nonahydrate | 3 |

| · **NTP (National Toxicology Program)** | | |
|---|---|---|
| 7440-02-0 | nickel | R |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |



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## 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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |

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| | |
|---|---|
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **UN "Model Regulation":** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, III |

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7697-37-2 | nitric acid |
| 7429-90-5 | aluminium |
| 7440-02-0 | nickel |
| 7440-47-3 | Chromium from Chromium(III) nitrate nonahydrate |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

| | |
|---|---|
| 7440-02-0 | nickel |

· **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)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7429-90-5 | aluminium | A4 |
| 7440-02-0 | nickel | A5 |

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

| | |
|---|---|
| 7440-02-0 | nickel |

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid

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· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

**Safety Data Sheet**
**acc. to OSHA HCS**

*Printing date 10/26/2015* *Reviewed on 12/04/2014*

## 1 Identification

· **Product identifier**

· **Product Name: Mixed Calibration Standard 5**

· **Part Number:** MIXSTD5-100 / 500
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

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



(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 12/04/2014

**Product Name: Mixed Calibration Standard 5**

(Contd. of page 1)

## 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 | 5.0% |
| 7664-39-3 | hydrofluoric acid | <0.9% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 87-69-4 | (+)-tartaric acid | <0.9% |
| 7439-95-4 | magnesium | 0.1% |
| 7440-28-0 | Thallium from Thallium nitrate | 0.02% |
| 7440-36-0 | antimony | 0.02% |
| 7440-42-8 | Boron from Ammonium tetraborate tetrahydrate | 0.01% |
| 7440-22-4 | silver | 0.005% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 93.045% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** 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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

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**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Mixed Calibration Standard 5**

(Contd. of page 2)

· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |
| **7664-39-3 hydrofluoric acid** | |
| PEL | Long-term value: 3 ppm<br>as F |
| REL | Long-term value: 2.5 mg/m³, 3 ppm<br>Ceiling limit value: 5* mg/m³, 6* ppm<br>*15-min, as F |
| TLV | Long-term value: 0.41 mg/m³, 0.5 ppm<br>Ceiling limit value: 1.64 mg/m³, 2 ppm<br>as F; Skin, BEI |

| · **Ingredients with biological limit values:** | |
|---|---|
| **7664-39-3 hydrofluoric acid** | |
| BEI | 3 mg/g creatinine<br>Medium: urine<br>Time: prior to shift<br>Parameter: Fluorides (background, nonspecific)<br><br>10 mg/g creatinine<br>Medium: urine<br>Time: end of shift<br>Parameter: Fluorides (background, nonspecific) |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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.

(Contd. on page 4)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Mixed Calibration Standard 5**

(Contd. of page 3)

· **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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density** | Not applicable. |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 93.0 % |
| **Solids content:** | 1.1 % |
| · **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.

(Contd. on page 5)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Mixed Calibration Standard 5**

(Contd. of page 4)

· **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: | | |
|---|---|---|
| **7664-39-3 hydrofluoric acid** | | |
| Oral | LD50 | 1276 mg/kg (rat) |

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · IARC (International Agency for Research on Cancer) |
|---|
| None of the ingredients is listed. |

| · NTP (National Toxicology Program) |
|---|
| None of the ingredients is listed. |

| · OSHA-Ca (Occupational Safety & Health Administration) |
|---|
| None of the ingredients is listed. |

## 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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.

## 14 Transport information

| · UN-Number | |
|---|---|
| · DOT, ADR, IMDG, IATA | UN3264 |
| · UN proper shipping name | |
| · DOT | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, hydrofluoric acid) |

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**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 12/04/2014

**Product Name: Mixed Calibration Standard 5**

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| | |
|---|---|
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, hydrofluoric acid) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, hydrofluoric acid) |

· **Transport hazard class(es)**

· **DOT**

| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |

· **ADR, IMDG, IATA**

| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, hydrofluoric acid), 8, III |

## 15 Regulatory information

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

| · **Section 355 (extremely hazardous substances):** | |
|---|---|
| 7697-37-2 | nitric acid |
| 7664-39-3 | hydrofluoric acid |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 7697-37-2 | nitric acid |
| 7664-39-3 | hydrofluoric acid |
| 7440-28-0 | Thallium from Thallium nitrate |
| 7440-36-0 | antimony |
| 7440-22-4 | silver |

| · **TSCA (Toxic Substances Control Act):** |
|---|
| All ingredients are listed. |

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**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 12/04/2014

**Product Name: Mixed Calibration Standard 5**

(Contd. of page 6)

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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)**

| | | |
|---|---|---|
| 7440-42-8 | Boron from Ammonium tetraborate tetrahydrate | I (oral) |
| 7440-22-4 | silver | D |

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 05/26/2015

## 1 Identification

· **Product identifier**

· **Product Name: Hydrochloric Acid Blank**

· **Part Number:** PLBLK-HCL
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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** The product is not classified according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Not Regulated
· **Hazard pictograms** Not Regulated
· **Signal word** Not Regulated
· **Hazard statements** Not Regulated
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 1
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 1
Fire = 0
Reactivity = 0

· **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:** | | |
|---|---|---|
| 7647-01-0 | hydrochloric acid | 5.0% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7732-18-5 | water, distilled, conductivity or of similar purity | 95.0% |

## 4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **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.



(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 05/26/2015

**Product Name: Hydrochloric Acid Blank**

(Contd. of page 1)

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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).
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7647-01-0 hydrochloric acid** | |
| PEL | Ceiling limit value: 7 mg/m³, 5 ppm |
| REL | Ceiling limit value: 7 mg/m³, 5 ppm |
| TLV | Ceiling limit value: 2.98 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 3)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 05/26/2015

**Product Name: Hydrochloric Acid Blank**

(Contd. of page 2)

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. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.0075 g/cm³ (8.408 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour 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:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 95.0 % |
| · **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.

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**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Hydrochloric Acid Blank**

(Contd. of page 3)

· **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:** | | |
|---|---|---|
| **7647-01-0 hydrochloric acid** | | |
| Oral | LD50 | 900 mg/kg (rabbit) |

· **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)** | | |
|---|---|---|
| 7647-01-0 | hydrochloric acid | 3 |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

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

## 14 Transport information

| · **UN-Number** | |
|---|---|
| · **DOT, ADR, IMDG, IATA** | UN1789 |
| · **UN proper shipping name** | |
| · **DOT** | Hydrochloric acid |
| · **ADR** | 1789 Hydrochloric acid |
| · **IMDG, IATA** | HYDROCHLORIC ACID |

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**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 05/26/2015

**Product Name: Hydrochloric Acid Blank**

(Contd. of page 4)

· **Transport hazard class(es)**

· **DOT**

| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |

· **ADR, IMDG, IATA**

| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **UN "Model Regulation":** | UN1789, Hydrochloric acid, 8, III |

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7647-01-0 | hydrochloric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7647-01-0 | hydrochloric acid |

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

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **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.

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**Safety Data Sheet**
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Printing date 10/26/2015 Reviewed on 05/26/2015

**Product Name: Hydrochloric Acid Blank**

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· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7647-01-0 | hydrochloric acid | A4 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** Not Regulated
· **Hazard pictograms** Not Regulated
· **Signal word** Not Regulated
· **Hazard statements** Not Regulated
· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 06/11/2015

## 1 Identification

· **Product identifier**

· **Product Name: Nitric Acid Blank**

· **Part Number:** PLBLK-HNO3
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

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



(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 06/11/2015

**Product Name: Nitric Acid Blank**

(Contd. of page 1)

## 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 | 5.0% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7732-18-5 | water, distilled, conductivity or of similar purity | 95.0% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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** Wear protective equipment. Keep unprotected persons away.
· **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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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 item 7.

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**Safety Data Sheet**
**acc. to OSHA HCS**

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**Product Name: Nitric Acid Blank**

(Contd. of page 2)

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | Product is not selfigniting. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |

(Contd. on page 4)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Nitric Acid Blank**

(Contd. of page 3)

| | |
|---|---|
| · **Explosion limits:** | |
| **Lower:** | Not applicable. |
| **Upper:** | Not applicable. |
| · **Vapor pressure at 20 °C (68 °F):** | 23 hPa (17 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.02515 g/cm³ (8.555 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour 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:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 95.0 % |
| · **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:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** |
|---|
| None of the ingredients is listed. |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

## 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 2 (Self-assessment): hazardous for water

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**Safety Data Sheet**
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**Product Name: Nitric Acid Blank**

(Contd. of page 4)

Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** |  |
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |

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**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Nitric Acid Blank**

(Contd. of page 5)

| | |
|---|---|
| · **IMDG** | |
| · **Limited quantities (LQ)** | 1L |
| · **Excepted quantities (EQ)** | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
| · **UN "Model Regulation":** | UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, III |

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.



(Contd. on page 7)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: Nitric Acid Blank**

(Contd. of page 6)

## 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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

**Safety Data Sheet**
**acc. to OSHA HCS**

*Printing date 10/26/2015* *Reviewed on 08/27/2015*

## 1 Identification

· **Product identifier**

· **Product Name: 100 µg/mL Mercury**

· **Part Number:**
PLHG2-1Y
PLHG2-1X
· **Application of the substance / the mixture** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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**

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 3
Fire = 0
Reactivity = 0

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

(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 08/27/2015

**Product Name: 100 µg/mL Mercury**

(Contd. of page 1)

· **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 | 5.0% |

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7439-97-6 | mercury | 0.01% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 94.99% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.
· **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:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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** Wear protective equipment. Keep unprotected persons away.
· **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).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **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.

(Contd. on page 3)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: 100 µg/mL Mercury**

(Contd. of page 2)

· **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 item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **7697-37-2 nitric acid** | |
| PEL | Long-term value: 5 mg/m³, 2 ppm |
| REL | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5 mg/m³, 2 ppm |
| TLV | Short-term value: 10 mg/m³, 4 ppm<br>Long-term value: 5.2 mg/m³, 2 ppm |

· **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.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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:** | 83 °C (181 °F) |
| · **Flash point:** | Not applicable. |
| · **Flammability (solid, gaseous):** | Not applicable. |

(Contd. on page 4)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 08/27/2015

**Product Name: 100 µg/mL Mercury**

(Contd. of page 3)

| | |
|---|---|
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.0264 g/cm³ (8.565 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour 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:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 95.0 % |
| · **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:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** | | |
|---|---|---|
| 7439-97-6 | mercury | 3 |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.

(Contd. on page 5)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: 100 µg/mL Mercury**

(Contd. of page 4)

· **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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
· **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.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, IMDG, IATA** | UN3264 |
| · **UN proper shipping name** | |
| · **DOT** | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **ADR** | 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) |
| · **IMDG, IATA** | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION) |
| · **Transport hazard class(es)** | |
| · **DOT** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **ADR, IMDG, IATA** | |


| | |
|---|---|
| · **Class** | 8 Corrosive substances |
| · **Label** | 8 |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | III |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Corrosive substances |
| · **Danger code (Kemler):** | 80 |
| · **EMS Number:** | F-A,S-B |
| · **Segregation groups** | Acids |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |

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**Safety Data Sheet**
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Printing date 10/26/2015 Reviewed on 08/27/2015

**Product Name: 100 µg/mL Mercury**

(Contd. of page 5)

· **Transport/Additional information:**

· **ADR**
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **IMDG**
· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution), 8, III

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

| | |
|---|---|
| 7697-37-2 | nitric acid |

· **Section 313 (Specific toxic chemical listings):**

| | |
|---|---|
| 7697-37-2 | nitric acid |
| 7439-97-6 | mercury |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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:**

| | |
|---|---|
| 7439-97-6 | mercury |

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

| | | |
|---|---|---|
| 7439-97-6 | mercury | D |

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|---|---|---|
| 7439-97-6 | mercury | A4 |

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

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

GHS05

· **Signal word** Danger

· **Hazard-determining components of labeling:**
nitric acid
· **Hazard statements**
Causes severe skin burns and eye damage.
· **Precautionary statements**
Do not breathe dusts or mists.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.

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**Safety Data Sheet**
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*Printing date 10/26/2015* *Reviewed on 08/27/2015*

***Product Name: 100 µg/mL Mercury***

(Contd. of page 6)

*Store locked up.*
*Dispose of contents/container in accordance with local/regional/national/international regulations.*
· ***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*** *10/26/2015 / -*
· ***Abbreviations and acronyms:***
*ADR: Accord européen sur le transport 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*
*ACGIH: American Conference of Governmental Industrial Hygienists*
*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)*
*PBT: Persistent, Bioaccumulative and Toxic*
*vPvB: very Persistent and very Bioaccumulative*
*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*
*Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 05/28/2015

## 1 Identification

· **Product identifier**

· **Product Name: 1000 µg/mL Antimony**

· **Part Number:** PLSB7-2M / 2Y / 2T / 2X
· **Application of the substance / the mixture** Certified Reference Material

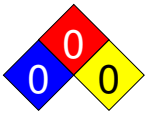
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA

· **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** The product is not classified according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Not Regulated
· **Hazard pictograms** Not Regulated
· **Signal word** Not Regulated
· **Hazard statements** Not Regulated
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**




Health = 0
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**


Health = 0
Fire = 0
Reactivity = 0

· **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:** Not Regulated

| · **Chemical identification of the substance/preparation** | | |
|---|---|---|
| 7697-37-2 | nitric acid | <0.9% |
| 87-69-4 | (+)-tartaric acid | 0.6% |
| 7440-36-0 | antimony | 0.1% |
| 7732-18-5 | water, distilled, conductivity or of similar purity | 98.4% |

## 4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for Doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 2)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: 1000 µg/mL Antimony**

(Contd. of page 1)

· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **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:** 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.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
No special measures required.
Follow good laboratory practices.
· **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:** None.
· **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 item 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:** The usual precautionary measures for handling chemicals should be followed.
· **Breathing equipment:** Not required.
· **Protection of hands:**
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:** Goggles recommended during refilling.



(Contd. on page 3)

**Safety Data Sheet**
**acc. to OSHA HCS**

Printing date 10/26/2015 Reviewed on 05/28/2015

**Product Name: 1000 µg/mL Antimony**

(Contd. of page 2)

## 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. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not applicable. |
| · **Auto igniting:** | 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 mm Hg) |
| · **Density at 20 °C (68 °F)** | 1.01052 g/cm³ (8.433 lbs/gal) |
| · **Relative density** | Not applicable. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Not miscible or difficult to mix. |
| · **Partition coefficient (n-octanol/water):** | Not applicable. |
| · **Viscosity:** | |
| **Dynamic:** | Not applicable. |
| **Kinematic:** | Not applicable. |
| · **Solvent content:** | |
| **Organic solvents:** | 0.0 % |
| **Water:** | 98.4 % |
| **Solids content:** | 0.7 % |
| · **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:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.

(Contd. on page 4)

**Safety Data Sheet**
**acc. to OSHA HCS**



**Product Name: 1000 µg/mL Antimony**

(Contd. of page 3)

· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

| · **IARC (International Agency for Research on Cancer)** |
|---|
| None of the ingredients is listed. |

| · **NTP (National Toxicology Program)** |
|---|
| None of the ingredients is listed. |

| · **OSHA-Ca (Occupational Safety & Health Administration)** |
|---|
| None of the ingredients is listed. |

## 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:** Smaller quantities can be disposed of with household waste.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

| | |
|---|---|
| · **UN-Number**<br>· **DOT, ADR, ADN, IMDG, IATA** | Not Regulated |
| · **UN proper shipping name**<br>· **DOT, ADR, ADN, IMDG, IATA** | Not Regulated |
| · **Transport hazard class(es)**<br>· **DOT, ADR, ADN, IMDG, IATA**<br>· **Class** | Not Regulated |
| · **Packing group**<br>· **DOT, ADR, IMDG, IATA** | Not Regulated |
| · **Environmental hazards:**<br>· **Marine pollutant:** | No |
| · **Special precautions for user** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **UN "Model Regulation":** | Not Regulated |



(Contd. on page 5)

**Safety Data Sheet**
**acc. to OSHA HCS**



(Contd. of page 4)

## 15 Regulatory information

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

| · **Section 355 (extremely hazardous substances):** | |
|---|---|
| 7697-37-2 | nitric acid |

| · **Section 313 (Specific toxic chemical listings):** | |
|---|---|
| 7697-37-2 | nitric acid |
| 7440-36-0 | antimony |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **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)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** Not Regulated
· **Hazard pictograms** Not Regulated
· **Signal word** Not Regulated
· **Hazard statements** Not Regulated
· **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** 10/26/2015 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport 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
ACGIH: American Conference of Governmental Industrial Hygienists
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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative