

Product code	Description
<b>SPXMT-KIT</b>	<b>MINERAL TESTING KIT</b>

## Components:

CLCA2-2M	Stock Inorganic Standard
CLMG2-2M	Stock Inorganic Standard
CLFE2-2M	Stock Inorganic Standard
CLK2-2M	Stock Inorganic Standard
CLNA2-2M	Stock Inorganic Standard
CLBLK-HNO3M	Stock Inorganic Standard

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

Printing date 09/11/2015

Reviewed on 09/11/2015

## 1 Identification

- **Product identifier**
- **Product Name:** 1000 µg/mL Calcium
- **Part Number:**  
CLCA2-2M  
CLCA2-2Y
- **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*

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

HEALTH	1	<i>Health = 1</i>
FIRE	0	<i>Fire = 0</i>
REACTIVITY	0	<i>Reactivity = 0</i>

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

US

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**Product Name: 1000 µg/mL Calcium**

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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%
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- **Chemical identification of the substance/preparation**

471-34-1	calcium carbonate	0.25%
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7732-18-5	water, distilled, conductivity or of similar purity	97.75%
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### 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:** CO<sub>2</sub>, 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.

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US

Product Name: 1000 µg/mL Calcium

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## · Control parameters

## · Components with limit values that require monitoring at the workplace:

## 7697-37-2 nitric acid

PEL Long-term value: 5 mg/m<sup>3</sup>, 2 ppmREL Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 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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**Product Name: 1000 µg/mL Calcium**

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· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Vapor pressure:</b> Not determined.	
· <b>Density at 20 °C (68 °F)</b> 1.01431 g/cm <sup>3</sup> (8.464 lbs/gal)	
· <b>Relative density</b> Not applicable.	
· <b>Vapour density</b> Not applicable.	
· <b>Evaporation rate</b> Not applicable.	
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b> Not applicable.	
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	97.8 %
· <b>Solids content:</b> 0.3 %	
· <b>Other information</b> 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)**

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.

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Printing date 09/11/2015

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**Product Name: 1000 µg/mL Calcium**



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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

· <b>UN-Number</b> · <b>DOT, ADR, IMDG, IATA</b>	UN3264
· <b>UN proper shipping name</b> · <b>DOT</b> · <b>ADR</b> · <b>IMDG, IATA</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
· <b>Transport hazard class(es)</b> · <b>DOT</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances 8
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances 8
· <b>Packing group</b> · <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b> · <b>Segregation groups</b>	Warning: Corrosive substances 80 F-A,S-B Acids
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b> · <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b> · <b>Limited quantities (LQ)</b>	5L

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**Product Name: 1000 µg/mL Calcium**

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· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

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

· **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**



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

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**Product Name: 1000 µg/mL Calcium**

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**· Contact:**

SPEX CertiPrep, LLC.  
1-732-549-7144

**· Date of preparation / last revision 09/11/2015 / -****· 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

US



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

Printing date 04/05/2016

Reviewed on 04/05/2016

## 1 Identification

- **Product identifier**
- **Product Name:** 1000 µg/mL Magnesium
- **Part Number:**  
CLMG2-2M  
CLMG2-2Y
- **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*

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

HEALTH	1	<i>Health = 1</i>
FIRE	0	<i>Fire = 0</i>
REACTIVITY	0	<i>Reactivity = 0</i>

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

US

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

Printing date 04/05/2016

Reviewed on 04/05/2016

**Product Name: 1000 µg/mL Magnesium**

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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%
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- **Chemical identification of the substance/preparation**

7439-95-4	magnesium	0.1%
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7732-18-5	water, distilled, conductivity or of similar purity	97.9%
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### 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:** CO<sub>2</sub>, 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.

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US

Product Name: 1000 µg/mL Magnesium

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## · Control parameters

## · Components with limit values that require monitoring at the workplace:

## 7697-37-2 nitric acid

PEL Long-term value: 5 mg/m<sup>3</sup>, 2 ppmREL Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 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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**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 04/05/2016

Reviewed on 04/05/2016

**Product Name: 1000 µg/mL Magnesium**

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· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F)</b>	1.0108 g/cm <sup>3</sup> (8.435 lbs/gal)
· <b>Relative density</b>	Not applicable.
· <b>Vapor density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not applicable.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	97.9 %
· <b>Solids content:</b>	0.1 %
· <b>Other information</b>	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)**

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.

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

Printing date 04/05/2016

Reviewed on 04/05/2016

**Product Name: 1000 µg/mL Magnesium**



(Contd. of page 4)

- **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

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

(Contd. on page 6)

US

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

Printing date 04/05/2016

Reviewed on 04/05/2016

**Product Name: 1000 µg/mL Magnesium**

(Contd. of page 5)

- **IMDG**
- **Limited quantities (LQ)**
- **Excepted quantities (EQ)**

5L  
Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml

- **UN "Model Regulation":**

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 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**



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

(Contd. on page 7)

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

Printing date 04/05/2016

Reviewed on 04/05/2016

**Product Name: 1000 µg/mL Magnesium**

(Contd. of page 6)

**· Contact:**

SPEX CertiPrep, LLC.  
1-732-549-7144

**· Date of preparation / last revision 04/05/2016 / -****· 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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

US

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

Printing date 01/07/2016

Reviewed on 01/07/2016

## 1 Identification

- **Product identifier**
- **Product Name:** 1000 µg/mL Iron
- **Part Number:**  
CLFE2-2M  
CLFE2-2Y
- **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*

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



*Health = 1*  
*Fire = 0*  
*Reactivity = 0*

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

US

(Contd. on page 2)



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

Printing date 01/07/2016

Reviewed on 01/07/2016

Product Name: 1000 µg/mL Iron

(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%
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- **Chemical identification of the substance/preparation**

7439-89-6	iron	0.1%
-----------	------	------

7732-18-5	water, distilled, conductivity or of similar purity	97.9%
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### 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:** CO<sub>2</sub>, 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)

US

Product Name: 1000 µg/mL Iron

(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/m<sup>3</sup>, 2 ppmREL Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 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.

(Contd. on page 4)

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

Printing date 01/07/2016

Reviewed on 01/07/2016

**Product Name: 1000 µg/mL Iron**

(Contd. of page 3)

· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Vapor pressure:</b> Not determined.	
· <b>Density at 20 °C (68 °F)</b> 1.01692 g/cm <sup>3</sup> (8.486 lbs/gal)	
· <b>Relative density</b> Not applicable.	
· <b>Vapor density</b> Not applicable.	
· <b>Evaporation rate</b> Not applicable.	
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b> Not applicable.	
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	97.9 %
· <b>Solids content:</b> 0.1 %	
· <b>Other information</b> 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)**

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.

(Contd. on page 5)

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

Printing date 01/07/2016

Reviewed on 01/07/2016

**Product Name: 1000 µg/mL Iron**



(Contd. of page 4)

- **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

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

(Contd. on page 6)

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

Printing date 01/07/2016

Reviewed on 01/07/2016

Product Name: 1000 µg/mL Iron

(Contd. of page 5)

<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	UN 3264 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**



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.

(Contd. on page 7)

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

Printing date 01/07/2016

Reviewed on 01/07/2016

**Product Name: 1000 µg/mL Iron**

(Contd. of page 6)

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

· **Contact:**

SPEX CertiPrep, LLC.  
1-732-549-7144

· **Date of preparation / last revision** 01/07/2016 / -

· **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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

US

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

Printing date 01/11/2016

Reviewed on 01/11/2016

## 1 Identification

- **Product identifier**
- **Product Name:** 1000 µg/mL Potassium
- **Part Number:**  
CLK2-2M  
CLK2-2Y
- **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*

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

HEALTH	1	<i>Health = 1</i>
FIRE	0	<i>Fire = 0</i>
REACTIVITY	0	<i>Reactivity = 0</i>

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

US

(Contd. on page 2)

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

Printing date 01/11/2016

Reviewed on 01/11/2016

**Product Name: 1000 µg/mL Potassium**

(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%
-----------	-------------	------

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

7440-09-7	Potassium from Potassium nitrate	0.1%
-----------	----------------------------------	------

7732-18-5	water, distilled, conductivity or of similar purity	97.9%
-----------	---	-------

### 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:** CO<sub>2</sub>, 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.

(Contd. on page 3)



Product Name: 1000 µg/mL Potassium

(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/m<sup>3</sup>, 2 ppmREL Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 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.

(Contd. on page 4)

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

Printing date 01/11/2016

Reviewed on 01/11/2016

**Product Name: 1000 µg/mL Potassium**

(Contd. of page 3)

· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Vapor pressure:</b> Not determined.	
· <b>Density at 20 °C (68 °F)</b> 1.01117 g/cm <sup>3</sup> (8.438 lbs/gal)	
· <b>Relative density</b> Not applicable.	
· <b>Vapor density</b> Not applicable.	
· <b>Evaporation rate</b> Not applicable.	
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b> Not applicable.	
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	97.9 %
· <b>Solids content:</b> 0.1 %	
· <b>Other information</b> 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)**

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.

(Contd. on page 5)

**Safety Data Sheet**  
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Reviewed on 01/11/2016

**Product Name: 1000 µg/mL Potassium**



(Contd. of page 4)

- **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

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

(Contd. on page 6)

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**Safety Data Sheet**  
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Reviewed on 01/11/2016

**Product Name: 1000 µg/mL Potassium**

(Contd. of page 5)

<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	<p>UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III</p>

### 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**



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.

(Contd. on page 7)

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

Printing date 01/11/2016

Reviewed on 01/11/2016

**Product Name: 1000 µg/mL Potassium**

(Contd. of page 6)

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

· **Contact:**

SPEX CertiPrep, LLC.

1-732-549-7144

· **Date of preparation / last revision** 01/11/2016 / -

· **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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

US

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

Printing date 01/14/2016

Reviewed on 01/14/2016

## 1 Identification

- **Product identifier**
- **Product Name:** 1000 µg/mL Sodium
- **Part Number:**  
CLNA2-2M  
CLNA2-2Y
- **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*

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



*Health = 1*  
*Fire = 0*  
*Reactivity = 0*

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

US

(Contd. on page 2)

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

Printing date 01/14/2016

Reviewed on 01/14/2016

Product Name: 1000 µg/mL Sodium

(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%
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- **Chemical identification of the substance/preparation**

7440-23-5	Sodium from Sodium carbonate	0.1%
-----------	------------------------------	------

7732-18-5	water, distilled, conductivity or of similar purity	97.9%
-----------	---	-------

### 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:** CO<sub>2</sub>, 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)

US

Product Name: 1000 µg/mL Sodium

(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/m<sup>3</sup>, 2 ppmREL Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 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.

(Contd. on page 4)



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

Printing date 01/14/2016

Reviewed on 01/14/2016

**Product Name: 1000 µg/mL Sodium**

(Contd. of page 3)

· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Vapor pressure:</b> Not determined.	
· <b>Density at 20 °C (68 °F)</b> 1.01159 g/cm <sup>3</sup> (8.442 lbs/gal)	
· <b>Relative density</b> Not applicable.	
· <b>Vapor density</b> Not applicable.	
· <b>Evaporation rate</b> Not applicable.	
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b> Not applicable.	
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	97.9 %
· <b>Solids content:</b> 0.1 %	
· <b>Other information</b> 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)**

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.

(Contd. on page 5)

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

Printing date 01/14/2016

Reviewed on 01/14/2016

**Product Name: 1000 µg/mL Sodium**



(Contd. of page 4)

- **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

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

(Contd. on page 6)

US

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

Printing date 01/14/2016

Reviewed on 01/14/2016

**Product Name: 1000 µg/mL Sodium**

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<ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	<p>UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION), 8, III</p>

### 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**



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.

(Contd. on page 7)

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

Printing date 01/14/2016

Reviewed on 01/14/2016

**Product Name: 1000 µg/mL Sodium**

(Contd. of page 6)

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

· **Contact:**

SPEX CertiPrep, LLC.

1-732-549-7144

· **Date of preparation / last revision** 01/14/2016 / -

· **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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

US

**1 Identification**

- **Product identifier**
- **Product Name:** Nitric Acid Blank
- **Part Number:** CLBLK-HNO3M
- **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**



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**



- **Signal word** Warning
- **Hazard statements**  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.
- **Precautionary statements**  
Wash thoroughly after handling.  
Wear protective gloves / 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)**



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



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

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

Printing date 07/13/2017

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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%
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- **Chemical identification of the substance/preparation**

7732-18-5	water, distilled, conductivity or of similar purity	98.0%
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### 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:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
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.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

7697-37-2	nitric acid	0.16 ppm
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- **PAC-2:**

7697-37-2	nitric acid	24 ppm
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- **PAC-3:**

7697-37-2	nitric acid	92 ppm
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### 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/m<sup>3</sup>, 2 ppmREL Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5 mg/m<sup>3</sup>, 2 ppmTLV Short-term value: 10 mg/m<sup>3</sup>, 4 ppmLong-term value: 5.2 mg/m<sup>3</sup>, 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.

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· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not applicable.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable.
<b>Upper:</b>	Not applicable.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F)</b>	1.01006 g/cm <sup>3</sup> (8.429 lbs/gal)
· <b>Relative density</b>	Not applicable.
· <b>Vapor density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not applicable.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	98.0 %
· <b>Other information</b>	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)**

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.

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- **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

· <b>UN-Number</b> · <b>DOT, ADR, IMDG, IATA</b>	UN3264
· <b>UN proper shipping name</b> · <b>DOT</b> · <b>ADR</b> · <b>IMDG, IATA</b>	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION)
· <b>Transport hazard class(es)</b> · <b>DOT</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances 8
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b> · <b>Label</b>	8 Corrosive substances 8
· <b>Packing group</b> · <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b> · <b>Segregation groups</b> · <b>Stowage Category</b> · <b>Stowage Code</b>	Warning: Corrosive substances 80 F-A,S-B Acids A SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.

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· **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)**

· **Excepted quantities (EQ)**

5L

Code: E1

Maximum net quantity per inner packaging: 30 ml

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

### 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**



GHS07

· **Signal word** Warning

· **Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Precautionary statements**

Wash thoroughly after handling.

Wear protective gloves / 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** 07/13/2017 / -

· **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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

US