



## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** VeriSpec<sup>®</sup> Multi-Element Standard 19  
400 ppm Ti; 200 ppm Bi, In, Pb; 150 ppm Ga, 100 ppm Al; 50 ppm Ag, Ni; 25 ppm Cr; 20 ppm Cd, Co

**Product Number:** RV010866

**Other Identifying Product Numbers:** RV010866-100N

#### 1.2. Recommended Use and Restrictions on Use

Calibration Standard

#### 1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Ricca Chemical Company  
**Address:** 448 West Fork Drive

Arlington, TX 76012 USA

**Telephone:** 888-467-4222

#### 1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300  
CHEMTREC (International) 1+ 703-527-3887

# Safety Data Sheet

## SECTION 2: Hazard(s) Identification

### 2.1. Classification of the Substance or Mixture

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statements	Precautionary Statements:
Acute Toxicity - Inhalation	Category 2	H330	P260, P271, P285, P304+P340, P310, P320, P403+P233, P405, P501
Skin Corrosion / Irritation	Category 1	H314	P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501
Eye Damage / Irritation	Category 1	H318	P280, P305+P351+P338, P310
Corrosive to Metals	Category 1	H290	P234, P390, P406
Hazardous to the Aquatic Environment (Acute)	Category 2	H401	P273, P501
Hazardous to the Aquatic Environment (Chronic)	Category 2	H411	P273, P391, P501

### 2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

## Safety Data Sheet

**Precautionary Statements:**

Precautionary Number	Precautionary Statement
P234	Keep only in original container.
P260	Do not breathe fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P320	Specific treatment is urgent (Wash areas of contact with water.).
P321	Specific treatment (Wash areas of contact with water.).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

**2.4. Hazards not Otherwise Classified or Covered by GHS**

Data not available.

# Safety Data Sheet

## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H <sub>2</sub> O	18.01 g/mol	7732-18-5	94.55
Nitric Acid	HNO <sub>3</sub>	63.01 g/mol	7697-37-2	5.00
Aluminum Nitrate	Al(NO <sub>3</sub> ) <sub>3</sub>	212.99 g/mol	13473-90-0	0.14
Indium (III) Nitrate Hydrate	In(NO <sub>3</sub> ) <sub>3</sub> ·xH <sub>2</sub> O	mol (anhydrous basis)	13465-14-0	< 0.1
Gallium Nitrate Hydrate	Ga(NO <sub>3</sub> ) <sub>3</sub> ·xH <sub>2</sub> O	275.75 g/mol	69365-72-6	< 0.1
Thallium (I) Nitrate	TlNO <sub>3</sub>	266.38 g/mol	10102-45-1	< 0.1
Bismuth (III) Nitrate Pentahydrate	Bi(NO <sub>3</sub> ) <sub>3</sub> ·5H <sub>2</sub> O	485.07 g/mol	10035-06-0	< 0.1
Lead Nitrate	Pb(NO <sub>3</sub> ) <sub>2</sub>	331.20 g/mol	10099-74-8	< 0.1
Nickel (II) Nitrate	Ni(NO <sub>3</sub> ) <sub>2</sub>	182.70 g/mol	13138-45-9	< 0.1
Chromium (III) Nitrate	Cr(NO <sub>3</sub> ) <sub>3</sub>	238.01 g/mol	13548-38-4	< 0.1
Boric Acid	H <sub>3</sub> BO <sub>3</sub>	61.83 g/mol	10043-35-3	< 0.1
Silver Nitrate	AgNO <sub>3</sub>	169.87 g/mol	7761-88-8	< 0.1
Ferric Nitrate	Fe(NO <sub>3</sub> ) <sub>3</sub>	241.85 g/mol	10421-48-4	< 0.1
Cobalt (II) Nitrate	Co(NO <sub>3</sub> ) <sub>2</sub>	182.94 g/mol	10141-05-6	< 0.1
Cupric Nitrate	Cu(NO <sub>3</sub> ) <sub>2</sub> ·xH <sub>2</sub> O	251.10 g/mol	3251-23-8	< 0.1
Zinc Nitrate	Zn(NO <sub>3</sub> ) <sub>2</sub>	189.41 g/mol	7779-88-6	< 0.1
Cadmium Nitrate	CdN <sub>2</sub> O <sub>6</sub>	236.42 g/mol	10325-94-7	< 0.1
Manganese Nitrate	Mn(NO <sub>3</sub> ) <sub>2</sub>	178.94 g/mol	10377-66-9	< 0.1
Beryllium Nitrate	Be(NO <sub>3</sub> ) <sub>2</sub>	133.02 g/mol	13597-99-4	< 0.1
Barium Nitrate	Ba(NO <sub>3</sub> ) <sub>2</sub>	261.33 g/mol	10022-31-8	< 0.1
Strontium Nitrate	Sr(NO <sub>3</sub> ) <sub>2</sub>	211.62 g/mol	10042-76-9	< 0.1

## SECTION 4: First-Aid Measures

### 4.1. General First Aid Information

**Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

**Ingestion:** IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

## Safety Data Sheet

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage. Causes serious eye damage. Fatal if inhaled.

### 4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment is urgent (Wash areas of contact with water.). Specific treatment (Wash areas of contact with water.).

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Not considered to be a fire or explosion hazard.

### 5.2. Specific Hazards Arising from the Substance or Mixture

Not considered to be a fire or explosion hazard.

### 5.3. Special Protective Equipment for Firefighters

Wear protective clothing and NIOSH-approved breathing equipment appropriate for the surrounding fire.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

### 6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

Store in corrosive resistant container with a resistant inner liner.

## Safety Data Sheet

### SECTION 8: Exposure Controls / Personal Protection

#### 8.1 Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Barium Nitrate (10022-31-8)	TLV-TWA	USA	"0.5 mg/m <sup>3</sup> TWA (as Ba)" As Barium soluble compounds [RR-00049-7]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Barium Nitrate (10022-31-8)	TWA	USA	"0.5 mg/m <sup>3</sup> TWA (regulated under CAS 7440-39-3, as Ba)" As Barium, soluble compounds [RR-00049-7]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Barium Nitrate (10022-31-8)	TLV-TWA	USA	0.5 mg/m <sup>3</sup> TWA (as Ba)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Barium Nitrate (10022-31-8)	TWA	USA	0.5 mg/m <sup>3</sup> TWA (regulated under CAS 7440-39-3, as Ba)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Boric Acid (10043-35-3)	TLV-TWA	USA	2 mg/m <sup>3</sup> TWA (inhalable particulate matter, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Boric Acid (10043-35-3)	TLV-STEL	USA	6 mg/m <sup>3</sup> STEL (inhalable particulate matter, listed under Borate compounds, inorganic)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Boric Acid (10043-35-3)	TLV-TWA	USA	"2 mg/m <sup>3</sup> TWA (inhalable particulate matter)" As Borate compounds, inorganic [RR-33876-1]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Boric Acid (10043-35-3)	TLV-STEL	USA	"6 mg/m <sup>3</sup> STEL (inhalable particulate matter)" As Borate compounds, inorganic [RR-33876-1]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Boric Acid (10043-35-3)	TLV-TWA	USA	2 mg/m <sup>3</sup> TWA (inhalable particulate matter)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Boric Acid (10043-35-3)	TLV-STEL	USA	6 mg/m <sup>3</sup> STEL (inhalable particulate matter)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

## Safety Data Sheet

Lead Nitrate (10099-74-8)	PEL	USA	"30 µg/m <sup>3</sup> Action Level (See 29 CFR 1910.1025, as Pb); 50 µg/m <sup>3</sup> TWA (as Pb)" As Lead, inorganic compounds [RR-00538-9]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Lead Nitrate (10099-74-8)	TWA	USA	"50 µg/m <sup>3</sup> TWA (as Pb)" As Lead, inorganic compounds [RR-00538-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Lead Nitrate (10099-74-8)	TLV-TWA	USA	"0.05 mg/m <sup>3</sup> TWA (as Pb)" As Lead inorganic compounds [RR-00538-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead Nitrate (10099-74-8)	PEL	USA	30 µg/m <sup>3</sup> Action Level (See 29 CFR 1910.1025, as Pb); 50 µg/m <sup>3</sup> TWA (as Pb)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Lead Nitrate (10099-74-8)	TLV-TWA	USA	0.05 mg/m <sup>3</sup> TWA (as Pb)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead Nitrate (10099-74-8)	TWA	USA	50 µg/m <sup>3</sup> TWA (as Pb)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Thallium (I) Nitrate (10102-45-1)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as TI)" As Thallium compounds [RR-00575-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Thallium (I) Nitrate (10102-45-1)	TWA	USA	"0.1 mg/m <sup>3</sup> TWA (as TI)" As Thallium, soluble compounds [RR-00048-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Thallium (I) Nitrate (10102-45-1)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as TI)" As Thallium compounds [RR-00575-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Thallium (I) Nitrate (10102-45-1)	TWA	USA	"0.1 mg/m <sup>3</sup> TWA (as TI)" As Thallium, soluble compounds [RR-00048-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Thallium (I) Nitrate (10102-45-1)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as TI)" As Thallium compounds [RR-00575-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Thallium (I) Nitrate (10102-45-1)	TWA	USA	0.1 mg/m <sup>3</sup> TWA (as TI)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Thallium (I) Nitrate (10102-45-1)	TLV-TWA	USA	0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as TI)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

## Safety Data Sheet

Thallium (I) Nitrate (10102-45-1)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Tl)" As Thallium compounds [RR-00575-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (II) Nitrate (10141-05-6)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Co)" As Cobalt inorganic compounds [RR-02516-1]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (II) Nitrate (10141-05-6)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Co)" As Cobalt inorganic compounds [RR-02516-1]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (II) Nitrate (10141-05-6)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Co)" As Cobalt inorganic compounds [RR-02516-1]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (II) Nitrate (10141-05-6)	TLV-TWA	USA	0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Co)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (II) Nitrate (10141-05-6)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Co)" As Cobalt inorganic compounds [RR-02516-1]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	PEL	USA	"5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Cd); 0.002 mg/m <sup>3</sup> TWA (respirable particulate matter, as Cd)" As Cadmium compounds [RR-00559-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)



## Safety Data Sheet

Cadmium Nitrate (10325-94-7)	PEL	USA	"5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Cd); 0.002 mg/m <sup>3</sup> TWA (respirable particulate matter, as Cd)" As Cadmium compounds [RR-00559-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	PEL	USA	"5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Cd); 0.002 mg/m <sup>3</sup> TWA (respirable particulate matter, as Cd)" As Cadmium compounds [RR-00559-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	PEL	USA	"5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
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Cadmium Nitrate (10325-94-7)	PEL	USA	5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	0.01 mg/m <sup>3</sup> TWA (as Cd); 0.002 mg/m <sup>3</sup> TWA (respirable particulate matter, as Cd)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

## Safety Data Sheet

Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Cd); 0.002 mg/m <sup>3</sup> TWA (respirable particulate matter, as Cd)" As Cadmium compounds [RR-00559-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	PEL	USA	"5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Cd); 0.002 mg/m <sup>3</sup> TWA (respirable particulate matter, as Cd)" As Cadmium compounds [RR-00559-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	PEL	USA	"5 µg/m <sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m <sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Manganese Nitrate (10377-66-9)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (respirable particulate matter, as Mn); 0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Mn)" As Manganese inorganic compounds [RR-03861-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese Nitrate (10377-66-9)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (respirable particulate matter, as Mn); 0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Mn)" As Manganese inorganic compounds [RR-03861-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

## Safety Data Sheet

Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese Nitrate (10377-66-9)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (respirable particulate matter, as Mn); 0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Mn)" As Manganese inorganic compounds [RR-03861-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese Nitrate (10377-66-9)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (respirable particulate matter, as Mn); 0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Mn)" As Manganese inorganic compounds [RR-03861-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	5 mg/m <sup>3</sup> Ceiling (as Mn)	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese Nitrate (10377-66-9)	TLV-TWA	USA	0.02 mg/m <sup>3</sup> TWA (respirable particulate matter, as Mn); 0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Mn)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits

## Safety Data Sheet

Manganese Nitrate (10377-66-9)	TLV-TWA	USA	"0.02 mg/m <sup>3</sup> TWA (respirable particulate matter, as Mn); 0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Mn)" As Manganese inorganic compounds [RR-03861-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	"5 mg/m <sup>3</sup> Ceiling (as Mn)" As Manganese compounds [RR-00602-0]	U.S. - OSHA - Final PELs - Ceiling Limits
Ferric Nitrate (10421-48-4)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (as Fe)" As Iron salts, soluble [RR-00521-0]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Ferric Nitrate (10421-48-4)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (as Fe)" As Iron salts, soluble [RR-00521-0]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Ferric Nitrate (10421-48-4)	TLV-TWA	USA	1 mg/m <sup>3</sup> TWA (as Fe)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Ni)" As Nickel soluble inorganic compounds [RR-04616-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nickel (II) Nitrate (13138-45-9)	TWA	USA	"1 mg/m <sup>3</sup> TWA (as Ni)" As Nickel, soluble compounds [RR-00038-4]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TWA	USA	"1 mg/m <sup>3</sup> TWA (as Ni)" As Nickel, soluble compounds [RR-00038-4]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Ni)" As Nickel soluble inorganic compounds [RR-04616-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Ni)" As Nickel soluble inorganic compounds [RR-04616-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nickel (II) Nitrate (13138-45-9)	TWA	USA	"1 mg/m <sup>3</sup> TWA (as Ni)" As Nickel, soluble compounds [RR-00038-4]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

## Safety Data Sheet

Nickel (II) Nitrate (13138-45-9)	TWA	USA	"1 mg/m <sup>3</sup> TWA (as Ni)" As Nickel, soluble compounds [RR-00038-4]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Ni)" As Nickel soluble inorganic compounds [RR-04616-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Ni)" As Nickel soluble inorganic compounds [RR-04616-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nickel (II) Nitrate (13138-45-9)	TWA	USA	"1 mg/m <sup>3</sup> TWA (as Ni)" As Nickel, soluble compounds [RR-00038-4]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TWA	USA	1 mg/m <sup>3</sup> TWA (as Ni)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TWA	USA	"1 mg/m <sup>3</sup> TWA (as Ni)" As Nickel, soluble compounds [RR-00038-4]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	0.1 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Ni)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Indium (III) Nitrate Hydrate (13465-14-(	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (as In)" As Indium compounds [RR-00600-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Indium (III) Nitrate Hydrate (13465-14-(	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (as In)" As Indium compounds [RR-00600-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Indium (III) Nitrate Hydrate (13465-14-(	TLV-TWA	USA	0.1 mg/m <sup>3</sup> TWA (as In)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Indium (III) Nitrate Hydrate (13465-14-(	TLV-TWA	USA	"0.1 mg/m <sup>3</sup> TWA (as In)" As Indium compounds [RR-00600-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Chromium (III) Nitrate (13548-38-4)	TWA	USA	"0.5 mg/m <sup>3</sup> TWA (as Cr)" As Chromium(III) compounds [RR-03889-1]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Chromium (III) Nitrate (13548-38-4)	TWA	USA	"0.5 mg/m <sup>3</sup> TWA (as Cr)" As Chromium(III) compounds [RR-03889-1]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Chromium (III) Nitrate (13548-38-4)	TWA	USA	0.5 mg/m <sup>3</sup> TWA (as Cr)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

## Safety Data Sheet

Chromium (III) Nitrate (13548-38-4)	TWA	USA	"0.5 mg/m <sup>3</sup> TWA (as Cr)" As Chromium(III) compounds [RR-03889-1]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Chromium (III) Nitrate (13548-38-4)	TWA	USA	"0.5 mg/m <sup>3</sup> TWA (as Cr)" As Chromium(III) compounds [RR-03889-1]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	TWA	USA	"0.2 µg/m <sup>3</sup> TWA (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	"0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)" As Beryllium compounds [RR-00557-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	"2 µg/m <sup>3</sup> Ceiling (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	"2 µg/m <sup>3</sup> Ceiling (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium Nitrate (13597-99-4)	TWA	USA	"0.2 µg/m <sup>3</sup> TWA (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	"0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)" As Beryllium compounds [RR-00557-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	"0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)" As Beryllium compounds [RR-00557-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium Nitrate (13597-99-4)	TWA	USA	"0.2 µg/m <sup>3</sup> TWA (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	"2 µg/m <sup>3</sup> Ceiling (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	2 µg/m <sup>3</sup> Ceiling (as Be)	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

## Safety Data Sheet

Beryllium Nitrate (13597-99-4)	TWA	USA	0.2 µg/m <sup>3</sup> TWA (as Be)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	"2 µg/m <sup>3</sup> Ceiling (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium Nitrate (13597-99-4)	TWA	USA	"0.2 µg/m <sup>3</sup> TWA (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	"0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)" As Beryllium compounds [RR-00557-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	"0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)" As Beryllium compounds [RR-00557-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium Nitrate (13597-99-4)	TWA	USA	"0.2 µg/m <sup>3</sup> TWA (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	"2 µg/m <sup>3</sup> Ceiling (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium Nitrate (13597-99-4)	TWA	USA	"0.2 µg/m <sup>3</sup> TWA (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium Nitrate (13597-99-4)	TLV-TWA	USA	"0.00005 mg/m <sup>3</sup> TWA (inhalable particulate matter, as Be)" As Beryllium compounds [RR-00557-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium Nitrate (13597-99-4)	PEL-Ceiling	USA	"2 µg/m <sup>3</sup> Ceiling (as Be)" As Beryllium compounds [RR-00557-2]	U.S. - OSHA - Final PELs - Ceiling Limits
Cupric Nitrate (3251-23-8)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)" As Copper compounds [RR-00595-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cupric Nitrate (3251-23-8)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)" As Copper compounds [RR-00595-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cupric Nitrate (3251-23-8)	TLV-TWA	USA	1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

## Safety Data Sheet

Cupric Nitrate (3251-23-8)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)" As Copper compounds [RR-00595-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cupric Nitrate (3251-23-8)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)" As Copper compounds [RR-00595-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cupric Nitrate (3251-23-8)	TLV-TWA	USA	"1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)" As Copper compounds [RR-00595-8]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TWA	USA	2 ppm TWA; 5 mg/m <sup>3</sup> TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-TWA	USA	2 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TLV-STEL	USA	4 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Silver Nitrate (7761-88-8)	TLV-TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Ag)" As Silver soluble compounds [RR-00041-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Silver Nitrate (7761-88-8)	TWA	USA	"0.01 mg/m <sup>3</sup> TWA (as Ag)" As Silver soluble compounds [RR-00041-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silver Nitrate (7761-88-8)	TLV-TWA	USA	0.01 mg/m <sup>3</sup> TWA (as Ag)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Silver Nitrate (7761-88-8)	TWA	USA	0.01 mg/m <sup>3</sup> TWA (as Ag)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

### 8.2. Exposure Controls

**Engineering Controls:** Use only outdoors or in a well-ventilated area.

**Respiratory Protection:** In case of inadequate ventilation wear respiratory protection.

**Skin Protection:** Wear protective gloves and eye protection.

**Eye Protection:** Wear protective gloves and eye protection.

### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.





## Safety Data Sheet

### SECTION 9: Physical and Chemical Properties

#### 9.1. Basic Physical and Chemical Properties

**Appearance:** Data not available.

**Physical State:** Liquid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** Data not available.

**Melting/Freezing Point:** Data not available.

**Initial Boiling Point/Range:** Data not available.

**Flash Point:** Data not available.

**Evaporation Rate:** Data not available.

**Flammability:** Data not available.

**Flammability/Explosive Limits:** Data not available.

**Vapor Pressure:** Data not available.

**Vapor Density:** Data not available.

**Relative Density:** 1.08

**Solubility:** Data not available.

**Partition Coefficient:** Data not available.

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

### SECTION 10: Stability and Reactivity

#### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

#### 10.2. Possibility of Hazardous Reactions

Data not available.

#### 10.3. Conditions to Avoid and Incompatible Materials

Keep only in original container.

#### 10.4. Hazardous Decomposition Products

May emit irritating fumes when heated to decomposition.

# Safety Data Sheet

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**

Not applicable.

**Acute Toxicity - Dermal Exposure:**

Not applicable.

**Acute Toxicity - Inhalation Exposure:**

Fatal if inhaled. Do not breathe fumes, mist, vapors, or spray. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment is urgent (Wash areas of contact with water.). Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Acute Toxicity - Other Information:**

Data not available.

**Skin Corrosion and Irritation:**

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water.). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Serious Eye Damage and Irritation:**

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

**Respiratory Sensitization:**

Not applicable.

**Skin Sensitization:**

Not applicable.

**Germ Cell Mutagenicity:**

Not applicable.

**Carcinogenicity:**

Not applicable.

**Reproductive Toxicity:**

Not applicable.

**Specific Target Organ Toxicity from Single Exposure:**

Not applicable.

**Specific Target Organ Toxicity from Repeated Exposure:**

Not applicable.

# Safety Data Sheet

**Aspiration Hazard:**

Not applicable.

**Additional Toxicology Information:**

Data not available.

## SECTION 12: Ecological Information

### 12.1. Ecotoxicity

Toxic to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.  
Toxic to aquatic life with long lasting effects. Avoid release to the environment. Collect spillage. Dispose of contents in accordance with local, state, federal and international regulations.

### 12.2. Persistence and Degradability

Data not available.

### 12.3. Bioaccumulative Potential

Data not available.

### 12.4. Mobility in Soil

Data not available.

### 12.5. Other Adverse Ecological Effects

Data not available.

## SECTION 13: Disposal Considerations

### 13.1. Waste Treatment Methods

Data not available.

## SECTION 14: Transportation Information

### 14.1. Transportation by Land-Department of Transportation (DOT, United States of America)

**Sizes:** 100 mL

**UN Number:** UN3264

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid)

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



## Safety Data Sheet

### 14.2. Transportation by Air - International Air Transport Association (IATA)

**Sizes:** 100 mL

**UN Number:** UN3264

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, n.o.s. (Nitric Acid)

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



### 14.3 Transportation of Dangerous Goods (TDG, Canada)

**Sizes:** 100 mL

**UN Number:** UN3264

**Proper Shipping Name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



## SECTION 15: Regulatory Information

### 15.1. Occupational Safety and Health Administration (OSHA) Hazards

Lead Nitrate (CAS # 10099-74-8): "30 µg/m<sup>3</sup> Action Level (See 29 CFR 1910.1025, as Pb); 50 µg/m<sup>3</sup> TWA (See 29 CFR 1910.1025, as Pb)" As Lead, inorganic compounds [RR-00538-9]

Lead Nitrate (CAS # 10099-74-8): 30 µg/m<sup>3</sup> Action Level (See 29 CFR 1910.1025, as Pb); 50 µg/m<sup>3</sup> TWA (See 29 CFR 1910.1025, as Pb)

Cadmium Nitrate (CAS # 10325-94-7): "5 µg/m<sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m<sup>3</sup> Action Level (as Cd)" As Cadmium compounds [RR-00559-4]

Cadmium Nitrate (CAS # 10325-94-7): 5 µg/m<sup>3</sup> TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m<sup>3</sup> Action Level (as Cd)

### 15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Nitric Acid (CAS # 7697-37-2): 1000 lb EPCRA RQ

Nitric Acid (CAS # 7697-37-2): 1000 lb TPQ

## Safety Data Sheet

### 15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Lead Nitrate (CAS # 10099-74-8): 10 lb final RQ; 4.54 kg final RQ  
Thallium (I) Nitrate (CAS # 10102-45-1): 100 lb final RQ; 45.4 kg final RQ  
Ferric Nitrate (CAS # 10421-48-4): 1000 lb final RQ; 454 kg final RQ  
Nickel (II) Nitrate (CAS # 13138-45-9): 100 lb final RQ; 45.4 kg final RQ  
Beryllium Nitrate (CAS # 13597-99-4): 1 lb final RQ; 0.454 kg final RQ  
Cupric Nitrate (CAS # 3251-23-8): 100 lb final RQ; 45.4 kg final RQ  
Nitric Acid (CAS # 7697-37-2): 1000 lb final RQ; 454 kg final RQ  
Silver Nitrate (CAS # 7761-88-8): 1 lb final RQ; 0.454 kg final RQ  
Zinc Nitrate (CAS # 7779-88-6): 1000 lb final RQ; 454 kg final RQ

### 15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Barium Nitrate (CAS # 10022-31-8): "1.0 % de minimis concentration (includes any unique chemical substance that contains Barium as part of that chemical's infrastructure except for Barium sulfate CAS 7727-43-7, listed under Chemical Category N040)" As Barium compounds [RR-00555-0]  
Barium Nitrate (CAS # 10022-31-8): "1.0 % de minimis concentration (includes any unique chemical substance that contains Barium as part of that chemical's infrastructure except for Barium sulfate CAS 7727-43-7, listed under Chemical Category N040)" As Barium compounds [RR-00555-0]; "1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]  
Barium Nitrate (CAS # 10022-31-8): 1.0 % de minimis concentration (includes any unique chemical substance that contains Barium as part of that chemical's infrastructure except for Barium sulfate CAS 7727-43-7, listed under Chemical Category N040)  
Barium Nitrate (CAS # 10022-31-8): 1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)  
Strontium Nitrate (CAS # 10042-76-9): "1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]  
Strontium Nitrate (CAS # 10042-76-9): 1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)  
Lead Nitrate (CAS # 10099-74-8): "0.1 % Supplier notification limit (includes any unique chemical substance that contains Lead as part of that chemical's infrastructure, listed under Chemical Category N420)" As Inorganic lead compounds [RR-00538-9]; "1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]  
Lead Nitrate (CAS # 10099-74-8): "100 lb RT" As Lead compounds [RR-00630-4]  
Lead Nitrate (CAS # 10099-74-

## Safety Data Sheet

### 15.5. Massachusetts Right-to-Know Substance List

Barium Nitrate (CAS # 10022-31-8): Present  
Strontium Nitrate (CAS # 10042-76-9): Present  
Lead Nitrate (CAS # 10099-74-8): Present  
Thallium (I) Nitrate (CAS # 10102-45-1): Present  
Cobalt (II) Nitrate (CAS # 10141-05-6): Present  
Ferric Nitrate (CAS # 10421-48-4): Present  
Nickel (II) Nitrate (CAS # 13138-45-9): Present  
Beryllium Nitrate (CAS # 13597-99-4): Present  
Cupric Nitrate (CAS # 3251-23-8): Present  
Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous  
Silver Nitrate (CAS # 7761-88-8): Present  
Zinc Nitrate (CAS # 7779-88-6): Present

## Safety Data Sheet

### 15.6. Pennsylvania Right-to-Know Hazardous Substances

Barium Nitrate (CAS # 10022-31-8): "Environmental hazard" As Barium compounds [RR-00555-0]

Barium Nitrate (CAS # 10022-31-8): "Present" As Barium compounds [RR-00555-0]

Barium Nitrate (CAS # 10022-31-8): Environmental hazard

Barium Nitrate (CAS # 10022-31-8): Present

Strontium Nitrate (CAS # 10042-76-9): Present

Lead Nitrate (CAS # 10099-74-8): "Environmental hazard" As Lead compounds [RR-00630-4]

Lead Nitrate (CAS # 10099-74-8): "Present" As Lead compounds [RR-00630-4]

Lead Nitrate (CAS # 10099-74-8): Environmental hazard

Lead Nitrate (CAS # 10099-74-8): Present

Thallium (I) Nitrate (CAS # 10102-45-1): "Environmental hazard" As Thallium compounds [RR-00575-4]

Thallium (I) Nitrate (CAS # 10102-45-1): "Present" As Thallium compounds [RR-00575-4]

Thallium (I) Nitrate (CAS # 10102-45-1): Environmental hazard

Thallium (I) Nitrate (CAS # 10102-45-1): Present

Cobalt (II) Nitrate (CAS # 10141-05-6): "Environmental hazard" As Cobalt compounds [RR-00107-0]

Cobalt (II) Nitrate (CAS # 10141-05-6): "Present" As Cobalt compounds [RR-00107-0]

Cobalt (II) Nitrate (CAS # 10141-05-6): Environmental hazard

Cobalt (II) Nitrate (CAS # 10141-05-6): Present

Cadmium Nitrate (CAS # 10325-94-7): "Environmental hazard" As Cadmium compounds [RR-00559-4]

Cadmium Nitrate (CAS # 10325-94-7): "Present" As Cadmium compounds [RR-00559-4]

Cadmium Nitrate (CAS # 10325-94-7): Environmental hazard

Cadmium Nitrate (CAS # 10325-94-7): Present

Manganese Nitrate (CAS # 10377-66-9): "Environmental hazard" As Manganese compounds [RR-00602-0]

Manganese Nitrate (CAS # 10377-66-9): "Present" As Manganese compounds [RR-00602-0]

Manganese Nitrate (CAS # 10377-66-9): Environmental hazard

Manganese Nitrate (CAS # 10377-66-9): Present

Ferric Nitrate (CAS # 10421-48-4): "Environmental hazard" As Iron salts [RR-04647-9]

Ferric Nitrate (CAS # 10421-48-4): "Present" As Iron salts [RR-04647-9]

Ferric Nitrate (CAS # 10421-48-4): Environmental hazard

Ferric Nitrate (CAS # 10421-48-4): Present

Nickel (II) Nitrate (CAS # 131

## Safety Data Sheet

### 15.7. New Jersey Worker and Community Right-to-Know Components

Barium Nitrate (CAS # 10022-31-8): "SN 2146 500 lb TPQ (except Barium sulfate CAS number 7727-43-7, Category Code N040. Includes any unique chemical substance that contains the named metal as part of that chemical structure)" As Barium compounds [RR-00555-0]

Barium Nitrate (CAS # 10022-31-8): "SN 2146 500 lb TPQ (except Barium sulfate CAS number 7727-43-7, Category Code N040. Includes any unique chemical substance that contains the named metal as part of that chemical structure)" As Barium compounds [RR-00555-0];

"SN 3722 500 lb TPQ (water dissociable, Category Code N511)" As Nitrate compounds [RR-01770-9]

Barium Nitrate (CAS # 10022-31-8): "sn 2146" As Barium compounds [RR-00555-0]

Barium Nitrate (CAS # 10022-31-8): "SN 3722 500 lb TPQ (water dissociable, Category Code N511)" As Nitrate compounds [RR-01770-9]

Barium Nitrate (CAS # 10022-31-8): "sn 3722" As Nitrate compounds [RR-01770-9]

Barium Nitrate (CAS # 10022-31-8): sn 0186

Barium Nitrate (CAS # 10022-31-8): sn 2146

Barium Nitrate (CAS # 10022-31-8): SN 2146 500 lb TPQ (except Barium sulfate CAS number 7727-43-7, Category Code N040. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Barium Nitrate (CAS # 10022-31-8): sn 3722

Barium Nitrate (CAS # 10022-31-8): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): "SN 3722 500 lb TPQ (water dissociable, Category Code N511)" As Nitrate compounds [RR-01770-9]

Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): "sn 3722" As Nitrate compounds [RR-01770-9]

Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): sn 3722

Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Strontium Nitrate (CAS # 10042-76-9): "SN 3722 500 lb TPQ (water dissociable, Category Code N511)" As Nitrate compounds [RR-01770-9]

Strontium Nitrate (CAS # 10042-76-9): "sn 3722" As Nitrate compounds [RR-01770-9]

Strontium

### 15.8. California Proposition 65

Lead Nitrate (CAS # 10099-74-8): "carcinogen, 10/1/1992" As Lead compounds [RR-00630-4]

Lead Nitrate (CAS # 10099-74-8): carcinogen, 10/1/1992

Cadmium Nitrate (CAS # 10325-94-7): "carcinogen, 10/1/1987" As Cadmium compounds [RR-00559-4]

Cadmium Nitrate (CAS # 10325-94-7): carcinogen, 10/1/1987

Nickel (II) Nitrate (CAS # 13138-45-9): "carcinogen, 5/7/2004" As Nickel compounds [RR-00800-4]

Nickel (II) Nitrate (CAS # 13138-45-9): "developmental toxicity, 10/26/2018" As Nickel, soluble compounds [RR-00038-4]

Nickel (II) Nitrate (CAS # 13138-45-9): "male reproductive toxicity, 10/26/18" As Nickel, soluble compounds [RR-00038-4]

Nickel (II) Nitrate (CAS # 13138-45-9): carcinogen, 5/7/2004

Nickel (II) Nitrate (CAS # 13138-45-9): developmental toxicity, 10/26/2018

Nickel (II) Nitrate (CAS # 13138-45-9): male reproductive toxicity, 10/26/18

Beryllium Nitrate (CAS # 13597-99-4): "carcinogen, 10/1/1987" As Beryllium compounds [RR-00557-2]

Beryllium Nitrate (CAS # 13597-99-4): carcinogen, 10/1/1987



## Safety Data Sheet

### 15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Barium Nitrate (CAS # 10022-31-8): Present (DSL)  
Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): Present (DSL)  
Strontium Nitrate (CAS # 10042-76-9): Present (DSL)  
Boric Acid (CAS # 10043-35-3): Present (DSL)  
Lead Nitrate (CAS # 10099-74-8): Present (DSL)  
Thallium (I) Nitrate (CAS # 10102-45-1): Present (NDSL)  
Cobalt (II) Nitrate (CAS # 10141-05-6): Present (DSL)  
Cadmium Nitrate (CAS # 10325-94-7): Present (DSL)  
Manganese Nitrate (CAS # 10377-66-9): Present (DSL)  
Ferric Nitrate (CAS # 10421-48-4): Present (DSL)  
Nickel (II) Nitrate (CAS # 13138-45-9): Present (DSL)  
Indium (III) Nitrate Hydrate (CAS # 13465-14-0): Present (NDSL)  
Aluminum Nitrate (CAS # 13473-90-0): Present (DSL)  
Chromium (III) Nitrate (CAS # 13548-38-4): Present (DSL)  
Beryllium Nitrate (CAS # 13597-99-4): Present (NDSL)  
Cupric Nitrate (CAS # 3251-23-8): Present (DSL)  
Gallium Nitrate Hydrate (CAS # 69365-72-6): Present (NDSL)  
Nitric Acid (CAS # 7697-37-2): Present (DSL)  
Water (CAS # 7732-18-5): Present (DSL)  
Silver Nitrate (CAS # 7761-88-8): Present (DSL)  
Zinc Nitrate (CAS # 7779-88-6): Present (DSL)

### 15.10. United States of America Toxic Substances Control Act (TSCA) List

All components of this solution are listed as active on the TSCA Inventory or are mixtures (hydrates) of active items listed on the TSCA Inventory.

## Safety Data Sheet

Barium Nitrate (CAS # 10022-31-8): Present (ACTIVE)  
Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): Present (ACTIVE)  
Strontium Nitrate (CAS # 10042-76-9): Present (ACTIVE)  
Boric Acid (CAS # 10043-35-3): Present (ACTIVE)  
Lead Nitrate (CAS # 10099-74-8): Present (ACTIVE)  
Thallium (I) Nitrate (CAS # 10102-45-1): Present (ACTIVE)  
Cobalt (II) Nitrate (CAS # 10141-05-6): Present (ACTIVE)  
Cadmium Nitrate (CAS # 10325-94-7): Present (ACTIVE)  
Manganese Nitrate (CAS # 10377-66-9): Present (ACTIVE)  
Ferric Nitrate (CAS # 10421-48-4): Present (ACTIVE)  
Nickel (II) Nitrate (CAS # 13138-45-9): Present (ACTIVE)  
Indium (III) Nitrate Hydrate (CAS # 13465-14-0): Present (ACTIVE)  
Aluminum Nitrate (CAS # 13473-90-0): Present (ACTIVE)  
Chromium (III) Nitrate (CAS # 13548-38-4): Present (ACTIVE)  
Beryllium Nitrate (CAS # 13597-99-4): Present (ACTIVE)  
Cupric Nitrate (CAS # 3251-23-8): Present (ACTIVE)  
Gallium Nitrate Hydrate (CAS # 69365-72-6): Present (ACTIVE)  
Nitric Acid (CAS # 7697-37-2): Present (ACTIVE)  
Water (CAS # 7732-18-5): Present (ACTIVE)  
Silver Nitrate (CAS # 7761-88-8): Present (ACTIVE)  
Zinc Nitrate (CAS # 7779-88-6): Present (ACTIVE)

## Safety Data Sheet

### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Barium Nitrate (CAS # 10022-31-8): 233-020-5  
Bismuth (III) Nitrate Pentahydrate (CAS # 10035-06-0): 233-791-8  
Strontium Nitrate (CAS # 10042-76-9): 233-131-9  
Boric Acid (CAS # 10043-35-3): 233-139-2  
Boric Acid (CAS # 10043-35-3): 234-343-4  
Lead Nitrate (CAS # 10099-74-8): 233-245-9  
Thallium (I) Nitrate (CAS # 10102-45-1): 233-273-1  
Cobalt (II) Nitrate (CAS # 10141-05-6): 233-402-1  
Cadmium Nitrate (CAS # 10325-94-7): 233-710-6  
Manganese Nitrate (CAS # 10377-66-9): 233-828-8  
Ferric Nitrate (CAS # 10421-48-4): 233-899-5  
Nickel (II) Nitrate (CAS # 13138-45-9): 236-068-5  
Nickel (II) Nitrate (CAS # 13138-45-9): 238-076-4  
Indium (III) Nitrate Hydrate (CAS # 13465-14-0): 237-393-5  
Aluminum Nitrate (CAS # 13473-90-0): 236-751-8  
Chromium (III) Nitrate (CAS # 13548-38-4): 236-921-1  
Beryllium Nitrate (CAS # 13597-99-4): 237-062-5  
Cupric Nitrate (CAS # 3251-23-8): 221-838-5  
Gallium Nitrate Hydrate (CAS # 69365-72-6): 236-815-5  
Nitric Acid (CAS # 7697-37-2): 231-714-2  
Water (CAS # 7732-18-5): 231-791-2  
Silver Nitrate (CAS # 7761-88-8): 231-853-9  
Zinc Nitrate (CAS # 7779-88-6): 231-943-8

# Safety Data Sheet

## SECTION 16: Other Information

### 16.1. Full Text of Hazard Statements and Precautionary Statements

May be corrosive to metals. Causes severe skin burns and eye damage. Fatal if inhaled. Toxic to aquatic life with long lasting effects.

Keep only in original container. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Specific treatment is urgent (Wash areas of contact with water.). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Collect spillage.

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Dispose of contents in accordance with local, state, federal and international regulations.

### 16.2. Miscellaneous Hazard Classes

**Canadian Carcinogenicity Hazard Class:** Not Applicable.

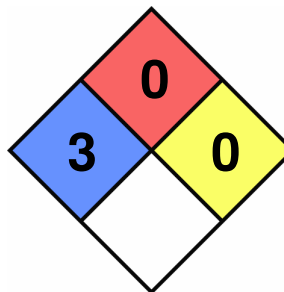
**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.

**Biohazardous Infectious Materials Hazard Class:** Not Applicable.

### 16.3. National Fire Protection Association (NFPA) Rating

**Health:** 3  
**Flammability:** 0  
**Reactivity:** 0  
**Special Hazard:**



### 16.4. Document Revision

**Last Revision Date:** 2023-10-11

## DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.