



Safety Data Sheet

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: VeriSpec[®] Elemental Impurities Standard (USP 232)

2500 ppm Cu, Mn; 250 ppm Cr, Mo, Ni, V; 15 ppm As, Hg; 10 ppm Pb, 5 ppm Cd, Manufactured and Tested

Product Number: RV010848

Other Identifying Product Numbers: RV010848-100N

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 hr)

CHEMTREC (USA) 800-424-9300

CHEMTREC (International) 1+ 703-527-3887

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

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

Hazard Class	Category	Hazard Statement	Precautionary Statements
Skin Corrosion / Irritation	Category 1A	H314	P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501
Skin Sensitizer	Category 1	H317	P261, P272, P280, P302+P352, P332+P313, P321, P363, P501
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	H401	P273, P501

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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.
H317	May cause an allergic skin reaction.
H401	Toxic to aquatic life.

Precautionary Statements:

Precautionary Number	Precautionary Statement
P234	Keep only in original container.
P260	Do not breathe fumes, mist, vapors, or spray.
P261	Avoid breathing fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
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.
P321	Specific treatment (Wash areas of contact with water immediately).
P332+P313	If skin irritation occurs: Get medical attention.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
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.



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2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Nitric Acid	HNO_3	63.01 g/mol	7697-37-2	5.00%
Manganese Nitrate	$\text{Mn}(\text{NO}_3)_2$	178.94 g/mol	10377-66-9	0.81%
Cupric Nitrate	$\text{Cu}(\text{NO}_3)_2 \cdot x\text{H}_2\text{O}$	251.10 g/mol	3251-23-8	0.74%
Chromium (III) Nitrate	$\text{Cr}(\text{NO}_3)_3$	238.01 g/mol	13548-38-4	0.11%
Molybdenum Pentafluoride	MoF_5	Data not available.	13819-84-6	0.05%
Nickel (II) Nitrate	$\text{Ni}(\text{NO}_3)_2$	182.70 g/mol	13138-45-9	0.00%

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.

4.2. Most Important Symptoms and Effects, Acute and Delayed

May cause mild irritation to areas of contact.

4.3. Medical Attention or Special Treatment Needed

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

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Not considered to be a fire or explosion hazard.



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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.

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.

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SECTION 8: Exposure Controls / Personal Protection

8.1. Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Chromium (III) Nitrate (13548-38-4)	TWA	USA	0.5 mg/m ³ TWA (as Cr)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Chromium (III) Nitrate (13548-38-4)	TLV-TWA	USA	0.5 mg/m ³ TWA (as Cr)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cupric Nitrate (3251-23-8)	TLV-TWA	USA	1 mg/m ³ TWA (dust and mist, as Cu)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	TLV-TWA	USA	0.02 mg/m ³ TWA (respirable fraction, as Mn) 0.1 mg/m ³ TWA (inhalable fraction, as Mn)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese Nitrate (10377-66-9)	PEL-Ceiling	USA	5 mg/m ³ Ceiling (as Mn)	U.S. - OSHA - Final PELs - Ceiling Limits
Nickel (II) Nitrate (13138-45-9)	TWA	USA	1 mg/m ³ TWA (as Ni)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (II) Nitrate (13138-45-9)	TLV-TWA	USA	0.1 mg/m ³ TWA (inhalable fraction, as Ni)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TWA	USA	2 ppm TWA 5 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-STEL	USA	4 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TLV-TWA	USA	2 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

8.2. Exposure Controls

Engineering Controls: No specific controls are needed. Normal room ventilation is adequate.

Respiratory Protection: No specific controls are needed. Normal room ventilation is adequate

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.



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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: 1.07

Solubility: Data not available.

Partition Coefficient (n-Octanol/Water): 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.



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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:

Not applicable.

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 immediately). 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:

Not applicable.

Respiratory Sensitization:

Not applicable.

Skin Sensitization:

May cause an allergic skin reaction. Avoid breathing fumes, mist, vapors, or spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. Specific treatment (Wash areas of contact with water immediately). Wash contaminated clothing before reuse. Dispose of contents in accordance with local, state, federal and international regulations.

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.



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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. Avoid release to the environment. 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 Placard Labels:





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Sizes:

UN Number:

Proper Shipping Name:

Hazard Class:

Packing Group:

Hazard Placard Labels:

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 Placard Labels:



SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

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

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

Nickel (II) Nitrate (CAS # 13138-45-9): 100 lb final RQ; 45.4 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



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

Manganese Nitrate (CAS # 10377-66-9): 1.0 % de minimis concentration (listed under Chemical Category N450)

Nickel (II) Nitrate (CAS # 13138-45-9): 0.1 % de minimis concentration (listed under Chemical Category N495)

Chromium (III) Nitrate (CAS # 13548-38-4): 1.0 % de minimis concentration (except for Chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the Chromite ore processing residue (COPR), Chemical Category N090)

Cupric Nitrate (CAS # 3251-23-8): 1.0 % de minimis concentration (This category does not include CAS numbers 147-14-8, 1328-53-6, or 14302-13-7, or copper phthalocyanine compounds that are substituted with only hydrogen and/or chlorine and/or bromine., listed under Chemical Category N100)

Nitric Acid (CAS # 7697-37-2): 1.0 % de minimis concentration

15.5. Massachusetts Right-to-Know Substance List

Nickel (II) Nitrate (CAS # 13138-45-9): Present

Cupric Nitrate (CAS # 3251-23-8): Present

Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous

15.6. Pennsylvania Right-to-Know Hazardous Substances

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

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

Nickel (II) Nitrate (CAS # 13138-45-9): Environmental hazard

Nickel (II) Nitrate (CAS # 13138-45-9): Present

Chromium (III) Nitrate (CAS # 13548-38-4): Environmental hazard

Chromium (III) Nitrate (CAS # 13548-38-4): Present

Cupric Nitrate (CAS # 3251-23-8): Environmental hazard

Cupric Nitrate (CAS # 3251-23-8): Present

Nitric Acid (CAS # 7697-37-2): Environmental hazard

Nitric Acid (CAS # 7697-37-2): Present



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

Manganese Nitrate (CAS # 10377-66-9): sn 2324

Manganese Nitrate (CAS # 10377-66-9): SN 2324 500 lb TPQ (Category Code N450. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Manganese Nitrate (CAS # 10377-66-9): sn 3722

Manganese Nitrate (CAS # 10377-66-9): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Nickel (II) Nitrate (CAS # 13138-45-9): carcinogen

Nickel (II) Nitrate (CAS # 13138-45-9): sn 1347

Nickel (II) Nitrate (CAS # 13138-45-9): sn 2366

Nickel (II) Nitrate (CAS # 13138-45-9): SN 2366 500 lb TPQ (Category Code N495. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Nickel (II) Nitrate (CAS # 13138-45-9): sn 3722

Nickel (II) Nitrate (CAS # 13138-45-9): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Nickel (II) Nitrate (CAS # 13138-45-9): sn 4059

Chromium (III) Nitrate (CAS # 13548-38-4): sn 0435

Chromium (III) Nitrate (CAS # 13548-38-4): sn 2245

Chromium (III) Nitrate (CAS # 13548-38-4): SN 2245 500 lb TPQ (Category Code N090)

Chromium (III) Nitrate (CAS # 13548-38-4): sn 2870

Chromium (III) Nitrate (CAS # 13548-38-4): sn 3722

Chromium (III) Nitrate (CAS # 13548-38-4): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Cupric Nitrate (CAS # 3251-23-8): sn 0547

Cupric Nitrate (CAS # 3251-23-8): sn 2215

Cupric Nitrate (CAS # 3251-23-8): SN 2215 500 lb TPQ (except C.I. Pigment Blue 15, C.I. Pigment Green 7, and C.I. Pigment Green 36, Category Code N100)

Cupric Nitrate (CAS # 3251-23-8): sn 3722

Cupric Nitrate (CAS # 3251-23-8): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Nitric Acid (CAS # 7697-37-2): corrosive; reactive - second degree

Nitric Acid (CAS # 7697-37-2): sn 1356

Nitric Acid (CAS # 7697-37-2): SN 1356 500 lb TPQ

Nitric Acid (CAS # 7697-37-2): sn 3722

Nitric Acid (CAS # 7697-37-2): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

15.8. California Proposition 65

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

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

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

Nickel (II) Nitrate (CAS # 13138-45-9): Present (DSL)

Chromium (III) Nitrate (CAS # 13548-38-4): Present (DSL)

Cupric Nitrate (CAS # 3251-23-8): Present (DSL)

Nitric Acid (CAS # 7697-37-2): Present (DSL)



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

Manganese Nitrate (CAS # 10377-66-9): Present
Nickel (II) Nitrate (CAS # 13138-45-9): Present
Chromium (III) Nitrate (CAS # 13548-38-4): Present
Cupric Nitrate (CAS # 3251-23-8): Present
Nitric Acid (CAS # 7697-37-2): Present

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

Not listed.

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. May cause an allergic skin reaction. Toxic to aquatic life.

Keep only in original container. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves and eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. 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 (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

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.

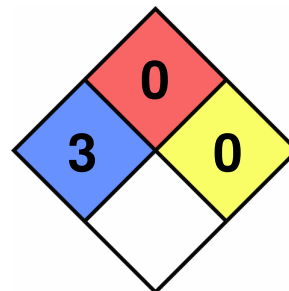
Health Hazards Not Otherwise Classified (HHNOC): Not Applicable.
Not Applicable.



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16.3. National Fire Protection Association (NFPA) Rating

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





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16.4. Document Revision

Last Revision Date: 9/15/2016

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.