



Safety Data Sheet

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: VeriSpec® Multi-Element Standard 11

10 ppb: Ba, Ce, Ge, Mg, Sc, Ti, Cd, Cu, Pb, Rh, Tb, Manufactured and Tested in an ISO 17025/Guide 3

Product Number: RV010734

Other Identifying Product Numbers: RV010734-100N, RV010734-500N

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 2	H315	P264, P280, P302+P352, P321, P332+P313, P362
Eye Damage / Irritation	Category 2A	H319	P264, P280, P305+P351+P338, P337+P313

2.2. GHS Label Elements

Pictograms:



Signal Word: **Warning**



Safety Data Sheet

Hazard Statements:

Hazard Number	Hazard Statement
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Precautionary Statements:

Precautionary Number	Precautionary Statement
P264	Wash arms, hands and face thoroughly after handling.
P280	Wear protective gloves and eye protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (Wash areas of contact with water immediately).
P332+P313	If skin irritation occurs: Get medical attention.
P337+P313	If eye irritation persists: Get medical attention.
P362	Take off contaminated clothing and wash it before reuse.

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.

Safety Data Sheet

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	1.00%
Terbium(III) Nitrate Pentahydrate	Tb(NO ₃) ₃ ·5H ₂ O	435.02 g/mol	57584-27-7	0.00%
Cupric Nitrate	Cu(NO ₃) ₂ ·xH ₂ O	251.10 g/mol	3251-23-8	0.00%
Ammonium Thiocyanate	NH ₄ SCN	76.12 g/mol	1762-95-4	0.00%
Germanium Oxide	GeO ₂	104.63 g/mol	1310-53-8	0.00%
Magnesium Nitrate	Mg(NO ₃) ₂	148.31 g/mol	10377-60-3	0.00%
Cadmium Nitrate	CdN ₂ O ₆	236.42 g/mol	10325-94-7	0.00%
Cerium (III) Nitrate Hexahydrate	Ce(NO ₃) ₃ ·6H ₂ O	326.13 g/mol	10294-41-4	0.00%
Thallium (I) Nitrate	TlNO ₃	266.38 g/mol	10102-45-1	0.00%
Lead Nitrate	Pb(NO ₃) ₂	331.20 g/mol	10099-74-8	0.00%
Rhodium (III) Chloride	RhCl ₃	209.26 g/mol	10049-07-7	0.00%
Barium Nitrate	Ba(NO ₃) ₂	261.33 g/mol	10022-31-8	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: Not expected to require first aid. If necessary, remove to fresh air.

Skin Contact: IF ON SKIN: Wash with plenty of soap and water.

Ingestion: No action required to be taken. If necessary, dilute with water.

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

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.

5.2. Specific Hazards Arising from the Substance or Mixture

Not considered to be a fire or explosion hazard.



Safety Data Sheet

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

Protect from freezing and physical damage.

Safety Data Sheet

SECTION 8: Exposure Controls / Personal Protection

8.1. Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Ammonium Thiocyanate (1762-95-4)	TWA	USA	5 mg/m ³ TWA (as CN)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Barium Nitrate (10022-31-8)	TWA	USA	0.5 mg/m ³ TWA (as Ba)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Barium Nitrate (10022-31-8)	TLV-TWA	USA	0.5 mg/m ³ TWA (as Ba)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	TLV-TWA	USA	0.01 mg/m ³ TWA (as Cd) 0.002 mg/m ³ TWA (respirable fraction, as Cd)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium Nitrate (10325-94-7)	PEL	USA	5 µg/m ³ TWA (Do not eat, drink or chew tobacco or gum or apply cosmetics in regulated areas. Carcinogen - dust can cause lung and kidney disease. See 29 CFR 1910.1027, as Cd) 2.5 µg/m ³ Action Level (as Cd)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
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)
Lead Nitrate (10099-74-8)	TWA	USA	50 µg/m ³ TWA (as Pb)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Lead Nitrate (10099-74-8)	TLV-TWA	USA	0.05 mg/m ³ TWA (as Pb)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead Nitrate (10099-74-8)	PEL	USA	30 µg/m ³ Action Level (Poison, See 29 CFR 1910.1025, as Pb) 50 µg/m ³ TWA (as Pb)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
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)
Rhodium (III) Chloride (10049-07-7)	TWA	USA	0.1 mg/m ³ TWA (as Rh)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Rhodium (III) Chloride (10049-07-7)	TLV-TWA	USA	1 mg/m ³ TWA (as Rh)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Thallium (I) Nitrate (10102-45-1)	TWA	USA	0.1 mg/m ³ TWA (as Tl)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)



Safety Data Sheet

Thallium (I) Nitrate (10102-45-1)	TLV-TWA	USA	0.02 mg/m ³ TWA (inhalable fraction, as ACGIH - Threshold Limit Values - Time TI)	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.

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.



Safety Data Sheet

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

Protect from freezing and physical damage.

10.4. Hazardous Decomposition Products

May emit irritating fumes when heated to decomposition.

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 skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

Serious Eye Damage and Irritation:

Causes serious eye irritation. Wash arms, hands and face thoroughly after handling. 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. If eye irritation persists: Get medical attention.

Respiratory Sensitization:

Not applicable.

Skin Sensitization:

Not applicable.

Germ Cell Mutagenicity:

Not applicable.



Safety Data Sheet

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.

Aspiration Hazard:

Not applicable.

Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Not applicable.

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.



Safety Data Sheet

SECTION 14: Transportation Information

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

Not regulated according to DOT Regulations.

Not regulated according to IATA Regulations.

SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Lead Nitrate (CAS # 10099-74-8): 30 µg/m³ Action Level (See 29 CFR 1910.1025, as Pb); 50 µg/m³ TWA (See 29 CFR 1910.1025, as Pb)

Cadmium Nitrate (CAS # 10325-94-7): 5 µg/m³ TWA (See 29 CFR 1910.1027, as Cd); 2.5 µg/m³ 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

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

Ammonium Thiocyanate (CAS # 1762-95-4): 5000 lb final RQ; 2270 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



Safety Data Sheet

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

Barium Nitrate (CAS # 10022-31-8): 1.0 % de minimis concentration (does not include Barium sulfate CAS 7727-43-7, Chemical Category N040)
Barium Nitrate (CAS # 10022-31-8): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)
Lead Nitrate (CAS # 10099-74-8): 0.1 % Supplier notification limit (listed under Chemical Category N420)
Lead Nitrate (CAS # 10099-74-8): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)
Lead Nitrate (CAS # 10099-74-8): 100 lb RT
Thallium (I) Nitrate (CAS # 10102-45-1): 1.0 % de minimis concentration (listed under Chemical Category N760)
Cerium (III) Nitrate Hexahydrate (CAS # 10294-41-4): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)
Cadmium Nitrate (CAS # 10325-94-7): 0.1 % de minimis concentration (listed under Chemical Category N078)
Cadmium Nitrate (CAS # 10325-94-7): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)
Magnesium Nitrate (CAS # 10377-60-3): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)
Ammonium Thiocyanate (CAS # 1762-95-4): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)
Ammonium Thiocyanate (CAS # 1762-95-4): 1.0 % de minimis concentration ($X+CN^-$ where $X = H^+$ or any other group where a formal dissociation can be made. For example KCN or $Ca(CN)_2$. Chemical Category N106)
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

Barium Nitrate (CAS # 10022-31-8): Present
Rhodium (III) Chloride (CAS # 10049-07-7): Present
Lead Nitrate (CAS # 10099-74-8): Present
Thallium (I) Nitrate (CAS # 10102-45-1): Present
Magnesium Nitrate (CAS # 10377-60-3): Present
Ammonium Thiocyanate (CAS # 1762-95-4): Present
Cupric Nitrate (CAS # 3251-23-8): Present
Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous



Safety Data Sheet

15.6. Pennsylvania Right-to-Know Hazardous Substances

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

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

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

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

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

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

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

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

Magnesium Nitrate (CAS # 10377-60-3): Present

Ammonium Thiocyanate (CAS # 1762-95-4): Environmental hazard

Ammonium Thiocyanate (CAS # 1762-95-4): 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



Safety Data Sheet

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

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, Category Code N040.)

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

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

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

Lead Nitrate (CAS # 10099-74-8): carcinogen; teratogen

Lead Nitrate (CAS # 10099-74-8): sn 1108

Lead Nitrate (CAS # 10099-74-8): sn 2266

Lead Nitrate (CAS # 10099-74-8): SN 2266 500 lb TPQ (Category Code N420. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Lead Nitrate (CAS # 10099-74-8): sn 3722

Lead Nitrate (CAS # 10099-74-8): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Thallium (I) Nitrate (CAS # 10102-45-1): sn 1841

Thallium (I) Nitrate (CAS # 10102-45-1): sn 2809

Thallium (I) Nitrate (CAS # 10102-45-1): SN 2809 500 lb TPQ (Category Code N760. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Thallium (I) Nitrate (CAS # 10102-45-1): sn 3722

Thallium (I) Nitrate (CAS # 10102-45-1): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Cerium (III) Nitrate Hexahydrate (CAS # 10294-41-4): sn 3722

Cerium (III) Nitrate Hexahydrate (CAS # 10294-41-4): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

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

Cadmium Nitrate (CAS # 10325-94-7): sn 2199

Cadmium Nitrate (CAS # 10325-94-7): SN 2199 500 lb TPQ (Category Code N078)

Cadmium Nitrate (CAS # 10325-94-7): sn 3722

Cadmium Nitrate (CAS # 10325-94-7): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Cadmium Nitrate (CAS # 10325-94-7): sn 4088

Magnesium Nitrate (CAS # 10377-60-3): sn 1143

Magnesium Nitrate (CAS # 10377-60-3): sn 3722

Magnesium Nitrate (CAS # 10377-60-3): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Ammonium Thiocyanate (CAS # 1762-95-4):

15.8. California Proposition 65

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

Cadmium Nitrate (CAS # 10325-94-7): 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)
Rhodium (III) Chloride (CAS # 10049-07-7): Present (DSL)
Lead Nitrate (CAS # 10099-74-8): Present (DSL)
Thallium (I) Nitrate (CAS # 10102-45-1): Present (NDSL)
Cerium (III) Nitrate Hexahydrate (CAS # 10294-41-4): Present (DSL)
Cadmium Nitrate (CAS # 10325-94-7): Present (DSL)
Magnesium Nitrate (CAS # 10377-60-3): Present (DSL)
Germanium Oxide (CAS # 1310-53-8): Present (CEPA, subsection 81(3) applies) (DSL)
Ammonium Thiocyanate (CAS # 1762-95-4): Present (DSL)
Cupric Nitrate (CAS # 3251-23-8): Present (DSL)
Terbium(III) Nitrate Pentahydrate (CAS # 57584-27-7): Present (NDSL)
Nitric Acid (CAS # 7697-37-2): Present (DSL)

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

Barium Nitrate (CAS # 10022-31-8): Present
Rhodium (III) Chloride (CAS # 10049-07-7): Present
Lead Nitrate (CAS # 10099-74-8): Present
Thallium (I) Nitrate (CAS # 10102-45-1): Present
Cerium (III) Nitrate Hexahydrate (CAS # 10294-41-4): Present
Cadmium Nitrate (CAS # 10325-94-7): Present
Magnesium Nitrate (CAS # 10377-60-3): Present
Germanium Oxide (CAS # 1310-53-8): Present
Ammonium Thiocyanate (CAS # 1762-95-4): Present
Cupric Nitrate (CAS # 3251-23-8): Present
Terbium(III) Nitrate Pentahydrate (CAS # 57584-27-7): 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

Causes skin irritation. Causes serious eye irritation.

Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection.

IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Specific treatment (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing and wash it before reuse.



Safety Data Sheet

16.2. Miscellaneous Hazard Classes

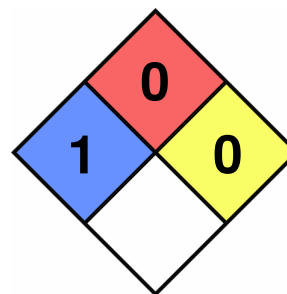
Canadian Carcinogenicity Hazard Class: Not Applicable.

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

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

16.3. National Fire Protection Association (NFPA) Rating

Health: 1
Flammability: 0
Reactivity: 0
Special Hazard:





Safety Data Sheet

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.