

Safety Data Sheet

Classified according to WHMIS 2015

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Varian Tuning Solution

Product Number: SVTUNSOL

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

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

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

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 Statement	Precautionary Statements
Acute Toxicity - Inhalation	Category 2	H330	P260, P271, P285, P304+P340, P310, P320, P403+P233, P405, P501
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
Eye Damage / Irritation	Category 1	H318	P280, P305+P351+P338, P310
Specific Target Organs/Systemic Toxicity Following Single Exposure	Category 1	H370	P260, P264, P270, P307+P311, P321, P405, P501
Specific Target Organs/Systemic Toxicity Following Repeated Exposure	Category 1	H372	P260, P264, P270, P314, P501
Corrosive to Metals	Category 1	H290	P234, P390, P406

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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.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.

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Precautionary Statements:

Precautionary Number:	Precautionary Number:
P234	Keep only in original container.
P260	Do not breathe fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
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.
P307+P311	IF exposed: Call a POISON CENTER or physician.
P310	Immediately call a POISON CENTER or physician.
P314	Get medical attention if you feel unwell.
P320	Specific treatment is urgent (Wash areas of contact with water immediately).
P321	Specific treatment (Wash areas of contact with water immediately).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
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.

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SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H ₂ O	18.01 g/mol	7732-18-5	94.96%
Nitric Acid	HNO ₃	63.01 g/mol	7697-37-2	4.75%
Potassium Carbonate	K ₂ CO ₃	138.20 g/mol	584-08-7	0.09%
Aluminum Nitrate Nonahydrate	Al(NO ₃) ₃ ·9H ₂ O	375.13 g/mol	7784-27-2	0.07%
Chromium Nitrate Nonahydrate	Cr(NO ₃) ₃ ·9H ₂ O	400.15 g/mol	7789-02-8	0.04%
Manganous Nitrate Tetrahydrate	Mn(NO ₃) ₂ ·4H ₂ O	251.01 g/mol	15710-66-4	0.02%
Strontium Nitrate	Sr(NO ₃) ₂	211.62 g/mol	10042-76-9	0.01%
Ammonium Molybdate	(NH ₄) ₂ MoO ₄	196.03 g/mol	13106-76-8	0.01%
Barium Nitrate	Ba(NO ₃) ₂	261.33 g/mol	10022-31-8	0.01%
Selenium Dioxide	SeO ₂	110.95 g/mol	7446-08-4	0.01%
Zinc	Zn	65.38 g/mol	7440-66-6	0.00%
Copper	Cu	63.54 g/mol	7440-50-8	0.00%
Cobalt	Co	58.93 g/mol	7440-48-4	0.00%
Cadmium	Cd	112.41 g/mol	7440-43-9	0.00%
Arsenic	As	74.92 g/mol	7440-38-2	0.00%
Nickel	Ni	58.69 g/mol	7440-02-0	0.00%
Lead	Pb	207.2 g/mol	7439-92-1	0.00%
Ammonium Hydroxide	NH ₄ OH	35.04 g/mol	1336-21-6	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. May cause irritation, redness, pain, and tearing.

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. May cause irritation, redness and pain. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.

Ingestion: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Corrosive Liquid. May be fatal if swallowed. Contains low levels of known and suspected carcinogens. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor. If swallowed, do not induce vomiting. Dilute with water and call a physician. Wash areas of contact with plenty of water. Potential symptoms of overexposure are irritation of the eyes, mucous membranes and skin, dental erosion, bronchitis, pneumonitis, delayed pulmonary edema. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause irritation, redness and pain. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.

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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 immediately). Specific treatment (Wash areas of contact with water immediately).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Use water or water spray.

5.2. Specific Hazards Arising from the Substance or Mixture

Not combustible, but substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals release flammable hydrogen gas.

5.3. Special Protective Equipment for Firefighters

Use protective clothing and 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

Do not flush to sewer. Absorb with suitable material. Containerize for disposal with a hazardous waste disposal facility. 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. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes skin. Protect from freezing and physical damage.

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SECTION 8: Exposure Controls / Personal Protection

Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Ammonium Molybdate (13106-76-8)	TWA	USA	5 mg/m ³ TWA (as Mo)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Molybdate (13106-76-8)	TLV-TWA	USA	0.5 mg/m ³ TWA (respirable fraction, as Mo)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Arsenic (7440-38-2)	TWA	USA	10 µg/m ³ TWA (as As)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Arsenic (7440-38-2)	TLV-TWA	USA	0.01 mg/m ³ TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Arsenic (7440-38-2)	TLV-TWA	USA	0.01 mg/m ³ TWA (as As)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Arsenic (7440-38-2)	PEL	USA	10 µg/m ³ TWA (Cancer hazard, See 29 CFR 1910.1018, except Arsine, as As) 5 µg/m ³ Action Level (as As)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
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 (7440-43-9)	TWA	USA	0.1 mg/m ³ TWA (fume, applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect) 0.2 mg/m ³ TWA (dust, applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect) 5 µg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Cadmium (7440-43-9)	TLV-TWA	USA	0.01 mg/m ³ TWA 0.002 mg/m ³ TWA (respirable fraction)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cadmium (7440-43-9)	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)

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Cadmium (7440-43-9)	PEL-Ceiling	USA	0.3 mg/m ³ Ceiling (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect, fume) 0.6 mg/m ³ Ceiling (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect, dust)	U.S. - OSHA - Final PELs - Ceiling Limits
Cadmium (7440-43-9)	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
Cadmium (7440-43-9)	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) 2.5 µg/m ³ Action Level	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Chromium Nitrate Nonahydrate (7789-02-8)	TWA	USA	0.5 mg/m ³ TWA (as Cr)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Chromium Nitrate Nonahydrate (7789-02-8)	TLV-TWA	USA	0.5 mg/m ³ TWA (as Cr)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (7440-48-4)	TWA	USA	0.1 mg/m ³ TWA (dust and fume)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Cobalt (7440-48-4)	TLV-TWA	USA	0.02 mg/m ³ TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Cobalt (7440-48-4)	TLV-TWA	USA	0.02 mg/m ³ TWA (as Co)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Copper (7440-50-8)	TWA	USA	0.1 mg/m ³ TWA (fume) 1 mg/m ³ TWA (dust and mist)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Copper (7440-50-8)	TLV-TWA	USA	1 mg/m ³ TWA (dust and mist, as Cu)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Copper (7440-50-8)	TLV-TWA	USA	0.2 mg/m ³ TWA (fume)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead (7439-92-1)	TWA	USA	50 µg/m ³ TWA (as Pb)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Lead (7439-92-1)	TWA	USA	50 µg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Lead (7439-92-1)	TLV-TWA	USA	0.05 mg/m ³ TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

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Lead (7439-92-1)	TLV-TWA	USA	0.05 mg/m ³ TWA (as Pb)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead (7439-92-1)	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
Lead (7439-92-1)	PEL	USA	30 µg/m ³ Action Level (Poison, See 29 CFR 1910.1025) 50 µg/m ³ TWA	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Manganous Nitrate Tetrahydrate (15710-66-4)	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)
Manganous Nitrate Tetrahydrate (15710-66-4)	PEL-Ceiling	USA	5 mg/m ³ Ceiling (as Mn)	U.S. - OSHA - Final PELs - Ceiling Limits
Nickel (7440-02-0)	TWA	USA	1 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nickel (7440-02-0)	TLV-TWA	USA	1.5 mg/m ³ TWA (inhalable fraction)	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)
Selenium Dioxide (7446-08-4)	TWA	USA	0.2 mg/m ³ TWA (as Se)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Selenium Dioxide (7446-08-4)	TLV-TWA	USA	0.2 mg/m ³ TWA (as Se)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

8.2. Exposure Controls

Engineering Controls: Use only outdoors or in a well-ventilated area. No specific controls are needed. Normal room ventilation is adequate.

Respiratory Protection: In case of inadequate ventilation wear respiratory protection. Normal room ventilation is adequate.

Skin Protection: Wear protective gloves and eye protection. Chemical resistant gloves.

Eye Protection: Wear protective gloves and eye protection. Safety glasses or goggles.

8.3. Personal Protective Equipment

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Colorless to slightly colored liquid

Physical State: Liquid

Odor: Data not available.

Odor Threshold: Data not available.

pH: Acidic

Melting/Freezing Point: Data not available.

Initial Boiling Point/Range: Approximately 100°C - Approximately 100°C

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: 1.05

Solubility: Miscible

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. Strong bases, metallic powders.

10.4. Hazardous Decomposition Products

Will not occur.

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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:

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 immediately). 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:

LDLo, Oral, Human: 430 mg/kg (Nitric Acid), details of toxic effects not reported other than lethal dose value.

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:

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:

Causes damage to organs. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

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Specific Target Organ Toxicity from Repeated Exposure:

Causes damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

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.

SECTION 14: Transportation Information

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

Sizes: 100 mL, 500 mL, 500 mL, 500 mL

UN Number: UN3264

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

Hazard Class: 8

Packing Group: III

Hazard Placard Labels:



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

Sizes: 100 mL, 500 mL, 500 mL, 500 mL

UN Number: UN3264

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

Hazard Class: 8

Packing Group: III

Hazard Placard Labels:



SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Lead (CAS # 7439-92-1): 30 µg/m³ Action Level (See 29 CFR 1910.1025); 50 µg/m³ TWA (See 29 CFR 1910.1025)

Lead (CAS # 7439-92-1): 30 µg/m³ Action Level (See 29 CFR 1910.1025, as Pb); 50 µg/m³ TWA (See 29 CFR 1910.1025, as Pb)

Arsenic (CAS # 7440-38-2): 10 µg/m³ TWA (See 29 CFR 1910.1018, except Arsine, as As); 5 µg/m³ Action Level (See 29 CFR 1910.1018, except Arsine, as As)

Cadmium (CAS # 7440-43-9): 5 µg/m³ TWA (See 29 CFR 1910.1027); 2.5 µg/m³ Action Level

Cadmium (CAS # 7440-43-9): 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

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

Ammonium Hydroxide (CAS # 1336-21-6): 1000 lb final RQ; 454 kg final RQ

Lead (CAS # 7439-92-1): 0.01 curie final RQ; 0.00037 TBq final RQ

Lead (CAS # 7439-92-1): 1 curie final RQ; 0.037 TBq final RQ

Lead (CAS # 7439-92-1): 10 curie final RQ; 0.37 TBq final RQ

Lead (CAS # 7439-92-1): 10 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is $>100\text{ }\mu\text{m}$); 4.54 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is $>100\text{ }\mu\text{m}$)

Lead (CAS # 7439-92-1): 100 curie final RQ; 3.7 TBq final RQ

Lead (CAS # 7439-92-1): 1000 curie final RQ; 37 TBq final RQ

Nickel (CAS # 7440-02-0): 10 curie final RQ; 0.37 TBq final RQ

Nickel (CAS # 7440-02-0): 100 curie final RQ; 3.7 TBq final RQ

Nickel (CAS # 7440-02-0): 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is $>100\text{ }\mu\text{m}$); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is $>100\text{ }\mu\text{m}$)

Arsenic (CAS # 7440-38-2): 1 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is $>100\text{ }\mu\text{m}$); 0.454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is $>100\text{ }\mu\text{m}$)

Arsenic (CAS # 7440-38-2): 1 lb final RQ; 0.454 kg final RQ

Arsenic (CAS # 7440-38-2): 10 curie final RQ; 0.37 TBq final RQ

Arsenic (CAS # 7440-38-2): 100 curie final RQ; 3.7 TBq final RQ

Arsenic (CAS # 7440-38-2): 1000 curie final RQ; 37 TBq final RQ

Cadmium (CAS # 7440-43-9): 0.1 curie final RQ; 0.0037 TBq final RQ

Cadmium (CAS # 7440-43-9): 1 curie final RQ; 0.037 TBq final RQ

Cadmium (CAS # 7440-43-9): 10 curie final RQ; 0.37 TBq final RQ

Cadmium (CAS # 7440-43-9): 10 lb final RQ (no

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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)
 Strontium Nitrate (CAS # 10042-76-9): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)
 Ammonium Molybdate (CAS # 13106-76-8): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)
 Ammonium Hydroxide (CAS # 1336-21-6): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)
 Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): 1.0 % de minimis concentration (listed under Chemical Category N450)
 Lead (CAS # 7439-92-1): 0.1 % Supplier notification limit (listed under Chemical Category N420)
 Lead (CAS # 7439-92-1): 0.1 % Supplier notification limit; 0.1 % de minimis concentration (when contained in stainless steel, brass, or bronze)
 Lead (CAS # 7439-92-1): 100 lb RT
 Lead (CAS # 7439-92-1): 100 lb RT (this lower threshold does not apply to lead when it is contained in stainless steel, brass or bronze alloy)
 Nickel (CAS # 7440-02-0): 0.1 % de minimis concentration
 Nickel (CAS # 7440-02-0): 0.1 % de minimis concentration (listed under Chemical Category N495)
 Arsenic (CAS # 7440-38-2): 0.1 % de minimis concentration
 Arsenic (CAS # 7440-38-2): 0.1 % de minimis concentration (listed under Chemical Category N020)
 Cadmium (CAS # 7440-43-9): 0.1 % de minimis concentration
 Cadmium (CAS # 7440-43-9): 0.1 % de minimis concentration (listed under Chemical Category N078)
 Cobalt (CAS # 7440-48-4): 0.1 % de minimis concentration
 Cobalt (CAS # 7440-48-4): 0.1 % de minimis concentration (listed under Chemical Category N096)
 Copper (CAS # 7440-50-8): 1.0 % de minimis concentration
 Copper (CAS # 7440-50-8): 1.0 % de minimis concentration (This category does not include CAS numbers 147-14-8, 1328-53-6)

15.5. Massachusetts Right-to-Know Substance List

Barium Nitrate (CAS # 10022-31-8): Present
 Strontium Nitrate (CAS # 10042-76-9): Present
 Ammonium Hydroxide (CAS # 1336-21-6): Present
 Lead (CAS # 7439-92-1): Teratogen
 Nickel (CAS # 7440-02-0): Carcinogen; Extraordinarily hazardous
 Arsenic (CAS # 7440-38-2): Carcinogen; Extraordinarily hazardous
 Cadmium (CAS # 7440-43-9): Carcinogen; Extraordinarily hazardous
 Cobalt (CAS # 7440-48-4): Present
 Copper (CAS # 7440-50-8): Present
 Zinc (CAS # 7440-66-6): Present
 Selenium Dioxide (CAS # 7446-08-4): Present
 Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous

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15.6. Pennsylvania Right-to-Know Hazardous Substances

Barium Nitrate (CAS # 10022-31-8): Environmental hazard
 Barium Nitrate (CAS # 10022-31-8): Present
 Strontium Nitrate (CAS # 10042-76-9): Present
 Ammonium Hydroxide (CAS # 1336-21-6): Environmental hazard
 Ammonium Hydroxide (CAS # 1336-21-6): Present
 Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): Environmental hazard
 Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): Present
 Lead (CAS # 7439-92-1): Environmental hazard
 Lead (CAS # 7439-92-1): Present
 Nickel (CAS # 7440-02-0): Environmental hazard
 Nickel (CAS # 7440-02-0): Environmental hazard; Special hazardous substance
 Nickel (CAS # 7440-02-0): Present
 Arsenic (CAS # 7440-38-2): Environmental hazard
 Arsenic (CAS # 7440-38-2): Environmental hazard; Special hazardous substance
 Arsenic (CAS # 7440-38-2): Present
 Arsenic (CAS # 7440-38-2): Present (including inorganic)
 Cadmium (CAS # 7440-43-9): Environmental hazard
 Cadmium (CAS # 7440-43-9): Environmental hazard (dust; fume; metal; powder); Special hazardous substance (metal; powder)
 Cadmium (CAS # 7440-43-9): Present
 Cadmium (CAS # 7440-43-9): Present (dust; fume; metal; powder)
 Cadmium (CAS # 7440-43-9): Present (metal; powder)
 Cobalt (CAS # 7440-48-4): Environmental hazard
 Cobalt (CAS # 7440-48-4): Environmental hazard; Present (fume)
 Cobalt (CAS # 7440-48-4): Present
 Copper (CAS # 7440-50-8): Environmental hazard
 Copper (CAS # 7440-50-8): Environmental hazard (dust; fume; metal)
 Copper (CAS # 7440-50-8): Present
 Copper (CAS # 7440-50-8): Present (dust; fume; metal)
 Zinc (CAS # 7440-66-6): Environmental hazard
 Zinc (CAS # 7440-66-6): Present
 Selenium Dioxide (CAS # 7446-08-4): Environmental hazard
 Selenium Dioxide (CAS # 7446-08-4): Present
 Nitric Acid (CAS # 7697-37-2): Environmental hazard
 Nitric Acid (CAS # 7697-37-2): Present
 Water (CAS # 7732-18-5): Present
 Aluminum Nitrate Nonahydrate (CAS # 7784-27-2): Present
 Chromium Nitrate Nonahydrate (CAS # 7789-02-8): Environmental hazard
 Chromium Nitrate Nonahydrate (CAS # 7789-02-8): Present

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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)

Strontium Nitrate (CAS # 10042-76-9): sn 1743

Strontium Nitrate (CAS # 10042-76-9): sn 3722

Strontium Nitrate (CAS # 10042-76-9): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

Ammonium Molybdate (CAS # 13106-76-8): sn 0105

Ammonium Hydroxide (CAS # 1336-21-6): corrosive

Ammonium Hydroxide (CAS # 1336-21-6): sn 0103

Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): sn 2324

Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): SN 2324 500 lb TPQ (Category Code N450. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Lead (CAS # 7439-92-1): carcinogen

Lead (CAS # 7439-92-1): carcinogen; teratogen

Lead (CAS # 7439-92-1): sn 1096

Lead (CAS # 7439-92-1): SN 1096 500 lb TPQ

Lead (CAS # 7439-92-1): sn 2266

Lead (CAS # 7439-92-1): SN 2266 500 lb TPQ (Category Code N420. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Nickel (CAS # 7440-02-0): carcinogen

Nickel (CAS # 7440-02-0): sn 1341

Nickel (CAS # 7440-02-0): SN 1341 500 lb TPQ

Nickel (CAS # 7440-02-0): sn 2366

Nickel (CAS # 7440-02-0): SN 2366 500 lb TPQ (Category Code N495. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Arsenic (CAS # 7440-38-2): carcinogen; teratogen

Arsenic (CAS # 7440-38-2): sn 0152

Arsenic (CAS # 7440-38-2): SN 0152 500 lb TPQ

Arsenic (CAS # 7440-38-2): sn 2138

Arsenic (CAS # 7440-38-2): SN 2138 500 lb TPQ (Category Code N020)

Cadmium (CAS # 7440-43-9): carcinogen

Cadmium (CAS # 7440-43-9): carcinogen; flammable - third degree; teratogen

Cadmium (CAS # 7440-43-9): sn 0305

Cadmium (CAS # 7440-43-9): SN 03

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15.8. California Proposition 65

Lead (CAS # 7439-92-1): 15 µg/day NSRL (oral)
 Lead (CAS # 7439-92-1): carcinogen, 10/1/1992
 Lead (CAS # 7439-92-1): developmental toxicity, 2/27/1987
 Lead (CAS # 7439-92-1): female reproductive toxicity 2/27/87
 Lead (CAS # 7439-92-1): male reproductive toxicity, 2/27/87
 Nickel (CAS # 7440-02-0): carcinogen, 10/1/1989 (metallic)
 Nickel (CAS # 7440-02-0): carcinogen, 5/7/2004
 Arsenic (CAS # 7440-38-2): 0.06 µg/day NSRL (inhalation); 10 µg/day NSRL (except inhalation)
 Arsenic (CAS # 7440-38-2): 0.06 µg/day NSRL (inhalation, listed under Arsenic); 10 µg/day NSRL (except inhalation, listed under Arsenic)
 Arsenic (CAS # 7440-38-2): carcinogen, 2/27/1987
 Cadmium (CAS # 7440-43-9): 0.05 µg/day NSRL (inhalation)
 Cadmium (CAS # 7440-43-9): carcinogen, 10/1/1987
 Cadmium (CAS # 7440-43-9): developmental toxicity, 5/1/1997
 Cadmium (CAS # 7440-43-9): male reproductive toxicity, 5/1/97
 Cobalt (CAS # 7440-48-4): carcinogen, 7/1/1992 (powder)

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

Barium Nitrate (CAS # 10022-31-8): Present (DSL)
 Strontium Nitrate (CAS # 10042-76-9): Present (DSL)
 Ammonium Molybdate (CAS # 13106-76-8): Present (DSL)
 Ammonium Hydroxide (CAS # 1336-21-6): Present (DSL)
 Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): Present (DSL)
 Potassium Carbonate (CAS # 584-08-7): Present (DSL)
 Lead (CAS # 7439-92-1): Present (DSL)
 Nickel (CAS # 7440-02-0): Present (DSL)
 Arsenic (CAS # 7440-38-2): Present (DSL)
 Cadmium (CAS # 7440-43-9): Present (DSL)
 Cobalt (CAS # 7440-48-4): Present (DSL)
 Copper (CAS # 7440-50-8): Present (DSL)
 Zinc (CAS # 7440-66-6): Present (DSL)
 Selenium Dioxide (CAS # 7446-08-4): Present (DSL)
 Nitric Acid (CAS # 7697-37-2): Present (DSL)
 Water (CAS # 7732-18-5): Present (DSL)
 Aluminum Nitrate Nonahydrate (CAS # 7784-27-2): Present (DSL)
 Chromium Nitrate Nonahydrate (CAS # 7789-02-8): Present (DSL)

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

Barium Nitrate (CAS # 10022-31-8): Present
Strontium Nitrate (CAS # 10042-76-9): Present
Ammonium Molybdate (CAS # 13106-76-8): Present
Ammonium Hydroxide (CAS # 1336-21-6): Present
Manganous Nitrate Tetrahydrate (CAS # 15710-66-4): Present
Potassium Carbonate (CAS # 584-08-7): Present
Lead (CAS # 7439-92-1): Present
Nickel (CAS # 7440-02-0): Present
Arsenic (CAS # 7440-38-2): Present
Cadmium (CAS # 7440-43-9): Present
Cobalt (CAS # 7440-48-4): Present
Copper (CAS # 7440-50-8): Present
Zinc (CAS # 7440-66-6): Present
Selenium Dioxide (CAS # 7446-08-4): Present
Nitric Acid (CAS # 7697-37-2): Present
Water (CAS # 7732-18-5): Present
Aluminum Nitrate Nonahydrate (CAS # 7784-27-2): Present
Chromium Nitrate Nonahydrate (CAS # 7789-02-8): 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. Causes serious eye damage. Fatal if inhaled. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

Keep only in original container. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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. IF exposed: Call a POISON CENTER or physician. Get medical attention if you feel unwell. Specific treatment is urgent (Wash areas of contact with water immediately). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

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.

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16.2. Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class: Not Applicable.

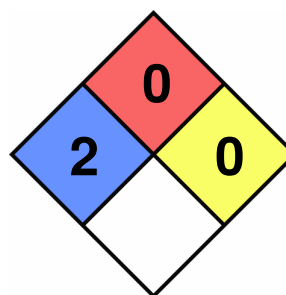
Physical Hazards Not Otherwise Classified (PHNOC): Not Applicable.

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

Biohazardous Infectious Materials Hazard Class: Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

Health: 2
Flammability: 0
Reactivity: 0
Special Hazard:



16.4. Document Revision

Last Revision Date: 5/1/2015

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.