



Safety Data Sheet

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Quality Control Standard 23 (Modified)

Product Number: RQC23MOD

Other Identifying Product Numbers: RQC23MOD-100, RQC23MOD-500

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 hr)

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 (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
Acute Toxicity - Oral	Category 4	H302	P264, P270, P301+P312, P330, P501
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
Reproductive Toxicity	Category 1	H360	P201, P202, P280, P308+P313, P405, P501
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

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.

Safety Data Sheet

Precautionary Statements:

Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original container.
P260	Do not breathe dust, fumes or mist.
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+P312	IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
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 d Continue rinsing.
P307+P311	IF exposed: Call a POISON CENTER or physician.
P308+P313	IF exposed or concerned: Get medical attention.
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).
P330	Rinse mouth.
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.

2.3. 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%
Water	H ₂ O	18.01 g/mol	7732-18-5	93.09%
Nitric Acid	HNO ₃	63.01 g/mol	7697-37-2	6.42%
Lithium Nitrate	LiNO ₃	68.94 g/mol	7790-69-4	0.10%
Chromium Nitrate Nonahydrate	Cr(NO ₃) ₃ ·9H ₂ O	238.01 g/mol	7789-02-8	0.07%
Hydrofluoric Acid	HF	20.00 g/mol	7664-39-3	0.05%
Ammonium Dihydrogen Phosphate	NH ₄ H ₂ PO ₄	97.99 g/mol	7722-76-1	0.04%
Calcium Carbonate	CaCO ₃	100.09 g/mol	471-34-1	0.02%
Ammonium Molybdate	(NH ₄) ₂ MoO ₄	Data not available.	13106-76-8	0.02%
Strontium Carbonate	SrCO ₃	147.62 g/mol	1633-05-2	0.02%
Selenium Dioxide	SeO ₂	110.95 g/mol	7446-08-4	0.01%
Antimony Trioxide	Sb ₂ O ₃	291.51 g/mol	1309-64-4	0.01%
Zinc	Zn	65.40 g/mol	7440-66-6	0.01%
Vanadium	V	50.94 g/mol	7440-62-2	0.01%
Copper	Cu	63.54 g/mol	7440-50-8	0.01%
Cobalt	Co	58.93 g/mol	7440-48-4	0.01%
Cadmium	Cd	112.41 g/mol	7440-43-9	0.01%
Beryllium	Be	9.01 g/mol	7440-41-7	0.01%
Arsenic	As	74.92 g/mol	7440-38-2	0.01%
Titanium	Ti	47.86 g/mol	7440-32-6	0.01%
Tin	Sn	118.71 g/mol	7440-31-5	0.01%
Thallium	Tl	204.38 g/mol	7440-28-0	0.01%
Nickel	Ni	58.69 g/mol	7440-02-0	0.01%
Manganese	Mn	54.93 g/mol	7439-96-5	0.01%
Magnesium	Mg	24.30 g/mol	7439-95-4	0.01%
Lead	Pb	207.2 g/mol	7439-92-1	0.01%
Iron	Fe	55.84 g/mol	7439-89-6	0.01%
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.



Safety Data Sheet

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

Contains low levels of known and suspected carcinogens. Corrosive Liquid. May be fatal if swallowed. 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.

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 to 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 and skin. 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 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)
Antimony Trioxide (1309-64-4)	TWA	USA	0.5 mg/m ³ TWA (as Sb)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	0.5 mg/m ³ TWA (as Sb)	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 (as As)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
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)	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
Beryllium (7440-41-7)	TWA	USA	2 µg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium (7440-41-7)	TWA	USA	2 µg/m ³ TWA (as Be)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Beryllium (7440-41-7)	TLV-TWA	USA	0.00005 mg/m ³ TWA (inhalable fraction as Be)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium (7440-41-7)	TLV-TWA	USA	0.00005 mg/m ³ TWA (inhalable fraction)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Beryllium (7440-41-7)	PEL-Ceiling	USA	5 µg/m ³ Ceiling	U.S. - OSHA - Final PELs - Ceiling Limits
Beryllium (7440-41-7)	PEL-Ceiling	USA	5 µg/m ³ Ceiling (as Be)	U.S. - OSHA - Final PELs - Ceiling Limits
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)

Safety Data Sheet

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)
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) 2.5 µg/m ³ Action Level	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, as Cd) 2.5 µg/m ³ Action Level (as Cd)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Calcium Carbonate (471-34-1)	TWA	USA	15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable fraction)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
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	0.2 mg/m ³ TWA (fume)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
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)

Safety Data Sheet

Hydrofluoric Acid (7664-39-3)	TWA	USA	3 ppm TWA (as F)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TWA	USA	2.5 mg/m ³ TWA (as F) 2.5 mg/m ³ TWA (dust)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TLV-Ceiling	USA	2 ppm Ceiling (as F)	ACGIH - Threshold Limit Values - Ceilings (TLV-C)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	0.5 ppm TWA (as F)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	2.5 mg/m ³ TWA (as F)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead (7439-92-1)	TWA	USA	50 µg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
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)	TLV-TWA	USA	0.05 mg/m ³ TWA (as Pb)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Lead (7439-92-1)	TLV-TWA	USA	0.05 mg/m ³ TWA	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) 50 µg/m ³ TWA	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, as Pb) 50 µg/m ³ TWA (as Pb)	U.S. - OSHA - Specifically Regulated Chemicals with PELs
Manganese (7439-96-5)	TLV-TWA	USA	0.02 mg/m ³ TWA (respirable fraction) 0.1 mg/m ³ TWA (inhalable fraction)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese (7439-96-5)	TLV-TWA	USA	0.02 mg/m ³ TWA (as Mn, listed under respirable fraction) 0.1 mg/m ³ TWA (as Mn)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Manganese (7439-96-5)	PEL-Ceiling	USA	5 mg/m ³ Ceiling (fume)	U.S. - OSHA - Final PELs - Ceiling Limits
Manganese (7439-96-5)	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)

Safety Data Sheet

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)
Thallium (7440-28-0)	TLV-TWA	USA	0.02 mg/m ³ TWA (inhalable fraction)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Thallium (7440-28-0)	TLV-TWA	USA	0.02 mg/m ³ TWA (inhalable fraction, as TI)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tin (7440-31-5)	TWA	USA	2 mg/m ³ TWA (except oxides, as Sn)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Tin (7440-31-5)	TLV-TWA	USA	2 mg/m ³ TWA (except Tin hydride, as Sn)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tin (7440-31-5)	TLV-TWA	USA	2 mg/m ³ TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Vanadium (7440-62-2)	PEL-Ceiling	USA	0.5 mg/m ³ Ceiling (respirable dust, as V ₂ O ₅) 0.1 mg/m ³ Ceiling (fume, as V ₂ O ₅)	U.S. - OSHA - Final PELs - Ceiling Limits

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.



Safety Data Sheet

SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Light 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 (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. Strong bases, metallic powders.

10.4. Hazardous Decomposition Products

Will not occur.



Safety Data Sheet

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Harmful if swallowed. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. Dispose of contents in accordance with local, state, federal and international regulations.

Acute Toxicity - Dermal Exposure:

Not applicable.

Acute Toxicity - Inhalation Exposure:

Fatal if inhaled. Do not breathe dust, fumes or mist. 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. Arsenic, Beryllium, Cadmium, Nickel are known or suspected carcinogens.

Skin Corrosion and Irritation:

Causes severe skin burns and eye damage. Do not breathe dust, fumes or mist. 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.



Safety Data Sheet

Reproductive Toxicity:

May damage fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Specific Target Organ Toxicity from Single Exposure:

Causes damage to organs. Do not breathe dust, fumes or mist. 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.

Specific Target Organ Toxicity from Repeated Exposure:

Causes damage to organs through prolonged or repeated exposure. Do not breathe dust, fumes or mist. 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.



Safety Data Sheet

SECTION 14: Transportation Information

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

UN Number: UN3264

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

Hazard Class: 8

Packing Group: III

Hazard Placard Labels:



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

UN Number: UN3264

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

Hydrofluoric Acid (CAS # 7664-39-3): 100 lb EPCRA RQ

Hydrofluoric Acid (CAS # 7664-39-3): 100 lb TPQ

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

Antimony Trioxide (CAS # 1309-64-4): 1000 lb final RQ; 454 kg final RQ

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

Iron (CAS # 7439-89-6): 0.1 curie final RQ; 0.0037 TBq final RQ

Iron (CAS # 7439-89-6): 10 curie final RQ; 0.37 TBq final RQ

Iron (CAS # 7439-89-6): 100 curie final RQ; 3.7 TBq 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 $>100\ \mu\text{m}$); 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 $>100\ \mu\text{m}$)

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

Magnesium (CAS # 7439-95-4): 10 curie final RQ; 0.37 TBq final RQ

Manganese (CAS # 7439-96-5): 10 curie final RQ; 0.37 TBq final RQ

Manganese (CAS # 7439-96-5): 100 curie final RQ; 3.7 TBq final RQ

Manganese (CAS # 7439-96-5): 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 $>100\ \mu\text{m}$); 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 $>100\ \mu\text{m}$)

Thallium (CAS # 7440-28-0): 10 curie final RQ; 0.37 TBq final RQ

Thallium (CAS # 7440-28-0): 100 curie final RQ; 3.7 TBq final RQ

Thallium (CAS # 7440-28-0): 1000 curie final RQ; 37 TBq final RQ

Thallium (CAS # 7440-28-0): 1000 lb final RQ (no reporting of releases of this hazardous substance is required)



Safety Data Sheet

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

Antimony Trioxide (CAS # 1309-64-4): 1.0 % de minimis concentration (listed under Chemical Category N010)
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)
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)
Manganese (CAS # 7439-96-5): 1.0 % de minimis concentration
Manganese (CAS # 7439-96-5): 1.0 % de minimis concentration (listed under Chemical Category N450)
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)
Thallium (CAS # 7440-28-0): 1.0 % de minimis concentration
Thallium (CAS # 7440-28-0): 1.0 % de minimis concentration (listed under Chemical Category N760)
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)
Beryllium (CAS # 7440-41-7): 0.1 % de minimis concentration
Beryllium (CAS # 7440-41-7): 0.1 % de minimis concentration (listed under Chemical Category N050)
Cadmium (CAS # 7440-43-9): 0.1 % de minimis concentration
Cadmium (CAS # 7440-43-9): 0.1 % de minimis concentration (listed under Chemical Category N084)
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)



Safety Data Sheet

15.5. Massachusetts Right-to-Know Substance List

Antimony Trioxide (CAS # 1309-64-4): Present
Ammonium Hydroxide (CAS # 1336-21-6): Present
Calcium Carbonate (CAS # 471-34-1): Present
Lead (CAS # 7439-92-1): Teratogen
Magnesium (CAS # 7439-95-4): Present
Manganese (CAS # 7439-96-5): Present
Nickel (CAS # 7440-02-0): Carcinogen; Extraordinarily hazardous
Thallium (CAS # 7440-28-0): Present
Tin (CAS # 7440-31-5): Present
Arsenic (CAS # 7440-38-2): Carcinogen; Extraordinarily hazardous
Beryllium (CAS # 7440-41-7): Carcinogen; Extraordinarily hazardous
Cadmium (CAS # 7440-43-9): Carcinogen; Extraordinarily hazardous
Cobalt (CAS # 7440-48-4): Present
Copper (CAS # 7440-50-8): Present
Vanadium (CAS # 7440-62-2): Present (dust and fume)
Zinc (CAS # 7440-66-6): Present
Selenium Dioxide (CAS # 7446-08-4): Present
Hydrofluoric Acid (CAS # 7664-39-3): Extraordinarily hazardous
Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous



Safety Data Sheet

15.6. Pennsylvania Right-to-Know Hazardous Substances

Antimony Trioxide (CAS # 1309-64-4): Environmental hazard
Antimony Trioxide (CAS # 1309-64-4): Present
Antimony Trioxide (CAS # 1309-64-4): Present (listed under Antimony oxide)
Ammonium Hydroxide (CAS # 1336-21-6): Environmental hazard
Ammonium Hydroxide (CAS # 1336-21-6): Present
Calcium Carbonate (CAS # 471-34-1): Present
Lead (CAS # 7439-92-1): Environmental hazard
Lead (CAS # 7439-92-1): Present
Magnesium (CAS # 7439-95-4): Present
Manganese (CAS # 7439-96-5): Environmental hazard
Manganese (CAS # 7439-96-5): Present
Nickel (CAS # 7440-02-0): Environmental hazard
Nickel (CAS # 7440-02-0): Environmental hazard; Special hazardous substance
Nickel (CAS # 7440-02-0): Present
Thallium (CAS # 7440-28-0): Environmental hazard
Thallium (CAS # 7440-28-0): Present
Tin (CAS # 7440-31-5): 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 (inorganic)
Beryllium (CAS # 7440-41-7): Environmental hazard
Beryllium (CAS # 7440-41-7): Environmental hazard (dust); Special hazardous substance
Beryllium (CAS # 7440-41-7): Present
Beryllium (CAS # 7440-41-7): Present (dust)
Cadmium (CAS # 7440-43-9): Environmental hazard
Cadmium (CAS # 7440-43-9): Environmental hazard (dust, fume, powder); Special hazardous substance (powder)
Cadmium (CAS # 7440-43-9): Present
Cadmium (CAS # 7440-43-9): Present (dust, fume, powder)
Cadmium (CAS # 7440-43-9): Present (powder)
Cobalt (CAS # 7440-48-4): Environmental hazard
Cobalt (CAS # 7440-48-4): Environmental hazard (fume)
Cobalt (CAS # 7440-48-4): Present
Copper (CAS # 7440-50-8): Environmental hazard
Copper (CAS # 7440-50-8): Environmental hazard (dust and fume)
Copper (CAS # 7440-50-8): Present
Copper (CAS # 7440-50-8): Present (dust and fume)
Vanadium (CAS # 7440-62-2): Environmental hazard (dust and fume)
Vanadium (CAS # 7440-62-2): Present (dust or fume)
Zinc (CAS # 7440-66-6): Environmental ha



Safety Data Sheet

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

Antimony Trioxide (CAS # 1309-64-4): carcinogen

Antimony Trioxide (CAS # 1309-64-4): sn 0149

Antimony Trioxide (CAS # 1309-64-4): sn 2223

Antimony Trioxide (CAS # 1309-64-4): SN 2223 TPQ: 500 lb (Category Code N010. Includes any unique chemical substance that contains the named metal as part of that chemical structure.)

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

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

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

Calcium Carbonate (CAS # 471-34-1): sn 4001

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 TPQ: 500 lb

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

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

Magnesium (CAS # 7439-95-4): sn 1136

Manganese (CAS # 7439-96-5): flammable - third degree

Manganese (CAS # 7439-96-5): sn 1155 (dust and fume)

Manganese (CAS # 7439-96-5): SN 1155 TPQ: 500 lb

Manganese (CAS # 7439-96-5): sn 2324

Manganese (CAS # 7439-96-5): SN 2324 TPQ: 500 lb (Category Code N450. 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 (dust and fume)

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

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

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

Thallium (CAS # 7440-28-0): flammable - third degree

Thallium (CAS # 7440-28-0): sn 1840

Thallium (CAS # 7440-28-0): SN 1840 TPQ: 500 lb

Thallium (CAS # 7440-28-0): sn 2809

Thallium (CAS # 7440-28-0): SN 2809 TPQ: 500 lb (Category Code N760. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Tin (CAS # 7440-31-5): flammable - thi



Safety Data Sheet

15.8. California Proposition 65

Antimony Trioxide (CAS # 1309-64-4): carcinogen, initial date 10/1/90

Lead (CAS # 7439-92-1): 15 µg/day NSRL (oral)

Lead (CAS # 7439-92-1): carcinogen, initial date 10/1/92

Lead (CAS # 7439-92-1): developmental toxicity, initial date 2/27/87

Lead (CAS # 7439-92-1): female reproductive toxicity, initial date 2/27/87

Lead (CAS # 7439-92-1): male reproductive toxicity, initial date 2/27/87

Nickel (CAS # 7440-02-0): carcinogen, initial date 10/1/89 (metallic)

Nickel (CAS # 7440-02-0): carcinogen, initial date 5/7/04

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, initial date 2/27/87

Beryllium (CAS # 7440-41-7): 0.1 µg/day NSRL

Beryllium (CAS # 7440-41-7): carcinogen, initial date 10/1/87

Cadmium (CAS # 7440-43-9): 0.05 µg/day NSRL (inhalation)

Cadmium (CAS # 7440-43-9): carcinogen, initial date 10/1/87

Cadmium (CAS # 7440-43-9): developmental toxicity, initial date 5/1/97

Cadmium (CAS # 7440-43-9): male reproductive toxicity, initial date 5/1/97

Cobalt (CAS # 7440-48-4): carcinogen, initial date 7/1/92 (powder)



Safety Data Sheet

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

Antimony Trioxide (CAS # 1309-64-4): Present
Ammonium Molybdate (CAS # 13106-76-8): Present
Ammonium Hydroxide (CAS # 1336-21-6): Present
Strontium Carbonate (CAS # 1633-05-2): Present
Calcium Carbonate (CAS # 471-34-1): Present
Iron (CAS # 7439-89-6): Present
Lead (CAS # 7439-92-1): Present
Magnesium (CAS # 7439-95-4): Present
Manganese (CAS # 7439-96-5): Present
Nickel (CAS # 7440-02-0): Present
Thallium (CAS # 7440-28-0): Present
Tin (CAS # 7440-31-5): Present
Titanium (CAS # 7440-32-6): Present
Arsenic (CAS # 7440-38-2): Present
Beryllium (CAS # 7440-41-7): Present
Cadmium (CAS # 7440-43-9): Present
Cobalt (CAS # 7440-48-4): Present
Copper (CAS # 7440-50-8): Present
Vanadium (CAS # 7440-62-2): Present
Zinc (CAS # 7440-66-6): Present
Selenium Dioxide (CAS # 7446-08-4): Present
Hydrofluoric Acid (CAS # 7664-39-3): Present
Nitric Acid (CAS # 7697-37-2): Present
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): Present
Water (CAS # 7732-18-5): Present
Chromium Nitrate Nonahydrate (CAS # 7789-02-8): Present
Lithium Nitrate (CAS # 7790-69-4): Present



Safety Data Sheet

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

Antimony Trioxide (CAS # 1309-64-4): Present
Ammonium Molybdate (CAS # 13106-76-8): Present
Ammonium Hydroxide (CAS # 1336-21-6): Present
Strontium Carbonate (CAS # 1633-05-2): Present
Calcium Carbonate (CAS # 471-34-1): Present
Iron (CAS # 7439-89-6): Present
Lead (CAS # 7439-92-1): Present
Magnesium (CAS # 7439-95-4): Present
Manganese (CAS # 7439-96-5): Present
Nickel (CAS # 7440-02-0): Present
Thallium (CAS # 7440-28-0): Present
Tin (CAS # 7440-31-5): Present
Titanium (CAS # 7440-32-6): Present
Arsenic (CAS # 7440-38-2): Present
Beryllium (CAS # 7440-41-7): Present
Cadmium (CAS # 7440-43-9): Present
Cobalt (CAS # 7440-48-4): Present
Copper (CAS # 7440-50-8): Present
Vanadium (CAS # 7440-62-2): Present
Zinc (CAS # 7440-66-6): Present
Selenium Dioxide (CAS # 7446-08-4): Present
Hydrofluoric Acid (CAS # 7664-39-3): Present [T]
Nitric Acid (CAS # 7697-37-2): Present
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): Present
Water (CAS # 7732-18-5): Present
Chromium Nitrate Nonahydrate (CAS # 7789-02-8): Present
Lithium Nitrate (CAS # 7790-69-4): 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.



Safety Data Sheet

SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Fatal if inhaled. May damage fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Do not breathe dust, fumes or mist. 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: Call a POISON CENTER or physician if you feel unwell. 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.

16.2. Miscellaneous Hazard Classes

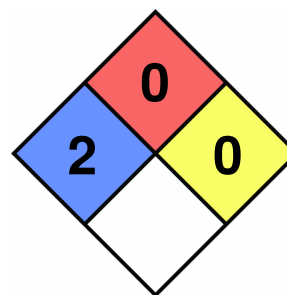
Canadian Carcinogenicity Hazard Class: Not Applicable.

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: 2
Flammability: 0
Reactivity: 0
Special Hazard:





Safety Data Sheet

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.