



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Standard #4 for ICP 3300 Low

Product Number RP33LOW0

Other Identifying Product Numbers RP33LOW0-1A

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 412 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

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Hazard Class	Category	Hazard Statements	Precautionary Statements
Skin Corrosion / Irritation	Category 2	H315	P264,P280,P302+P352,P321, P332+P313,P362+P364
Serious Eye Damage / Eye Irritation	Category 2	H319	P264,P280,P305+P351+P338, P337+P313

2.2. GHS Label Elements

Pictograms:



Signal Word: **Warning**

Hazard Statements:

NOTE: Hazard statements may be combined on labels to improve clarity and readability.

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

Precautionary Statements:

NOTE: Precautionary statements may be combined or consolidated on labels to improve clarity and readability.



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Prevention

Precautionary Number	Precautionary Statement
P264	Wash hands, arms, and face thoroughly after handling.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
P302+P352	IF ON SKIN: Wash with plenty of 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.
P332+P313	If skin irritation occurs: Get medical advice or attention.
P337+P313	If eye irritation persists: Get medical advice or attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

2 percent of this mixture consists of ingredient(s) of unknown acute oral and dermal toxicity.

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SECTION 3: Composition / Information on Ingredients

3.1. Components of Mixture

Chemical Name (IUPAC)	Common Name and Synonyms	CAS Number	Weight%
water	Water	7732-18-5	98.03
nitric acid	Nitric Acid	7697-37-2	1.96
aluminum trinitrate nonahydrate	Aluminum Nitrate Nonahydrate; Nitric acid, aluminium salt, nonahydrate	7784-27-2	< 0.1
manganese(2+) dinitrate hydrate	Manganous Nitrate Tetrahydrate; Nitric acid, manganese(2+) salt, hydrate; Manganese(II) nitrate hydrate	15710-66-4	< 0.1
azanium dihydrogen phosphate	Ammonium Dihydrogen Phosphate; Ammonium Phosphate Monobasic	7722-76-1	< 0.1
diazanium hexafluorosilicon(2-)	Ammonium Hexafluorosilicate (IV); Ammonium fluorosilicate	16919-19-0	< 0.1
calcium carbonate	Calcium Carbonate; Carbonic acid, calcium salt	471-34-1	< 0.1
disodium carbonate	Sodium Carbonate; Carbonic acid, disodium salt; Soda ash	497-19-8	< 0.1
potassium nitrate	Potassium Nitrate; Nitric acid potassium salt (1:1)	7757-79-1	< 0.1
chromium(3+) trinitrate nonahydrate	Chromium Nitrate Nonahydrate; Chromium(III) nitrate nonahydrate	7789-02-8	< 0.1
iron	Iron	7439-89-6	< 0.1
magnesium	Magnesium	7439-95-4	< 0.1
copper	Copper	7440-50-8	< 0.1
zinc	Zinc	7440-66-6	< 0.1
fluorane	Hydrofluoric Acid	7664-39-3	< 0.1
nickel	Nickel	7440-02-0	< 0.1
arsenic	Arsenic	7440-38-2	< 0.1
lead	Lead	7439-92-1	< 0.1
barium nitrate	Barium Nitrate	10022-31-8	< 0.1

SECTION 4: First-Aid Measures

4.1. Description of Necessary Measures

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.

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Ingestion: Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

Inhalation: Not expected to require first aid. If necessary, remove to fresh air.

Skin Contact: IF ON SKIN: Wash with plenty of 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.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes skin irritation Caution! Mildly corrosive liquid. Avoid contact with skin, eyes, and clothing. If swallowed, dilute with water and call a physician. Wash areas of contact with plenty of water. 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. Immediate Medical Attention or Special Treatment Needed

Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Use water or water spray.

5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

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. May react explosively with combustible organic or readily oxidizable materials such as: alcohols, turpentine, charcoal, organic refuse, metal powder, hydrogen sulfide, etc.

5.3. Special Protective Equipment and Precautions 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.

6.2. Cleanup and Containment Methods and Materials

Dilute with water, then flush to sewer if local regulations allow. If not allowed, save for recovery or recycling in an approved waste disposal facility. Always dispose of in accordance with local, state and federal regulations.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions



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As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials.

SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

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U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

Chemical Name	CAS Number	Exposure Limit
Barium Nitrate	10022-31-8	"0.5 mg/m3 TWA (regulated under CAS 7440-39-3, as Ba)" As Barium, soluble compounds [RR-00049-7]
Ammonium Hexafluorosilicate (IV)	16919-19-0	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]
Calcium Carbonate	471-34-1	"15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)" As Calcium carbonate [1317-65-3]
Lead	7439-92-1	50 µg/m3 TWA
Nickel	7440-02-0	1 mg/m3 TWA
Copper	7440-50-8	0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)
Hydrofluoric Acid	7664-39-3	3 ppm TWA (as F)
Nitric Acid	7697-37-2	2 ppm TWA; 5 mg/m3 TWA
Chromium Nitrate Nonahydrate	7789-02-8	"0.5 mg/m3 TWA (as Cr)" As Chromium(III) compounds [RR-03889-1]

U.S. OSHA - Permissible Exposure Limits (PEL) - Ceiling Limits

Chemical Name	CAS Number	Exposure Limit
Manganous Nitrate Tetrahydrate	15710-66-4	"5 mg/m3 Ceiling (as Mn)" As Manganese compounds [RR-00602-0]

U.S. OSHA - Permissible Exposure Limits (PEL) - Short Term Exposure Limits (STEL)

No limits found.

U.S. OSHA - Specifically Regulated Chemicals

Chemical Name	CAS Number	Exposure Limit
Lead	7439-92-1	30 µg/m3 Action Level (See 29 CFR 1910.1025); 50 µg/m3 TWA

ACGIH - Threshold Limit Values - Ceilings (TLV-C)

Chemical Name	CAS Number	Exposure Limit
Hydrofluoric Acid	7664-39-3	2 ppm Ceiling (as F)

ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

Chemical Name	CAS Number	Exposure Limit
Nitric Acid	7697-37-2	4 ppm STEL

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ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Chemical Name	CAS Number	Exposure Limit
Barium Nitrate	10022-31-8	"0.5 mg/m3 TWA (as Ba)" As Barium soluble compounds [RR-00049-7]
Manganous Nitrate Tetrahydrate	15710-66-4	"0.02 mg/m3 TWA (respirable particulate matter, as Mn); 0.1 mg/m3 TWA (inhalable particulate matter, as Mn)" As Manganese inorganic compounds [RR-03861-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]
Lead	7439-92-1	0.05 mg/m3 TWA
Nickel	7440-02-0	1.5 mg/m3 TWA (inhalable particulate matter)
Arsenic	7440-38-2	0.01 mg/m3 TWA
Copper	7440-50-8	0.2 mg/m3 TWA (fume)
Hydrofluoric Acid	7664-39-3	0.5 ppm TWA (as F)
Nitric Acid	7697-37-2	2 ppm TWA

8.2. Engineering Controls

No specific controls are needed. Normal room ventilation is adequate.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	liquid
Color:	Colorless
Odor:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	Approximately 0°C
Boiling Point/Range:	Approximately 100°C
Flammability:	Data not available.
Flammability/Explosive Limits:	Data not available.
Flash Point:	Not flammable
Auto-Ignition Temperature:	Data not available.
Decomposition Temperature:	Data not available.
pH:	acidic
Kinematic Viscosity:	Data not available.
Solubility:	miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.01
Relative Vapor Density:	Data not available.
Particle Characteristics:	Data not available.
Partition Coefficient n-octanol/water, log	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

Strong bases, metallic powders, Carbides, Hydrogen Sulfide, Turpentine and combustible organics.

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 acutely toxic.

Chemical Name	CAS Number	Toxicity
Barium Nitrate	10022-31-8	Oral LD50 Rat 300 mg/kg (Source: ECHA)
Ammonium Hexafluorosilicate (IV)	16919-19-0	Oral LD50 Acute Toxicity Estimate 100 mg/kg (Source: EU_REACH)
Calcium Carbonate	471-34-1	Oral LD50 Rat 6450 mg/kg (Source: NLM_CIP)
Sodium Carbonate	497-19-8	Oral LD50 Rat 4090 mg/kg (Source: NLM_HSDB)
Nickel	7440-02-0	Oral LD50 Rat >9000 mg/kg (powder suspended in mineral oil, Source: EU_RAR)
Arsenic	7440-38-2	Oral LD50 Acute Toxicity Estimate 100 mg/kg (Source: ECHA)
Copper	7440-50-8	Oral LD50 Mouse 413 mg/kg (Source: Canada_WHMIS)
Hydrofluoric Acid	7664-39-3	Oral LD50 Acute Toxicity Estimate 5 mg/kg (Source: Canada_WHMIS)
Ammonium Dihydrogen Phosphate	7722-76-1	Oral LD50 Rat >2000 mg/kg (no deaths occurred, Source: ECHA)
Potassium Nitrate	7757-79-1	Oral LD50 Rat >2000 mg/kg (no deaths occurred, Source: ECHA)
Chromium Nitrate Nonahydrate	7789-02-8	Oral LD50 Rat 3250 mg/kg (Source: NLM_CIP)

Acute Toxicity - Dermal Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Ammonium Hexafluorosilicate (IV)	16919-19-0	Dermal LD50 Acute Toxicity Estimate 300 mg/kg (Source: EU_REACH)
Calcium Carbonate	471-34-1	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)
Sodium Carbonate	497-19-8	Dermal LD50 Rabbit >2000 mg/kg (no deaths occurred, Source: ECHA)
Ammonium Dihydrogen Phosphate	7722-76-1	Dermal LD50 Rabbit >7940 mg/kg (Source: NLM_CIP)
Potassium Nitrate	7757-79-1	Dermal LD50 Rat >5000 mg/kg (no deaths occurred, Source: ECHA)

Acute Toxicity - Inhalation Exposure:

Not acutely toxic.

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Chemical Name	CAS Number	Toxicity
Barium Nitrate	10022-31-8	Inhalation LC50 Acute Toxicity Estimate 1.5 mg/L 4 h (Source: ECHA)
Ammonium Hexafluorosilicate (IV)	16919-19-0	Inhalation (Dust) LC50 Acute Toxicity Estimate 0.5 mg/L 4 h (Source: EU_REACH)
Calcium Carbonate	471-34-1	Inhalation LC50 Rat >3 mg/L 4 h (no deaths occurred, aerosol, Source: ECHA_API)
Sodium Carbonate	497-19-8	Inhalation LC50 Rat 2300 mg/m3 2 h (aerosol, Source: ECHA_API)
Nickel	7440-02-0	Inhalation LC50 Rat >10.2 mg/L 1 h (no deaths occurred, dust, Source: EU_RAR)
Arsenic	7440-38-2	Inhalation LC50 Acute Toxicity Estimate 0.5 mg/L 4 h (Source: ECHA)
Copper	7440-50-8	Inhalation LC50 Rat >5.11 mg/L 4 h (no deaths occurred, dust, Source: ECHA)
Hydrofluoric Acid	7664-39-3	Inhalation LC50 Rat 0.79 mg/L 1 h (vapor, Source: JAPAN_GHS)
Nitric Acid	7697-37-2	Inhalation LC50 Rat 3.22 mg/L 4 h (Source: WHMIS)
Potassium Nitrate	7757-79-1	Inhalation LC50 Rat >0.527 mg/L 4 h (no deaths occurred, dust, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Ammonium Hexafluorosilicate (IV)	16919-19-0	Group 3 (Not Classified) - Supplement 7 [1987] (used in drinking-water); Monograph 27 [1982] As Fluorides, inorganic
Lead	7439-92-1	Group 2B (Possibly Carcinogenic to Humans) - Supplement 7 [1987]; Monograph 23 [1980]
Nickel	7440-02-0	Group 2B (Possibly Carcinogenic to Humans) - Monograph 49 [1990]; Supplement 7 [1987]
Arsenic	7440-38-2	Group 1 (Carcinogenic to Humans) - Monograph 100C [2012]; Monograph 84 [2004] (in drinking water); Supplement 7 [1987]; Monograph 23 [1980]
Nitric Acid	7697-37-2	Group 1 (Carcinogenic to Humans) - Monograph 100F [2012]; Monograph 54 [1992] As Acid mists, strong inorganic
Chromium Nitrate Nonahydrate	7789-02-8	Group 3 (Not Classified) - Monograph 49 [1990]; Supplement 7 [1987]; Monograph 23 [1980]; Monograph 2 [1973] As Chromic nitrate [13548-38-4]

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Lead	7439-92-1	Reasonably Anticipated To Be A Human Carcinogen (listed under Lead and lead compounds)
Nickel	7440-02-0	Reasonably Anticipated To Be A Human Carcinogen (listed under Nickel compounds and metallic nickel)
Arsenic	7440-38-2	Known Human Carcinogen

U.S. OSHA specifically regulated carcinogens

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Chemical Name	CAS Number	Classification
No data found.		

11.3 Additional Toxicology Information:

Causes skin irritation. Causes serious eye irritation.

SECTION 12: Ecological Information

12.1. Ecotoxicity

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Chemical Name	CAS Number	Species	Exposure	Toxicity
Nickel	7440-02-0	Freshwater Algae	Acute	EC50 72 h Pseudokirchneriella subcapitata 0.18 mg/L (IUCLID); EC50 96 h Pseudokirchneriella subcapitata 0.174 - 0.311 mg/L [static] (EPA)
Copper	7440-50-8	Freshwater Algae	Acute	EC50 72 h Pseudokirchneriella subcapitata 0.0426 - 0.0535 mg/L [static] (EPA); EC50 96 h Pseudokirchneriella subcapitata 0.031 - 0.054 mg/L [static] (EPA)
Zinc	7440-66-6	Freshwater Algae	Acute	EC50 96 h Pseudokirchneriella subcapitata 0.11 - 0.271 mg/L [static] (EPA); EC50 72 h Pseudokirchneriella subcapitata 0.09 - 0.125 mg/L [static] (EPA)
Ammonium Hexafluorosilicate (IV)	16919-19-0	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 25.8 mg/L [static]
Sodium Carbonate	497-19-8	Freshwater Fish	Acute	LC50 96 h Lepomis macrochirus 300 mg/L [static] (EPA); LC50 96 h Pimephales promelas 310 - 1220 mg/L [static] (EPA)
Lead	7439-92-1	Freshwater Fish	Acute	LC50 96 h Cyprinus carpio 0.44 mg/L [semi-static] (EPA); LC50 96 h Oncorhynchus mykiss 1.17 mg/L [flow-through] (EPA); LC50 96 h Oncorhynchus mykiss 1.32 mg/L [static] (EPA)
Nickel	7440-02-0	Freshwater Fish	Acute	LC50 96 h Brachydanio rerio >100 mg/L (IUCLID); LC50 96 h Cyprinus carpio 1.3 mg/L [semi-static] (EPA); LC50 96 h Cyprinus carpio 10.4 mg/L [static] (EPA)
Copper	7440-50-8	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 0.0068 - 0.0156 mg/L (EPA); LC50 96 h Pimephales promelas <0.3 mg/L [static] (EPA); LC50 96 h Pimephales promelas 0.2 mg/L [flow-through] (EPA); LC50 96 h Oncorhynchus mykiss 0.052 mg/L [flow-through] (EPA); LC50 96 h Lepomis macrochirus 1.25 mg/L [static] (EPA); LC50 96 h Cyprinus carpio 0.3 mg/L [semi-static] (EPA); LC50 96 h Cyprinus carpio 0.8 mg/L [static] (EPA); LC50 96 h Poecilia reticulata 0.112 mg/L [flow-through] (EPA)

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Zinc	7440-66-6	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 2.16 - 3.05 mg/L [flow-through] (EPA); LC50 96 h Pimephales promelas 0.211 - 0.269 mg/L [semi-static] (EPA); LC50 96 h Pimephales promelas 2.66 mg/L [static] (EPA); LC50 96 h Cyprinus carpio 30 mg/L (EPA); LC50 96 h Cyprinus carpio 0.45 mg/L [semi-static] (EPA); LC50 96 h Cyprinus carpio 7.8 mg/L [static] (EPA); LC50 96 h Lepomis macrochirus 3.5 mg/L [static] (EPA); LC50 96 h Oncorhynchus mykiss 0.24 mg/L [flow-through] (EPA); LC50 96 h Oncorhynchus mykiss 0.59 mg/L [semi-static] (EPA); LC50 96 h Oncorhynchus mykiss 0.41 mg/L [static] (EPA)
Ammonium Dihydrogen Phosphate	7722-76-1	Freshwater Fish	Acute	LC50 96 h Oncorhynchus mykiss >85.9 mg/L [static] (ECHA)
Sodium Carbonate	497-19-8	Water Flea	Acute	EC50 48 h Daphnia magna 265 mg/L (IUCLID)
Lead	7439-92-1	Water Flea	Acute	EC50 48 h water flea 600 µg/L
Nickel	7440-02-0	Water Flea	Acute	EC50 48 h Daphnia magna >100 mg/L (IUCLID); EC50 48 h Daphnia magna 1 mg/L [Static] (EPA)
Copper	7440-50-8	Water Flea	Acute	EC50 48 h Daphnia magna 0.03 mg/L [Static] (EPA)
Zinc	7440-66-6	Water Flea	Acute	EC50 48 h Daphnia magna 0.139 - 0.908 mg/L [Static] (EPA)
Hydrofluoric Acid	7664-39-3	Water Flea	Acute	EC50 48 h Daphnia species 270 mg/L (IUCLID)

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.

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SECTION 14: Transportation Information

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

Not regulated according to DOT regulations.

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

Not regulated according to IATA Dangerous Goods Regulations.

14.3 Transportation of Dangerous Goods (TDG, Canada)

Not regulated according to TDG regulations.

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SECTION 15: Regulatory Information

15.01. Occupational Safety and Health Administration (OSHA) Hazards

Chemical Name	CAS Number	Regulatory Information
Lead	7439-92-1	30 µg/m3 Action Level (See 29 CFR 1910.1025); 50 µg/m3 TWA (See 29 CFR 1910.1025)

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

Chemical Name	CAS Number	RQ	TPQ
Hydrofluoric Acid	7664-39-3	100 lb TPQ	100 lb EPCRA RQ
Nitric Acid	7697-37-2	1000 lb TPQ	1000 lb EPCRA RQ

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

Chemical Name	CAS Number	Regulatory Information
Ammonium Hexafluorosilicate (IV)	16919-19-0	1000 lb final RQ; 454 kg final RQ
Lead	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 µm); 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 µm)
Nickel	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 µm); 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 µm)
Arsenic	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 µm); 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 µm)
Copper	7440-50-8	5000 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 µm); 2270 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 µm)
Zinc	7440-66-6	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 µm); 1000 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 µm)
Hydrofluoric Acid	7664-39-3	100 lb final RQ; 45.4 kg final RQ
Nitric Acid	7697-37-2	1000 lb final RQ; 454 kg final RQ



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15.04. Superfund Amendments and Reauthorization Act (SARA) 313 Toxics Release Inventory (TRI)

Chemical Name	CAS Number	List	Regulatory Information
Barium Nitrate	10022-31-8	Emission Reporting	"1.0 % de minimis concentration (includes any unique chemical substance that contains Barium as part of that chemical's infrastructure except for Barium sulfate CAS 7727-43-7, listed under Chemical Category N040)" As Barium compounds [RR-00555-0]; "1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]
Manganous Nitrate Tetrahydrate	15710-66-4	Emission Reporting	"1.0 % de minimis concentration (includes any unique chemical substance that contains Manganese as part of that chemical's infrastructure, listed under Chemical Category N450)" As Manganese compounds [RR-00602-0]; "1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]
Ammonium Hexafluorosilicate (IV)	16919-19-0	Emission Reporting	"1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)" As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]
Lead	7439-92-1	Emission Reporting	not eligible for the de minimis exemption
Lead	7439-92-1	Chemicals of Special Concern	100 lb RT (this lower threshold does not apply to lead when it is contained in stainless steel, brass or bronze alloy)
Nickel	7440-02-0	Emission Reporting	0.1 % de minimis concentration
Arsenic	7440-38-2	Emission Reporting	0.1 % de minimis concentration
Copper	7440-50-8	Emission Reporting	1.0 % de minimis concentration
Zinc	7440-66-6	Emission Reporting	1.0 % de minimis concentration (dust or fume only)
Hydrofluoric Acid	7664-39-3	Emission Reporting	1.0 % de minimis concentration
Nitric Acid	7697-37-2	Emission Reporting	1.0 % de minimis concentration
Ammonium Dihydrogen Phosphate	7722-76-1	Emission Reporting	"1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)" As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]

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Potassium Nitrate	7757-79-1	Emission Reporting	"1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]
Aluminum Nitrate Nonahydrate	7784-27-2	Emission Reporting	"1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]
Chromium Nitrate Nonahydrate	7789-02-8	Emission Reporting	"1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]; "1.0 % de minimis concentration (includes any unique chemical substance that contains Chromium as part of that chemical's infrastructure except for Chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the Chromite ore processing residue (COPR), no de minimis concentration has been assigned to this chemical category, listed under Chemical Category N090)" As Chromium(III) compounds [RR-03889-1]

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Barium Nitrate	10022-31-8	Present
Ammonium Hexafluorosilicate (IV)	16919-19-0	Present
Calcium Carbonate	471-34-1	"Present (including dust)" As Calcium carbonate [1317-65-3]
Lead	7439-92-1	Teratogen
Magnesium	7439-95-4	Present
Nickel	7440-02-0	Carcinogen; Extraordinarily hazardous
Arsenic	7440-38-2	Carcinogen; Extraordinarily hazardous
Copper	7440-50-8	Present
Zinc	7440-66-6	Present
Hydrofluoric Acid	7664-39-3	Extraordinarily hazardous
Nitric Acid	7697-37-2	Extraordinarily hazardous
Potassium Nitrate	7757-79-1	Present

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15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Barium Nitrate	10022-31-8	Environmental hazard
Manganous Nitrate Tetrahydrate	15710-66-4	"Environmental hazard" As Manganese compounds [RR-00602-0]
Ammonium Hexafluorosilicate (IV)	16919-19-0	Environmental hazard
Calcium Carbonate	471-34-1	"Present" As Limestone [1317-65-3]
Lead	7439-92-1	Environmental hazard
Magnesium	7439-95-4	Present
Nickel	7440-02-0	Environmental hazard; Special hazardous substance
Arsenic	7440-38-2	Environmental hazard (including inorganic); Special hazardous substance
Copper	7440-50-8	Environmental hazard (dust; fume; metal)
Zinc	7440-66-6	Environmental hazard
Hydrofluoric Acid	7664-39-3	Environmental hazard
Nitric Acid	7697-37-2	Environmental hazard
Potassium Nitrate	7757-79-1	Present
Aluminum Nitrate Nonahydrate	7784-27-2	"Present" As Aluminum soluble salts [RR-00021-5]
Chromium Nitrate Nonahydrate	7789-02-8	"Environmental hazard" As Chromium compounds [RR-00634-8]

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

Chemical Name	CAS Number	Regulatory Information
Barium Nitrate	10022-31-8	sn 0186
Manganous Nitrate Tetrahydrate	15710-66-4	"sn 2324" As Manganese compounds [RR-00602-0]; "sn 3722" As Nitrate compounds [RR-01770-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	sn 0101
Calcium Carbonate	471-34-1	"sn 4001" As Calcium carbonate [1317-65-3]
Lead	7439-92-1	sn 1096
Magnesium	7439-95-4	sn 1136
Nickel	7440-02-0	sn 1341
Arsenic	7440-38-2	sn 0152
Copper	7440-50-8	sn 0528
Zinc	7440-66-6	sn 2021
Hydrofluoric Acid	7664-39-3	sn 3759
Nitric Acid	7697-37-2	sn 1356
Potassium Nitrate	7757-79-1	sn 1574
Aluminum Nitrate Nonahydrate	7784-27-2	"sn 0061" As Aluminum nitrate [13473-90-0]; "sn 3722" As Nitrate compounds [RR-01770-9]
Chromium Nitrate Nonahydrate	7789-02-8	"sn 0435" As Chromium nitrate [13548-38-4]; "sn 2245" As Chromium compounds [RR-00634-8]; "sn 3722" As Nitrate compounds [RR-01770-9]; "sn 2870" As Chromium(III) compounds [RR-03889-1]

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
Lead	7439-92-1	carcinogen, 10/1/1992
Lead	7439-92-1	developmental toxicity, 2/27/1987
Lead	7439-92-1	male reproductive toxicity, 2/27/87
Lead	7439-92-1	female reproductive toxicity 2/27/87
Lead	7439-92-1	15 µg/day NSRL (oral)
Nickel	7440-02-0	carcinogen, 10/1/1989 (metallic)
Arsenic	7440-38-2	0.06 µg/day NSRL (inhalation); 10 µg/day NSRL (except inhalation)

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

Chemical Name	CAS Number	List	Status
Barium Nitrate	10022-31-8	DSL	Present
Manganous Nitrate Tetrahydrate	15710-66-4	DSL	"Present" As Manganese nitrate [10377-66-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	DSL	Present
Calcium Carbonate	471-34-1	DSL	Present
Calcium Carbonate	471-34-1	NDSL	"Present" As Calcium carbonate [1317-65-3]
Sodium Carbonate	497-19-8	DSL	Present
Iron	7439-89-6	DSL	Present
Lead	7439-92-1	DSL	Present
Magnesium	7439-95-4	DSL	Present
Nickel	7440-02-0	DSL	Present
Arsenic	7440-38-2	DSL	Present
Copper	7440-50-8	DSL	Present
Zinc	7440-66-6	DSL	Present
Hydrofluoric Acid	7664-39-3	DSL	Present
Nitric Acid	7697-37-2	DSL	Present
Ammonium Dihydrogen Phosphate	7722-76-1	DSL	Present
Water	7732-18-5	DSL	Present
Potassium Nitrate	7757-79-1	DSL	Present
Aluminum Nitrate Nonahydrate	7784-27-2	DSL	"Present" As Aluminum nitrate [13473-90-0]
Chromium Nitrate Nonahydrate	7789-02-8	DSL	"Present" As Chromium nitrate [13548-38-4]

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

Chemical Name	CAS Number	Status
Barium Nitrate	10022-31-8	Present (ACTIVE)
Manganous Nitrate Tetrahydrate	15710-66-4	"Present (ACTIVE)" As Nitric acid, manganese(2+) salt (2:1) [10377-66-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	Present (ACTIVE)
Calcium Carbonate	471-34-1	Present (ACTIVE)
Sodium Carbonate	497-19-8	Present (ACTIVE)
Iron	7439-89-6	Present (ACTIVE)
Lead	7439-92-1	Present (ACTIVE)
Magnesium	7439-95-4	Present (ACTIVE)
Nickel	7440-02-0	Present (ACTIVE)
Arsenic	7440-38-2	Present (ACTIVE)
Copper	7440-50-8	Present (ACTIVE)
Zinc	7440-66-6	Present (ACTIVE)
Hydrofluoric Acid	7664-39-3	Present (ACTIVE)
Nitric Acid	7697-37-2	Present (ACTIVE)
Ammonium Dihydrogen Phosphate	7722-76-1	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)
Potassium Nitrate	7757-79-1	Present (ACTIVE)
Aluminum Nitrate Nonahydrate	7784-27-2	"Present (ACTIVE)" As Nitric acid, aluminum salt (3:1) [13473-90-0]
Chromium Nitrate Nonahydrate	7789-02-8	"Present (ACTIVE)" As Nitric acid, chromium(3+) salt (3:1) [13548-38-4]

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

Chemical Name	CAS Number	List	Number
Barium Nitrate	10022-31-8	EINECS	233-020-5
Manganous Nitrate Tetrahydrate	15710-66-4	EINECS	"233-828-8" As Manganese dinitrate [10377-66-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	EINECS	240-968-3
Calcium Carbonate	471-34-1	EINECS	207-439-9
Sodium Carbonate	497-19-8	EINECS	207-838-8
Iron	7439-89-6	EINECS	231-096-4
Lead	7439-92-1	EINECS	231-100-4
Magnesium	7439-95-4	EINECS	231-104-6
Nickel	7440-02-0	EINECS	231-111-4
Arsenic	7440-38-2	EINECS	231-148-6
Copper	7440-50-8	EINECS	231-159-6
Zinc	7440-66-6	EINECS	231-175-3
Hydrofluoric Acid	7664-39-3	EINECS	231-634-8
Nitric Acid	7697-37-2	EINECS	231-714-2
Ammonium Dihydrogen Phosphate	7722-76-1	EINECS	231-764-5
Water	7732-18-5	EINECS	231-791-2
Potassium Nitrate	7757-79-1	EINECS	231-818-8
Aluminum Nitrate Nonahydrate	7784-27-2	EINECS	"236-751-8" As Aluminium nitrate [13473-90-0]
Chromium Nitrate Nonahydrate	7789-02-8	EINECS	"236-921-1" As Chromium trinitrate [13548-38-4]

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15.12. China - Inventory of Existing chemical Substances (IECSC)

Chemical Name	CAS Number	Status
Barium Nitrate	10022-31-8	Present [35583]
Manganous Nitrate Tetrahydrate	15710-66-4	"Present [35610]" As Manganese(II) nitrate [10377-66-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	Present [23294]
Calcium Carbonate	471-34-1	Present [34102]
Sodium Carbonate	497-19-8	Present [34127]
Iron	7439-89-6	Present [34355]
Lead	7439-92-1	Present [25764]
Magnesium	7439-95-4	Present [24921]
Nickel	7440-02-0	Present [25343]
Arsenic	7440-38-2	Present [29975]
Copper	7440-50-8	Present [34399]
Zinc	7440-66-6	Present [35873]
Hydrofluoric Acid	7664-39-3	Present [27221]
Nitric Acid	7697-37-2	Present [35578]
Ammonium Dihydrogen Phosphate	7722-76-1	Present [22403]
Water	7732-18-5	Present [32224]
Potassium Nitrate	7757-79-1	Present [35600]
Aluminum Nitrate Nonahydrate	7784-27-2	Present [21185]
Chromium Nitrate Nonahydrate	7789-02-8	Present [21184]

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15.13. Korea - Existing Chemicals Inventory (KECI/KECL)

Chemical Name	CAS Number	List	Status
Barium Nitrate	10022-31-8	Annex 1	Present [KE-02070]
Barium Nitrate	10022-31-8	Annex 2	"97-3-693 (1997-3-0693)" As Barium compounds [RR-00555-0]
Manganous Nitrate Tetrahydrate	15710-66-4	Annex 1	"Present [KE-23016]" As Manganese nitrate [10377-66-9]
Ammonium Hexafluorosilicate (IV)	16919-19-0	Annex 1	Present [KE-01674]
Calcium Carbonate	471-34-1	Annex 1	Present [KE-04487]
Sodium Carbonate	497-19-8	Annex 1	Present [KE-31380]
Iron	7439-89-6	Annex 1	Present [KE-21059]
Lead	7439-92-1	Annex 1	Present [KE-21887]
Magnesium	7439-95-4	Annex 1	Present [KE-22673]
Nickel	7440-02-0	Annex 1	Present [KE-25818]
Arsenic	7440-38-2	Annex 1	Present [KE-01933]
Copper	7440-50-8	Annex 1	Present [KE-08896]
Zinc	7440-66-6	Annex 1	Present [KE-35518]
Hydrofluoric Acid	7664-39-3	Annex 1	Present [KE-20198]
Nitric Acid	7697-37-2	Annex 1	Present [KE-25911]
Ammonium Dihydrogen Phosphate	7722-76-1	Annex 1	Present [KE-01656]
Water	7732-18-5	Annex 1	Present [KE-35400]
Potassium Nitrate	7757-79-1	Annex 1	Present [KE-29163]
Aluminum Nitrate Nonahydrate	7784-27-2	Annex 1	"Present [KE-01007]" As Aluminum nitrate [13473-90-0]
Chromium Nitrate Nonahydrate	7789-02-8	Annex 1	"Present [KE-06019]" As Chromium nitrate [13548-38-4]

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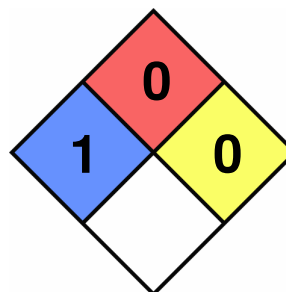
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Barium Nitrate	10022-31-8	(1)-86
Manganous Nitrate Tetrahydrate	15710-66-4	(1)-470
Ammonium Hexafluorosilicate (IV)	16919-19-0	(1)-313
Calcium Carbonate	471-34-1	(1)-122
Sodium Carbonate	497-19-8	(1)-164
Iron	7439-89-6	- (exempt)
Lead	7439-92-1	- (exempt)
Magnesium	7439-95-4	- (exempt)
Nickel	7440-02-0	- (exempt)
Arsenic	7440-38-2	- (exempt)
Copper	7440-50-8	- (exempt)
Zinc	7440-66-6	- (exempt)
Hydrofluoric Acid	7664-39-3	(1)-306
Nitric Acid	7697-37-2	(1)-394
Ammonium Dihydrogen Phosphate	7722-76-1	(1)-379
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)
Potassium Nitrate	7757-79-1	(1)-449
Aluminum Nitrate Nonahydrate	7784-27-2	(1)-20 (not considered as a new chemical substance)
Chromium Nitrate Nonahydrate	7789-02-8	(1)-281

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

Health: 1
Flammability: 0
Reactivity 0
Special Hazard:





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16.2 Document Revision

Last Revision Date:

2026-05-05

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