



## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation** ICP-MS Calibration Standard 4

**Product Number** RICPMS4

**Other Identifying Product Numbers** RICPMS4-100, RICPMS4-1000

#### 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

This product is not categorized as hazardous in any GHS hazard class.

#### 2.2. GHS Label Elements

**Pictograms:** None Required.

**Signal Word:** None Required.

**Hazard Statements:** None Required.

**Precautionary Statements:** None Required.

#### 2.3. Hazards not Otherwise Classified

No other hazards identified.

#### 2.4. Ingredients of Unknown Acute Toxicity

This product does not contain any ingredients of unknown acute 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  | 99.95   |
| azanium tetrafluoroborate           | Ammonium Tetrafluoroborate; Ammonium fluoroborate                                              | 13826-83-0 | < 0.1   |
| diazanium hexafluorosilicon(2-)     | Ammonium Hexafluorosilicate (IV); Ammonium fluorosilicate                                      | 16919-19-0 | < 0.1   |
| nitric acid                         | Nitric Acid                                                                                    | 7697-37-2  | < 0.1   |
| diazanium sulfate                   | Ammonium Sulfate                                                                               | 7783-20-2  | < 0.1   |
| diazanium hexafluorotitanium(2-)    | Ammonium Hexafluorotitanate; Ammonium titanium fluoride                                        | 16962-40-6 | < 0.1   |
| azanium dihydrogen phosphate        | Ammonium Dihydrogen Phosphate; Ammonium Phosphate Monobasic                                    | 7722-76-1  | < 0.1   |
| oxozirconium(2+) dichloride hydrate | Zirconyl Chloride Octahydrate; Zirconium, dichlorooxo-, octahydrate                            | 13520-92-8 | < 0.1   |
| diazanium hexafluorogermanate(2-)   | Ammonium Hexafluorogermanate; Ammonium hexafluorogermanate(IV); Diammonium hexafluorogermanate | 16962-47-3 | < 0.1   |
| ammonium hexafluoroniobate (V)      | Ammonium Hexafluoroniobate; Ammonium hexafluoroniobate(1-)                                     | 12062-13-4 | < 0.1   |
| diammonium molybdate (VI)           | Ammonium Molybdate; Molybdic acid, diammonium salt                                             | 13106-76-8 | < 0.1   |
| ammonium heptafluorotantalate (V)   | Ammonium Heptafluorotantalate; Tantalate(2-), heptafluoro-, diammonium                         | 12022-02-5 | < 0.1   |
| ammonium tungstate                  | Ammonium Tungstate; Ammonium tungsten oxide                                                    | 11140-77-5 | < 0.1   |
| fluorane                            | Hydrofluoric Acid                                                                              | 7664-39-3  | < 0.1   |
| azanium oxido(trioxo)rhenium        | Ammonium Perrhenate                                                                            | 13598-65-7 | < 0.1   |
| ammonium hydroxide                  | Ammonium Hydroxide; Aqueous ammonia                                                            | 1336-21-6  | < 0.1   |

### SECTION 4: First-Aid Measures

#### 4.1. Description of Necessary Measures

**Eye Contact:** May cause slight irritation.

**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.

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**Skin Contact:** May cause slight irritation to those allergic to phosphates.

## 4.2. Most Important Symptoms and Effects, Acute and Delayed

Avoid contact with skin, eyes, and clothing. If swallowed, dilute with water and call a physician. Wash areas of contact with plenty of water. Does not present any significant health hazards. EYE CONTACT: May cause slight irritation. SKIN CONTACT: May cause slight irritation to those allergic to phosphates.

## 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 considered to be a fire or explosion hazard.

### 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 appropriate PPE for the size and nature of the spill. As a general rule, wear safety glasses and gloves.

### 6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

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### SECTION 8: Exposure Controls / Personal Protection

#### 8.1. Exposure Limits

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

| Chemical Name                    | CAS Number | Exposure Limit                                                                  |
|----------------------------------|------------|---------------------------------------------------------------------------------|
| Ammonium Molybdate               | 13106-76-8 | "5 mg/m <sup>3</sup> TWA (as Mo)" As Molybdenum, soluble compounds [RR-00036-2] |
| Ammonium Hydroxide               | 1336-21-6  | "50 ppm TWA; 35 mg/m <sup>3</sup> TWA" As Ammonia [7664-41-7]                   |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | "5 mg/m <sup>3</sup> TWA (as Zr)" As Zirconium compounds [RR-00624-6]           |
| Ammonium Tetrafluoroborate       | 13826-83-0 | "2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]                    |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | "2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]                    |
| Ammonium Hexafluorotitanate      | 16962-40-6 | "2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]                    |
| Hydrofluoric Acid                | 7664-39-3  | 3 ppm TWA (as F)                                                                |
| Nitric Acid                      | 7697-37-2  | 2 ppm TWA; 5 mg/m <sup>3</sup> TWA                                              |

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

No limits found.

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

No limits found.

##### U.S. OSHA - Specifically Regulated Chemicals

No limits found.

##### 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                                                          |
|-------------------------------|------------|-------------------------------------------------------------------------|
| Ammonium Hydroxide            | 1336-21-6  | "35 ppm STEL" As Ammonia [7664-41-7]                                    |
| Zirconyl Chloride Octahydrate | 13520-92-8 | "10 mg/m <sup>3</sup> STEL (as Zr)" As Zirconium compounds [RR-00624-6] |
| 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                                                                                                   |
|----------------------------------|------------|------------------------------------------------------------------------------------------------------------------|
| Ammonium Tungstate               | 11140-77-5 | "3 mg/m3 TWA (in the absence of Cobalt, respirable particulate matter, as W)" As Tungsten compounds [RR-00616-6] |
| Ammonium Molybdate               | 13106-76-8 | "0.5 mg/m3 TWA (respirable particulate matter, as Mo)" As Molybdenum soluble compounds [RR-00036-2]              |
| Ammonium Hydroxide               | 1336-21-6  | "25 ppm TWA" As Ammonia [7664-41-7]                                                                              |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | "5 mg/m3 TWA (as Zr)" As Zirconium compounds [RR-00624-6]                                                        |
| Ammonium Tetrafluoroborate       | 13826-83-0 | "2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]                                                                 |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | "2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]                                                                 |
| Ammonium Hexafluorotitanate      | 16962-40-6 | "2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]                                                                 |
| 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, Neoprene or PVC.

**Eye Protection:** Safety glasses or goggles.

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## SECTION 9: Physical and Chemical Properties

### 9.1. Basic Physical and Chemical Properties

|                                                   |                     |
|---------------------------------------------------|---------------------|
| <b>Physical State:</b>                            | liquid              |
| <b>Color:</b>                                     | Colorless           |
| <b>Odor:</b>                                      | Data not available. |
| <b>Odor Threshold:</b>                            | Data not available. |
| <b>Melting/Freezing Point:</b>                    | Approximately 0°C   |
| <b>Boiling Point/Range:</b>                       | Approximately 100°C |
| <b>Flammability:</b>                              | Data not available. |
| <b>Flammability/Explosive Limits:</b>             | Data not available. |
| <b>Flash Point:</b>                               | Not flammable       |
| <b>Auto-Ignition Temperature:</b>                 | Data not available. |
| <b>Decomposition Temperature:</b>                 | Data not available. |
| <b>pH:</b>                                        | Data not available. |
| <b>Kinematic Viscosity:</b>                       | Data not available. |
| <b>Solubility:</b>                                | miscible            |
| <b>Vapor Pressure:</b>                            | Data not available. |
| <b>Evaporation Rate:</b>                          | Data not available. |
| <b>Relative Density:</b>                          | 1.0                 |
| <b>Relative Vapor Density:</b>                    | Data not available. |
| <b>Particle Characteristics:</b>                  | Data not available. |
| <b>Partition Coefficient n-octanol/water, log</b> | 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

None identified.

### 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                                                                          |
|----------------------------------|------------|-----------------------------------------------------------------------------------|
| Zirconyl Chloride Octahydrate    | 13520-92-8 | Oral LD50 Rat 3500 mg/kg (Source: JAPAN_GHS) As Zirconium oxychloride [7699-43-6] |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Oral LD50 Acute Toxicity Estimate 100 mg/kg (Source: EU_REACH)                    |
| 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)                      |
| Ammonium Sulfate                 | 7783-20-2  | Oral LD50 Rat 2840 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) |
| Ammonium Dihydrogen Phosphate    | 7722-76-1  | Dermal LD50 Rabbit >7940 mg/kg (Source: NLM_CIP)                 |
| Ammonium Sulfate                 | 7783-20-2  | Dermal LD50 Rat >2000 mg/kg (Source: NLM_HSDB)                   |

##### Acute Toxicity - Inhalation Exposure:

Not acutely toxic.

| Chemical Name                    | CAS Number | Toxicity                                                                       |
|----------------------------------|------------|--------------------------------------------------------------------------------|
| Ammonium Hydroxide               | 1336-21-6  | Inhalation LC50 Acute Toxicity Estimate 3 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) |
| 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)                              |

#### 11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)



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| Chemical Name                    | CAS Number | Classification                                                                                                          |
|----------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------|
| Ammonium Tetrafluoroborate       | 13826-83-0 | Group 3 (Not Classified) - Supplement 7 [1987] (used in drinking-water);<br>Monograph 27 [1982] As Fluorides, inorganic |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Group 3 (Not Classified) - Supplement 7 [1987] (used in drinking-water);<br>Monograph 27 [1982] As Fluorides, inorganic |
| Nitric Acid                      | 7697-37-2  | Group 1 (Carcinogenic to Humans) - Monograph 100F [2012]; Monograph 54<br>[1992] As Acid mists, strong inorganic        |

### National Toxicology Program (NTP)

| Chemical Name  | CAS Number | Classification |
|----------------|------------|----------------|
| No data found. |            |                |

### U.S. OSHA specifically regulated carcinogens

| Chemical Name  | CAS Number | Classification |
|----------------|------------|----------------|
| No data found. |            |                |

### 11.3 Additional Toxicology Information:

Data not available.

## SECTION 12: Ecological Information

### 12.1. Ecotoxicity

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| Chemical Name                    | CAS Number | Species         | Exposure | Toxicity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------|------------|-----------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ammonium Hydroxide               | 1336-21-6  | Freshwater Fish | Acute    | LC50 96 h Pimephales promelas 8.2 mg/L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | Freshwater Fish | Acute    | "LC50 96 h Pimephales promelas 18 mg/L [static] (EPA); LC50 96 h Lepomis macrochirus 15 mg/L [static] (EPA)" As Zirconium oxychloride [7699-43-6]                                                                                                                                                                                                                                                                                                                                                                           |
| Ammonium Perrhenate              | 13598-65-7 | Freshwater Fish | Acute    | LC50 96 h Danio rerio >100 mg/L [static] (ECHA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Freshwater Fish | Acute    | LC50 96 h Pimephales promelas 25.8 mg/L [static]                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ammonium Dihydrogen Phosphate    | 7722-76-1  | Freshwater Fish | Acute    | LC50 96 h Oncorhynchus mykiss >85.9 mg/L [static] (ECHA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Ammonium Sulfate                 | 7783-20-2  | Freshwater Fish | Acute    | LC50 96 h Brachydanio rerio 250 mg/L (IUCLID); LC50 96 h Brachydanio rerio 480 mg/L [flow-through] (IUCLID); LC50 96 h Brachydanio rerio 420 mg/L [semi-static] (IUCLID); LC50 96 h Cyprinus carpio 18 mg/L (IUCLID); LC50 96 h Oncorhynchus mykiss 32.2 - 41.9 mg/L [flow-through] (EPA); LC50 96 h Oncorhynchus mykiss 5.2 - 8.2 mg/L [static] (EPA); LC50 96 h Pimephales promelas >100 mg/L (IUCLID); LC50 96 h Poecilia reticulata 123 - 128 mg/L [semi-static] (EPA); LC50 96 h Poecilia reticulata 126 mg/L (IUCLID) |
| Ammonium Hydroxide               | 1336-21-6  | Water Flea      | Acute    | EC50 48 h water flea 0.66 mg/L; EC50 48 h Daphnia pulex 0.66 mg/L                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Hydrofluoric Acid                | 7664-39-3  | Water Flea      | Acute    | EC50 48 h Daphnia species 270 mg/L (IUCLID)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ammonium Sulfate                 | 7783-20-2  | Water Flea      | Acute    | LC50 48 h Daphnia magna 14 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.

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## 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)

Not regulated according to DOT regulations.

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

Not regulated according to IATA Dangerous Goods Regulations.



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### 14.3 Transportation of Dangerous Goods (TDG, Canada)

Not regulated according to TDG regulations.

## SECTION 15: Regulatory Information

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### 15.01. Occupational Safety and Health Administration (OSHA) Hazards

| Chemical Name  | CAS Number | Regulatory Information |
|----------------|------------|------------------------|
| No data found. |            |                        |

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

| Chemical Name      | CAS Number | RQ                                  | TPQ                                      |
|--------------------|------------|-------------------------------------|------------------------------------------|
| Ammonium Hydroxide | 1336-21-6  | "500 lb TPQ" As Ammonia [7664-41-7] | "100 lb EPCRA RQ" As Ammonia [7664-41-7] |
| 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 Hydroxide               | 1336-21-6  | 1000 lb final RQ; 454 kg final RQ  |
| Ammonium Tetrafluoroborate       | 13826-83-0 | 5000 lb final RQ; 2270 kg final RQ |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | 1000 lb final RQ; 454 kg final RQ  |
| 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                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ammonium Molybdate               | 13106-76-8 | 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]                                                                                                                                                                                                                                     |
| Ammonium Hydroxide               | 1336-21-6  | Emission Reporting | "1.0 % de minimis concentration (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)" As Ammonia [7664-41-7];<br>"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] |
| Ammonium Tetrafluoroborate       | 13826-83-0 | 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]                                                                                                                                                                                                                                     |
| 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]                                                                                                                                                                                                                                     |
| Ammonium Hexafluorotitanate      | 16962-40-6 | 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]                                                                                                                                                                                                                                     |
| Ammonium Hexafluorogermanate     | 16962-47-3 | 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]                                                                                                                                                                                                                                     |
| 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]                                                                                                                                                                                                                                     |
| Ammonium Sulfate                 | 7783-20-2  | 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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## 15.05. Massachusetts Right-to-Know Substance List

| Chemical Name                    | CAS Number | Regulatory Information                         |
|----------------------------------|------------|------------------------------------------------|
| Ammonium Hydroxide               | 1336-21-6  | Present                                        |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | "Present" As Zirconium oxychloride [7699-43-6] |
| Ammonium Tetrafluoroborate       | 13826-83-0 | Present                                        |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Present                                        |
| Hydrofluoric Acid                | 7664-39-3  | Extraordinarily hazardous                      |
| Nitric Acid                      | 7697-37-2  | Extraordinarily hazardous                      |
| Ammonium Sulfate                 | 7783-20-2  | Present                                        |

## 15.06. Pennsylvania Right-to-Know Hazardous Substances

| Chemical Name                    | CAS Number | Regulatory Information |
|----------------------------------|------------|------------------------|
| Ammonium Hydroxide               | 1336-21-6  | Environmental hazard   |
| Ammonium Tetrafluoroborate       | 13826-83-0 | Environmental hazard   |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Environmental hazard   |
| Hydrofluoric Acid                | 7664-39-3  | Environmental hazard   |
| Nitric Acid                      | 7697-37-2  | Environmental hazard   |
| Ammonium Sulfate                 | 7783-20-2  | Environmental hazard   |

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

| Chemical Name                    | CAS Number | Regulatory Information              |
|----------------------------------|------------|-------------------------------------|
| Ammonium Molybdate               | 13106-76-8 | sn 0105                             |
| Ammonium Hydroxide               | 1336-21-6  | sn 0103                             |
| Ammonium Tetrafluoroborate       | 13826-83-0 | sn 0100                             |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | sn 0101                             |
| Ammonium Hexafluorotitanate      | 16962-40-6 | "sn 0936" As Fluorides [RR-02792-9] |
| Hydrofluoric Acid                | 7664-39-3  | sn 3759                             |
| Nitric Acid                      | 7697-37-2  | sn 1356                             |

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## 15.08. California Proposition 65

| Chemical Name  | CAS Number | Regulatory Information |
|----------------|------------|------------------------|
| No data found. |            |                        |

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

| Chemical Name                    | CAS Number | List | Status                                         |
|----------------------------------|------------|------|------------------------------------------------|
| Ammonium Molybdate               | 13106-76-8 | DSL  | Present                                        |
| Ammonium Hydroxide               | 1336-21-6  | DSL  | Present                                        |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | DSL  | "Present" As Zirconium oxychloride [7699-43-6] |
| Ammonium Perrhenate              | 13598-65-7 | DSL  | Present                                        |
| Ammonium Tetrafluoroborate       | 13826-83-0 | DSL  | Present                                        |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | DSL  | Present                                        |
| Ammonium Hexafluorotitanate      | 16962-40-6 | NDSL | 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                                        |
| Ammonium Sulfate                 | 7783-20-2  | DSL  | Present                                        |





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

| Chemical Name                    | CAS Number | Status                                                    |
|----------------------------------|------------|-----------------------------------------------------------|
| Ammonium Molybdate               | 13106-76-8 | Present (ACTIVE)                                          |
| Ammonium Hydroxide               | 1336-21-6  | Present (ACTIVE)                                          |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | "Present (ACTIVE)" As Zirconium, dichlorooxo- [7699-43-6] |
| Ammonium Perrhenate              | 13598-65-7 | Present (ACTIVE)                                          |
| Ammonium Tetrafluoroborate       | 13826-83-0 | Present (ACTIVE)                                          |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Present (ACTIVE)                                          |
| Ammonium Hexafluorotitanate      | 16962-40-6 | 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)                                     |
| Ammonium Sulfate                 | 7783-20-2  | Present (ACTIVE)                                          |

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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                                                |
|----------------------------------|------------|--------|-------------------------------------------------------|
| Ammonium Hexafluoroniobate       | 12062-13-4 | EINECS | 235-046-2                                             |
| Ammonium Molybdate               | 13106-76-8 | EINECS | 236-031-3                                             |
| Ammonium Hydroxide               | 1336-21-6  | EINECS | 215-647-6                                             |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | EINECS | "231-717-9" As Zirconium dichloride oxide [7699-43-6] |
| Ammonium Perrhenate              | 13598-65-7 | EINECS | 237-075-6                                             |
| Ammonium Tetrafluoroborate       | 13826-83-0 | EINECS | 237-531-4                                             |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | EINECS | 240-968-3                                             |
| Ammonium Hexafluorotitanate      | 16962-40-6 | EINECS | 241-036-9                                             |
| Ammonium Hexafluorogermanate     | 16962-47-3 | EINECS | 241-037-4                                             |
| 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                                             |
| Ammonium Sulfate                 | 7783-20-2  | EINECS | 231-984-1                                             |

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

| Chemical Name                    | CAS Number | Status                                                   |
|----------------------------------|------------|----------------------------------------------------------|
| Ammonium Molybdate               | 13106-76-8 | Present [25038]                                          |
| Ammonium Hydroxide               | 1336-21-6  | Present [27662]                                          |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | Present [24177]                                          |
| Ammonium Perrhenate              | 13598-65-7 | Present (MEE Announcement No. 11 of 2021; Index No. 137) |
| Ammonium Tetrafluoroborate       | 13826-83-0 | Present [32539]                                          |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Present [23294]                                          |
| Ammonium Hexafluorotitanate      | 16962-40-6 | Present [13288]                                          |
| 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]                                          |
| Ammonium Sulfate                 | 7783-20-2  | Present [23019]                                          |

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

| Chemical Name                    | CAS Number | List    | Status                                                    |
|----------------------------------|------------|---------|-----------------------------------------------------------|
| Ammonium Hexafluoroniobate       | 12062-13-4 | Annex 1 | Present [KE-01672]                                        |
| Ammonium Molybdate               | 13106-76-8 | Annex 1 | Present [KE-01707]                                        |
| Ammonium Hydroxide               | 1336-21-6  | Annex 1 | Present [KE-01688]                                        |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | Annex 1 | "Present [KE-35627]" As Zirconium oxychloride [7699-43-6] |
| Ammonium Perrhenate              | 13598-65-7 | Annex 1 | Present [KE-01726]                                        |
| Ammonium Tetrafluoroborate       | 13826-83-0 | Annex 1 | Present [KE-01748]                                        |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | Annex 1 | Present [KE-01674]                                        |
| Ammonium Hexafluorotitanate      | 16962-40-6 | Annex 1 | Present [KE-01676]                                        |
| 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]                                        |
| Ammonium Sulfate                 | 7783-20-2  | Annex 1 | Present [KE-01743]                                        |

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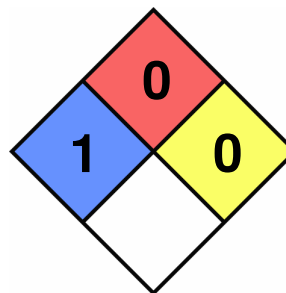
### 15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

| Chemical Name                    | CAS Number | MITI No.                                                      |
|----------------------------------|------------|---------------------------------------------------------------|
| Ammonium Tungstate               | 11140-77-5 | (1)-390                                                       |
| Ammonium Heptafluorotantalate    | 12022-02-5 | (1)-318                                                       |
| Ammonium Molybdate               | 13106-76-8 | (1)-389                                                       |
| Ammonium Hydroxide               | 1336-21-6  | (1)-314                                                       |
| Zirconyl Chloride Octahydrate    | 13520-92-8 | (1)-639, (1)-648 (not considered as a new chemical substance) |
| Ammonium Perrhenate              | 13598-65-7 | (1)-718                                                       |
| Ammonium Tetrafluoroborate       | 13826-83-0 | (1)-47                                                        |
| Ammonium Hexafluorosilicate (IV) | 16919-19-0 | (1)-313                                                       |
| Ammonium Hexafluorotitanate      | 16962-40-6 | (1)-1118                                                      |
| 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)              |
| Ammonium Sulfate                 | 7783-20-2  | (1)-400                                                       |

## 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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