RICCA CHEMICAL COMPANY®

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: MISA Standard 5, Fluoride Soluble Group

Product Number: RMISA5

Other Identifying Product Numbers: RMISA5-100

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

Company: Ricca Chemical Company
Address: 448 West Fork Drive

Arlington, TX 76012 USA

Telephone: 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA)	800-424-9300
CHEMTREC (International)	1+ 703-527-3887

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statements:	Precautionary Statements:
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
Corrosive to Metals	Category 1	H290	P234, P390, P406

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2.2. GHS Label Elements

Pictograms:

Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Precautionary Statements:

Precautionary Number	Precautionary Statement
P234	Keep only in original container.
P260	Do not breathe fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P280	Wear protective gloves and eye protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P321	Specific treatment (Wash areas of contact with water.).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

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SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H_2O	18.01 g/mol	7732-18-5	94.86
Nitric Acid	HNO_3	63.01 g/mol	7697-37-2	4.74
Ammonium Tetrafluoroborate	BF_4H_4N	104.84 g/mol	13826-83-0	< 0.1
Hydrofluoric Acid	HF	20.00 g/mol	7664-39-3	< 0.1
Ammonium Sulfate	$(NH_4)_2SO_4$	132.13 g/mol	7783-20-2	< 0.1
Ammonium Dihydrogen Phosphate	$NH_4H_2PO_4$	97.99 g/mol	7722-76-1	< 0.1
Ammonium Hexafluorogermanate	$(NH_4)_2GeF_6$	222.71 g/mol	16962-47-3	< 0.1
Zirconyl Nitrate	$ZrO(NO_3)_2{\cdot}2H_2O$	231.23 g/mol	13826-66-9	< 0.1
Ammonium Hexafluoroniobate	NH_4NbF_6	224.93 g/mol	12062-13-4	< 0.1
Ammonium Heptafluorotantalate	$(NH_4)_2TaF_7$	350.01 g/mol	12022-02-5	< 0.1
Antimony Trioxide	Sb_2O_3	291.51 g/mol	1309-64-4	< 0.1
Hafnium Oxide	HfO_2	210.48 g/mol	12055-23-1	< 0.1
Silicon	Si	28.08 g/mol	7440-21-3	< 0.1
Tungsten	W	183.84 g/mol	7440-33-7	< 0.1
Titanium	Ti	47.86 g/mol	7440-32-6	< 0.1
Tin	Sn	118.71 g/mol	7440-31-5	< 0.1
Rhenium	Re	186.20 g/mol	7440-15-5	< 0.1
Molybdenum	Mo	95.95 g/mol	7439-98-7	< 0.1

SECTION 4: First-Aid Measures

4.1. General First Aid Information

Eye Contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. May cause irritation, redness, pain, and tearing.

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. May cause irritation, redness and pain. Contact will discolor skin yellow-brown depending on exposure which will wear off after a period of time.

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

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage. Causes serious eye damage. Corrosive Liquid. May be fatal if swallowed. Contains a low level of a suspected carcinogen. 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 (Wash areas of contact with water.). 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, g oxygen. Immediately flush with plenty of water for at least 15 minutes. Remove any contaminated clothing. Wash with soap and water, then flush agai with water. 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

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.

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.

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SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Hafnium Oxide (12055-23-1)	TLV-TWA	USA	"0.5 mg/m³ TWA (as Hf)" As Hafnium compounds [RR-03981-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hafnium Oxide (12055-23-1)	TLV-TWA	USA	0.5 mg/m³ TWA (as Hf)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	0.02 mg/m³ TWA (inhalable particulate matter)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.02 mg/m³ TWA (inhalable particulate matter)" As Antimony trioxide [1309-64-4]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Antimony Trioxide (1309-64-4)	TWA	USA	0.5 mg/m³ TWA (as Sb)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	0.5 mg/m³ TWA (as Sb)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TLV-TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Antimony Trioxide (1309-64-4)	TWA	USA	"0.5 mg/m³ TWA (as Sb)" As Antimony compounds [RR-00585-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Zirconyl Nitrate (13826-66-9)	TLV-TWA	USA	"5 mg/m³ TWA (as Zr)" As Zirconium compounds [RR-00624-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Zirconyl Nitrate (13826-66-9)	TLV-STEL	USA	"10 mg/m³ STEL (as Zr)" As Zirconium compounds [RR-00624-6]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Zirconyl Nitrate (13826-66-9)	TWA	USA	"5 mg/m³ TWA (as Zr)" As Zirconium compounds [RR-00624-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Zirconyl Nitrate (13826-66-9)	TWA	USA	5 mg/m³ TWA (as Zr)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Zirconyl Nitrate (13826-66-9)	TLV-TWA	USA	5 mg/m³ TWA (as Zr)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

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Zirconyl Nitrate (13826-66-9)	TLV-STEL	USA	10 mg/m³ STEL (as Zr)	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Zirconyl Nitrate (13826-66-9)	TLV-STEL	USA	"10 mg/m³ STEL (as Zr)" As Zirconium compounds [RR-00624-6]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Zirconyl Nitrate (13826-66-9)	TLV-TWA	USA	"5 mg/m³ TWA (as Zr)" As Zirconium compounds [RR-00624-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Zirconyl Nitrate (13826-66-9)	TWA	USA	"5 mg/m³ TWA (as Zr)" As Zirconium compounds [RR-00624-6]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Tetrafluoroborate (13826-8	TWA	USA	"2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Tetrafluoroborate (13826-8	TLV-TWA	USA	"2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Ammonium Tetrafluoroborate (13826-8	TWA	USA	"2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Tetrafluoroborate (13826-8	TLV-TWA	USA	"2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Ammonium Tetrafluoroborate (13826-8	TLV-TWA	USA	"2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Ammonium Tetrafluoroborate (13826-8	TWA	USA	"2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Tetrafluoroborate (13826-8	TWA	USA	2.5 mg/m³ TWA (as F)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Tetrafluoroborate (13826-8	TLV-TWA	USA	2.5 mg/m³ TWA (as F)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Molybdenum (7439-98-7)	TWA	USA	"15 mg/m³ TWA (total dust)" As Molybdenum, insoluble compounds [RR-00037-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Molybdenum (7439-98-7)	TLV-TWA	USA	10 mg/m³ TWA (inhalable particulate matter); 3 mg/m³ TWA (respirable particulate matter)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Molybdenum (7439-98-7)	TLV-TWA	USA	10 mg/m³ TWA (inhalable particulate matter, as Mo); 3 mg/m³ TWA (respirable particulate matter, as Mo)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Molybdenum (7439-98-7)	TWA	USA	15 mg/m³ TWA (total dust)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

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Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

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Silicon (7440-21-3)	TWA	USA	"15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)" As Silicon [7440-21-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Tin (7440-31-5)	TWA	USA	"2 mg/m³ TWA (except oxides, as Sn)" As Tin, inorganic compounds [RR-00043-1]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Tin (7440-31-5)	TLV-TWA	USA	2 mg/m³ TWA (inhalable particulate matter)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tin (7440-31-5)	TLV-TWA	USA	2 mg/m³ TWA (excluding Tin hydride and Indium tin oxide, inhalable particulate matter, as Sn)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tin (7440-31-5)	TWA	USA	2 mg/m³ TWA (except oxides, as Sn)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Tin (7440-31-5)	TLV-TWA	USA	"2 mg/m³ TWA (excluding Tin hydride and Indium tin oxide, inhalable particulate matter, as Sn)" As Tin inorganic compounds [RR-00043-1]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tin (7440-31-5)	TWA	USA	"2 mg/m³ TWA (except oxides, as Sn)" As Tin, inorganic compounds [RR-00043-1]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Tungsten (7440-33-7)	TLV-TWA	USA	"3 mg/m³ TWA (respirable particulate matter)" As Tungsten, metal [7440-33-7]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tungsten (7440-33-7)	TLV-TWA	USA	3 mg/m³ TWA (respirable particulate matter)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Tungsten (7440-33-7)	TLV-TWA	USA	"3 mg/m³ TWA (in the absence of Cobalt, respirable particulate matter, as W)" As Tungsten compounds [RR-00616-6]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TWA	USA	"3 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]; "2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

Hydrofluoric Acid (7664-39-3)	TLV-Ceiling	USA	"2 ppm Ceiling (as F)" As Hydrogen fluoride [7664-39-3]	ACGIH - Threshold Limit Values - Ceilings (TLV-C)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	"0.5 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]; "2.5 mg/m³ TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	"0.5 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TWA	USA	"3 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TLV-Ceiling	USA	"2 ppm Ceiling (as F)" As Hydrogen fluoride [7664-39-3]	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-Ceiling	USA	2 ppm Ceiling (as F)	ACGIH - Threshold Limit Values - Ceilings (TLV-C)
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/m³ TWA (as F)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	2.5 mg/m³ TWA (as F)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TLV-Ceiling	USA	"2 ppm Ceiling (as F)" As Hydrogen fluoride [7664-39-3]	ACGIH - Threshold Limit Values - Ceilings (TLV-C)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	"0.5 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TWA	USA	"3 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TLV-Ceiling	USA	"2 ppm Ceiling (as F)" As Hydrogen fluoride [7664-39-3]	ACGIH - Threshold Limit Values - Ceilings (TLV-C)

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Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	"0.5 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TWA	USA	"3 ppm TWA (as F)" As Hydrogen fluoride [7664-39-3]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-STEL	USA	"4 ppm STEL" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TLV-TWA	USA	"2 ppm TWA" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TWA	USA	"2 ppm TWA; 5 mg/m³ TWA" As Nitric acid [7697-37-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-TWA	USA	"2 ppm TWA" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TWA	USA	"2 ppm TWA; 5 mg/m³ TWA" As Nitric acid [7697-37-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-STEL	USA	"4 ppm STEL" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
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)
Nitric Acid (7697-37-2)	TWA	USA	2 ppm TWA; 5 mg/m³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TWA	USA	"2 ppm TWA; 5 mg/m³ TWA" As Nitric acid [7697-37-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-TWA	USA	"2 ppm TWA" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TLV-STEL	USA	"4 ppm STEL" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TWA	USA	"2 ppm TWA; 5 mg/m³ TWA" As Nitric acid [7697-37-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-STEL	USA	"4 ppm STEL" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TLV-TWA	USA	"2 ppm TWA" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

Nitric Acid (7697-37-2)	TWA	USA	"2 ppm TWA; 5 mg/m³ TWA" As Nitric acid [7697-37-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-TWA	USA	"2 ppm TWA" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TLV-STEL	USA	"4 ppm STEL" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TLV-TWA	USA	"2 ppm TWA" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TLV-STEL	USA	"4 ppm STEL" As Nitric acid [7697-37-2]	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TWA	USA	"2 ppm TWA; 5 mg/m³ TWA" As Nitric acid [7697-37-2]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)

8.2. Exposure Controls

Engineering Controls: No specific controls are needed. Normal room ventilation is adequate.

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. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses or goggles.

SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Colorless liquid
Physical State: Liquid
Odor: Data not available.
Odor Threshold: Data not available.
pH: Acidic
Melting/Freezing Point: Approximately 0°C
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: 1.04
Solubility: Miscible
Partition Coefficient: Data not available.
Auto-Ignition Temperature: Data not available.
Decomposition Temperature: Data not available.
Viscosity: Data not available.
Explosive Properties: Data not available.
Oxidizing Properties: Data not available.

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Keep only in original container. Strong bases, metallic powders.

10.4. Hazardous Decomposition Products

Will not occur.

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SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Not applicable.

Acute Toxicity - Dermal Exposure:

Not applicable.

Acute Toxicity - Inhalation Exposure:

Not applicable.

Acute Toxicity - Other Information:

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

Skin Corrosion and Irritation:

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water.). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Serious Eye Damage and Irritation:

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Respiratory Sensitization:

Not applicable.

Skin Sensitization:

Not applicable.

Germ Cell Mutagenicity:

Not applicable.

Carcinogenicity:

Not applicable.

Reproductive Toxicity:

Not applicable.

Specific Target Organ Toxicity from Single Exposure:

Not applicable.

Specific Target Organ Toxicity from Repeated Exposure:

Not applicable.

Aspiration Hazard:

Not applicable.

Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Not applicable.

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in Soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

SECTION 14: Transportation Information

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

Sizes: 100 mL

UN Number: UN3264

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

Hazard Class: 8

Packing Group: III

Hazard Label(s):

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

Sizes: 100 mL

UN Number: UN3264

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

Hazard Class: 8

Packing Group: III

Hazard Label(s):

14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 100 mL

UN Number: UN3264

Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid, hydrofluoric acid)

Hazard Class: 8

Packing Group: III

Hazard Label(s):

SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

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

Hydrofluoric Acid (CAS # 7664-39-3): "100 lb EPCRA RQ" As Hydrogen fluoride [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): "100 lb TPQ" As Hydrogen fluoride [7664-39-3]
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" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): "1000 lb TPQ" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): 1000 lb EPCRA RQ
Nitric Acid (CAS # 7697-37-2): 1000 lb TPQ

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

Antimony Trioxide (CAS # 1309-64-4): "1000 lb final RQ; 454 kg final RQ" As Antimony trioxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): 1000 lb final RQ; 454 kg final RQ
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "5000 lb final RQ; 2270 kg final RQ" As Ammonium fluoborate [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): 5000 lb final RQ; 2270 kg final RQ
Hydrofluoric Acid (CAS # 7664-39-3): "100 lb final RQ; 45.4 kg final RQ" As Hydrofluoric acid [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): 100 lb final RQ; 45.4 kg final RQ
Nitric Acid (CAS # 7697-37-2): "1000 lb final RQ; 454 kg final RQ" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): 1000 lb final RQ; 454 kg final RQ

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

Antimony Trioxide (CAS # 1309-64-4): "1.0 % de minimis concentration (includes any unique chemical substance that contains Antimony as part of tha chemical's infrastructure, listed under Chemical Category N010)" As Antimony compounds [RR-00585-6]
Antimony Trioxide (CAS # 1309-64-4): 1.0 % de minimis concentration (includes any unique chemical substance that contains Antimony as part of tha chemical's infrastructure, listed under Chemical Category N010)
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)" A Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)
Ammonium Hexafluorogermanate (CAS # 16962-47-3): "1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listin As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]
Ammonium Hexafluorogermanate (CAS # 16962-47-3): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing
Hydrofluoric Acid (CAS # 7664-39-3): "1.0 % de minimis concentration" As Hydrogen fluoride [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): 1.0 % de minimis concentration
Nitric Acid (CAS # 7697-37-2): "1.0 % de minimis concentration" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): 1.0 % de minimis concentration
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): "1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listin As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing
Ammonium Sulfate (CAS # 7783-20-2): "1.0 % de minimis concentration (10% of total aqueo

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15.5. Massachusetts Right-to-Know Substance List

Antimony Trioxide (CAS # 1309-64-4): "Present" As Antimony trioxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): Present
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "Present" As Ammonium fluoborate [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): Present
Molybdenum (CAS # 7439-98-7): Present
Silicon (CAS # 7440-21-3): "Present (dust)" As Silicon [7440-21-3]
Silicon (CAS # 7440-21-3): Present (dust)
Tin (CAS # 7440-31-5): Present
Tungsten (CAS # 7440-33-7): "Present" As Tungsten [7440-33-7]
Tungsten (CAS # 7440-33-7): Present
Hydrofluoric Acid (CAS # 7664-39-3): "Extraordinarily hazardous" As Hydrofluoric acid [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): Extraordinarily hazardous
Nitric Acid (CAS # 7697-37-2): "Extraordinarily hazardous" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous
Ammonium Sulfate (CAS # 7783-20-2): "Present" As Ammonium sulfate [7783-20-2]
Ammonium Sulfate (CAS # 7783-20-2): Present

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15.6. Pennsylvania Right-to-Know Hazardous Substances

Antimony Trioxide (CAS # 1309-64-4): "Environmental hazard" As Antimony compounds [RR-00585-6]
Antimony Trioxide (CAS # 1309-64-4): "Environmental hazard" As Antimony oxide (Sb2O3) [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): "Present" As Antimony compounds [RR-00585-6]
Antimony Trioxide (CAS # 1309-64-4): "Present" As Antimony oxide (Sb2O3) [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): Environmental hazard
Antimony Trioxide (CAS # 1309-64-4): Present
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "Environmental hazard" As Borate(1-), tetrafluoro-, ammonium [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "Present" As Borate(1-), tetrafluoro-, ammonium [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): Environmental hazard
Ammonium Tetrafluoroborate (CAS # 13826-83-0): Present
Molybdenum (CAS # 7439-98-7): Present
Silicon (CAS # 7440-21-3): "Present" As Silicon [7440-21-3]
Silicon (CAS # 7440-21-3): Present
Tin (CAS # 7440-31-5): Present
Tungsten (CAS # 7440-33-7): "Present" As Tungsten [7440-33-7]
Tungsten (CAS # 7440-33-7): Present
Hydrofluoric Acid (CAS # 7664-39-3): "Environmental hazard" As Hydrofluoric acid [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): "Present" As Hydrofluoric acid [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): Environmental hazard
Hydrofluoric Acid (CAS # 7664-39-3): Present
Nitric Acid (CAS # 7697-37-2): "Environmental hazard" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): "Present" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): Environmental hazard
Nitric Acid (CAS # 7697-37-2): Present
Water (CAS # 7732-18-5): "Present" As Ethyl alcohol and water [RR-00802-6]
Water (CAS # 7732-18-5): Present
Ammonium Sulfate (CAS # 7783-20-2): "Environmental hazard" As Sulfuric acid, diammonium salt [7783-20-2]
Ammonium Sulfate (CAS # 7783-20-2): "Present" As Sulfuric acid, diammonium salt [7783-20-2]
Ammonium Sulfate (CAS # 7783-20-2): Environmental hazard
Ammonium Sulfate (CAS # 7783-20-2): Present

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

Antimony Trioxide (CAS # 1309-64-4): "carcinogen" As Antimony trioxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): "sn 0149" As Antimony trioxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): "SN 2223 500 lb TPQ (Category Code N010. Includes any unique chemical substance that contains the named metal as part of that chemical structure)" As Antimony compounds [RR-00585-6]
Antimony Trioxide (CAS # 1309-64-4): "sn 2223" As Antimony compounds [RR-00585-6]
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 500 lb TPQ (Category Code N010. Includes any unique chemical substance that contains the named metal as part of that chemical structure)
Zirconyl Nitrate (CAS # 13826-66-9): "SN 3722 500 lb TPQ (water dissociable, Category Code N511)" As Nitrate compounds [RR-01770-9]
Zirconyl Nitrate (CAS # 13826-66-9): "sn 3722" As Nitrate compounds [RR-01770-9]
Zirconyl Nitrate (CAS # 13826-66-9): sn 3722
Zirconyl Nitrate (CAS # 13826-66-9): SN 3722 500 lb TPQ (water dissociable, Category Code N511)
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "sn 0100" As Ammonium fluoroborate [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "sn 0936" As Fluorides [RR-02792-9]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): sn 0100
Ammonium Tetrafluoroborate (CAS # 13826-83-0): sn 0936
Molybdenum (CAS # 7439-98-7): sn 1309
Silicon (CAS # 7440-21-3): "flammable - third degree" As Silicon [7440-21-3]
Silicon (CAS # 7440-21-3): "sn 3125" As Silicon [7440-21-3]
Silicon (CAS # 7440-21-3): flammable - third degree
Silicon (CAS # 7440-21-3): sn 3125
Tin (CAS # 7440-31-5): flammable - third degree
Tin (CAS # 7440-31-5): sn 1858
Titanium (CAS # 7440-32-6): "flammable - third degree" As Titanium [7440-32-6]
Titanium (CAS # 7440-32-6): "sn 1860" As Titanium [7440-32-6]
Titanium (CAS # 7440-32-6): flammable - third degree
Titanium (CAS # 7440-32-6): sn 1860
Tun

15.8. California Proposition 65

Antimony Trioxide (CAS # 1309-64-4): "0.13 µg/day NSRL (inhalation)" As Antimony(III) oxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): "carcinogen, 10/1/1990" As Antimony(III) oxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): 0.13 µg/day NSRL (inhalation)
Antimony Trioxide (CAS # 1309-64-4): carcinogen, 10/1/1990

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

Hafnium Oxide (CAS # 12055-23-1): "Present" As Hafnium oxide (HfO2) [12055-23-1] (DSL)
Hafnium Oxide (CAS # 12055-23-1): Present (DSL)
Antimony Trioxide (CAS # 1309-64-4): "Present" As Antimony trioxide [1309-64-4] (DSL)
Antimony Trioxide (CAS # 1309-64-4): Present (DSL)
Zirconyl Nitrate (CAS # 13826-66-9): "Present" As Zirconyl nitrate [13826-66-9] (DSL)
Zirconyl Nitrate (CAS # 13826-66-9): Present (DSL)
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "Present" As Ammonium fluoborate [13826-83-0] (DSL)
Ammonium Tetrafluoroborate (CAS # 13826-83-0): Present (DSL)
Molybdenum (CAS # 7439-98-7): Present (DSL)
Rhenium (CAS # 7440-15-5): Present (DSL)
Silicon (CAS # 7440-21-3): "Present" As Silicon [7440-21-3] (DSL)
Silicon (CAS # 7440-21-3): Present (DSL)
Tin (CAS # 7440-31-5): Present (DSL)
Titanium (CAS # 7440-32-6): "Present" As Titanium [7440-32-6] (DSL)
Titanium (CAS # 7440-32-6): Present (DSL)
Tungsten (CAS # 7440-33-7): "Present" As Tungsten [7440-33-7] (DSL)
Tungsten (CAS # 7440-33-7): Present (DSL)
Hydrofluoric Acid (CAS # 7664-39-3): "Present" As Hydrogen fluoride [7664-39-3] (DSL)
Hydrofluoric Acid (CAS # 7664-39-3): Present (DSL)
Nitric Acid (CAS # 7697-37-2): "Present" As Nitric acid [7697-37-2] (DSL)
Nitric Acid (CAS # 7697-37-2): Present (DSL)
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): Present (DSL)
Water (CAS # 7732-18-5): "Present" As Water [7732-18-5] (DSL)
Water (CAS # 7732-18-5): Present (DSL)
Ammonium Sulfate (CAS # 7783-20-2): "Present" As Ammonium sulfate [7783-20-2] (DSL)
Ammonium Sulfate (CAS # 7783-20-2): Present (DSL)

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

All components of this solution are listed as active on the TSCA Inventory or are mixtures (hydrates) of active items listed on the TSCA Inventory.

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Hafnium Oxide (CAS # 12055-23-1): "Present (ACTIVE)" As Hafnium oxide (HfO2) [12055-23-1]
Hafnium Oxide (CAS # 12055-23-1): Present (ACTIVE)
Antimony Trioxide (CAS # 1309-64-4): "Present (ACTIVE)" As Antimony oxide (Sb2O3) [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): Present (ACTIVE)
Zirconyl Nitrate (CAS # 13826-66-9): "Present (ACTIVE)" As Zirconium, bis(nitrato-.kappa.O)oxo- [13826-66-9]
Zirconyl Nitrate (CAS # 13826-66-9): Present (ACTIVE)
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "Present (ACTIVE)" As Borate(1-), tetrafluoro-, ammonium (1:1) [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): Present (ACTIVE)
Molybdenum (CAS # 7439-98-7): Present (ACTIVE)
Rhenium (CAS # 7440-15-5): Present (ACTIVE)
Silicon (CAS # 7440-21-3): "Present (ACTIVE)" As Silicon [7440-21-3]
Silicon (CAS # 7440-21-3): Present (ACTIVE)
Tin (CAS # 7440-31-5): Present (ACTIVE)
Titanium (CAS # 7440-32-6): "Present (ACTIVE)" As Titanium [7440-32-6]
Titanium (CAS # 7440-32-6): Present (ACTIVE)
Tungsten (CAS # 7440-33-7): "Present (ACTIVE)" As Tungsten [7440-33-7]
Tungsten (CAS # 7440-33-7): Present (ACTIVE)
Hydrofluoric Acid (CAS # 7664-39-3): "Present (ACTIVE)" As Hydrofluoric acid [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): Present (ACTIVE)
Nitric Acid (CAS # 7697-37-2): "Present (ACTIVE)" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): Present (ACTIVE)
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): Present (ACTIVE)
Water (CAS # 7732-18-5): "Present (ACTIVE)" As Water [7732-18-5]
Water (CAS # 7732-18-5): Present (ACTIVE)
Ammonium Sulfate (CAS # 7783-20-2): "Present (ACTIVE)" As Sulfuric acid ammonium salt (1:2) [7783-20-2]
Ammonium Sulfate (CAS # 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)

Hafnium Oxide (CAS # 12055-23-1): "235-013-2" As Hafnium dioxide [12055-23-1]
Hafnium Oxide (CAS # 12055-23-1): 235-013-2
Ammonium Hexafluoroniobate (CAS # 12062-13-4): 235-046-2
Antimony Trioxide (CAS # 1309-64-4): "215-175-0" As Diantimony trioxide [1309-64-4]
Antimony Trioxide (CAS # 1309-64-4): 215-175-0
Antimony Trioxide (CAS # 1309-64-4): 215-474-6
Zirconyl Nitrate (CAS # 13826-66-9): "237-529-3" As Zirconium dinitrate oxide [13826-66-9]
Zirconyl Nitrate (CAS # 13826-66-9): 237-529-3
Ammonium Tetrafluoroborate (CAS # 13826-83-0): "237-531-4" As Ammonium tetrafluoroborate [13826-83-0]
Ammonium Tetrafluoroborate (CAS # 13826-83-0): 237-531-4
Ammonium Hexafluorogermanate (CAS # 16962-47-3): 241-037-4
Molybdenum (CAS # 7439-98-7): 231-107-2
Rhenium (CAS # 7440-15-5): 231-124-5
Silicon (CAS # 7440-21-3): "231-130-8" As Silicon [7440-21-3]
Silicon (CAS # 7440-21-3): 231-130-8
Tin (CAS # 7440-31-5): 231-141-8
Titanium (CAS # 7440-32-6): "231-142-3" As Titanium [7440-32-6]
Titanium (CAS # 7440-32-6): 231-142-3
Tungsten (CAS # 7440-33-7): "231-143-9" As Tungsten [7440-33-7]
Tungsten (CAS # 7440-33-7): 231-143-9
Hydrofluoric Acid (CAS # 7664-39-3): "231-634-8" As Hydrogen fluoride [7664-39-3]
Hydrofluoric Acid (CAS # 7664-39-3): 231-634-8
Nitric Acid (CAS # 7697-37-2): "231-714-2" As Nitric acid [7697-37-2]
Nitric Acid (CAS # 7697-37-2): 231-714-2
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): 231-764-5
Ammonium Dihydrogen Phosphate (CAS # 7722-76-1): 233-330-0
Water (CAS # 7732-18-5): "231-791-2" As Water [7732-18-5]
Water (CAS # 7732-18-5): 231-791-2
Ammonium Sulfate (CAS # 7783-20-2): "231-984-1" As Ammonium sulphate [7783-20-2]
Ammonium Sulfate (CAS # 7783-20-2): 231-984-1

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SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

May be corrosive to metals. Causes severe skin burns and eye damage.

Keep only in original container. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. 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. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water.). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Store locked up. Store in corrosive resistant container with a resistant inner liner.

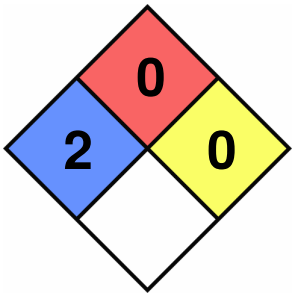
Dispose of contents in accordance with local, state, federal and international regulations.

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.
Biohazardous Infectious Materials Hazard Class: Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

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



16.4. Document Revision

Last Revision Date: 2025-02-02

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.