



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation VeriSpec[®] ICP Calibration Standard 7
100 ppm: Hf, Ir, Sb, Sn, Ta, Ti, Zr

Product Number RV010725

Other Identifying Product Numbers RV010725-100N

1.2. Recommended Use and Restrictions on Use

Calibration Standard

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
Corrosive to the Respiratory Tract	Corrosive		
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
Serious Eye Damage / Eye Irritation	Category 1	H318	P280,P305+P351+P338,P310
Corrosive to Metals	Category 1	H290	P234,P390,P406

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

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

Hazard Number	Hazard Statement
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
	Corrosive to the respiratory tract

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
P234	Keep only in original packaging.
P260	Do not breathe fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
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 or shower.
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 doctor.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.

Storage

Precautionary Number	Precautionary Statement
P405	Store locked up.

Disposal

Precautionary Number	Precautionary Statement
P501	Dispose of contents/container to suitable waste stream in accordance with local, state, federal, and international regulations.

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%
chlorane	Hydrochloric Acid; Muriatic acid	7647-01-0	5.00
water	Water	7732-18-5	0.95
diazanium hexafluorotitanium(2-)	Ammonium Hexafluorotitanate; Ammonium titanium fluoride	16962-40-6	< 0.1
tin(4+) tetrafluoride	Tin (IV) Fluoride; Tetrafluorostannane	7783-62-2	< 0.1
pentafluorotantalum	Tantalum (V) Fluoride	7783-71-3	< 0.1
iridium(III) chloride	Iridium (III) Chloride; iridium trichloride	10025-83-9	< 0.1
oxozirconium(2+) dinitrate hydrate	Zirconyl Nitrate Hydrate	14985-18-3	< 0.1
pentafluoro-[I] ⁵ -stibane hydrofluoride	Fluoroantimonic Acid; Hexafluoroantimonyic acid	16950-06-4	< 0.1
hafnium (IV) oxide	Hafnium Oxide; Hafnium dioxide	12055-23-1	< 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.

Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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 or shower.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage

4.3. Immediate Medical Attention or Special Treatment Needed

Immediately call a poison center or doctor.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Not considered to be a fire or explosion hazard.

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

Not considered to be a fire or explosion hazard.

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5.3. Special Protective Equipment and Precautions for Firefighters

Wear protective clothing and NIOSH-approved 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

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

Store locked up.

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
Fluoroantimonic Acid	16950-06-4	"0.5 mg/m3 TWA (as Sb)" As Antimony compounds [RR-00585-6]
Ammonium Hexafluorotitanate	16962-40-6	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]
Tin (IV) Fluoride	7783-62-2	"2 mg/m3 TWA (except oxides, as Sn)" As Tin, inorganic compounds [RR-00043-1]
Tantalum (V) Fluoride	7783-71-3	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]

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

Chemical Name	CAS Number	Exposure Limit
Hydrochloric Acid	7647-01-0	5 ppm Ceiling; 7 mg/m3 Ceiling

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
Hydrochloric Acid	7647-01-0	2 ppm Ceiling

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

No limits found.

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

Chemical Name	CAS Number	Exposure Limit
Hafnium Oxide	12055-23-1	"0.5 mg/m3 TWA (as Hf)" As Hafnium compounds [RR-03981-6]
Fluoroantimonic Acid	16950-06-4	"0.5 mg/m3 TWA (as Sb)" As Antimony compounds [RR-00585-6]
Ammonium Hexafluorotitanate	16962-40-6	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]
Tin (IV) Fluoride	7783-62-2	"2 mg/m3 TWA (excluding Tin hydride and Indium tin oxide, inhalable particulate matter, as Sn)" As Tin inorganic compounds [RR-00043-1]
Tantalum (V) Fluoride	7783-71-3	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]

8.2. Engineering Controls

No specific controls are needed.

8.3. Individual Protective Measures and Personal Protective Equipment

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Respiratory Protection: Wear protective gloves and eye protection.

Skin Protection: Wear protective gloves and eye protection.

Eye Protection: Wear protective gloves and eye protection.

SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State: Liquid

Color: Data not available.

Odor: Data not available.

Odor Threshold: Data not available.

Melting/Freezing Point: Data not available.

Boiling Point/Range: Data not available.

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: Data not available.

Kinematic Viscosity: Data not available.

Solubility: Data not available.

Vapor Pressure: Data not available.

Evaporation Rate: Data not available.

Relative Density: 1.07

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

Keep only in original packaging.

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10.4. Hazardous Decomposition Products

None identified.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Zirconyl Nitrate Hydrate	14985-18-3	Oral LD50 Rat 2500 mg/kg (Source: NLM_CIP)
Fluoroantimonic Acid	16950-06-4	Oral LD50 Acute Toxicity Estimate 500 mg/kg (ECHA)
Hydrochloric Acid	7647-01-0	Oral LD50 Rat 700 mg/kg (Source: Canada_WHMIS)

Acute Toxicity - Dermal Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Hydrochloric Acid	7647-01-0	Dermal LD50 Rabbit >5010 mg/kg (Source: JAPAN_GHS)

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, dust or mist): 9.9867 mg/L, 4 h(calculated)

Chemical Name	CAS Number	Toxicity
Fluoroantimonic Acid	16950-06-4	Inhalation LC50 Acute Toxicity Estimate 1.5 mg/L 4 h (Source: ECHA)
Hydrochloric Acid	7647-01-0	Inhalation LC50 Acute Toxicity Estimate 0.5 mg/L 4 h (Source: ECHA)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Hydrochloric Acid	7647-01-0	Group 1 (Carcinogenic to Humans) - Monograph 100F [2012]; Monograph 54 [1992] As Acid mists, strong inorganic

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
		No data found.

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U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
No data found.		

11.3 Additional Toxicology Information:

Causes severe skin burns and eye damage. Corrosive to the respiratory tract.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
	No data found.	None	None	

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)

Sizes: 100 mL

UN Number: UN3264

Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, n.o.s. (Hydrochloric 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. (Hydrochloric 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. (hydrochloric acid)

Hazard Class: 8

Packing Group: III

Hazard Label(s):



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SECTION 15: Regulatory Information

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
Hydrochloric Acid	7647-01-0	500 lb TPQ (gas only)	5000 lb EPCRA RQ (gas only)

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

Chemical Name	CAS Number	Regulatory Information
Hydrochloric Acid	7647-01-0	5000 lb final RQ; 2270 kg final RQ

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

Chemical Name	CAS Number	List	Regulatory Information
Fluoroantimonic Acid	16950-06-4	Emission Reporting	"1.0 % de minimis concentration (includes any unique chemical substance that contains Antimony as part of that chemical's infrastructure, listed under Chemical Category N010)" As Antimony compounds [RR-00585-6]
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]
Hydrochloric Acid	7647-01-0	Emission Reporting	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Hydrochloric Acid	7647-01-0	Extraordinarily hazardous

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15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Fluoroantimonic Acid	16950-06-4	"Environmental hazard" As Antimony compounds [RR-00585-6]
Hydrochloric Acid	7647-01-0	Environmental hazard

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

Chemical Name	CAS Number	Regulatory Information
Fluoroantimonic Acid	16950-06-4	"sn 2223" As Antimony compounds [RR-00585-6]
Ammonium Hexafluorotitanate	16962-40-6	"sn 0936" As Fluorides [RR-02792-9]
Hydrochloric Acid	7647-01-0	sn 1012
Tantalum (V) Fluoride	7783-71-3	"sn 0936" As Fluorides [RR-02792-9]

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
Iridium (III) Chloride	10025-83-9	DSL	Present
Hafnium Oxide	12055-23-1	DSL	Present
Zirconyl Nitrate Hydrate	14985-18-3	DSL	"Present" As Zirconyl nitrate [13826-66-9]
Fluoroantimonic Acid	16950-06-4	NDSL	Present
Ammonium Hexafluorotitanate	16962-40-6	NDSL	Present
Hydrochloric Acid	7647-01-0	DSL	Present
Water	7732-18-5	DSL	Present
Tantalum (V) Fluoride	7783-71-3	NDSL	Present

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

Chemical Name	CAS Number	Status
Iridium (III) Chloride	10025-83-9	Present (ACTIVE)
Hafnium Oxide	12055-23-1	Present (ACTIVE)
Zirconyl Nitrate Hydrate	14985-18-3	"Present (ACTIVE)" As Zirconium, bis(nitrato-.kappa.O)oxo- [13826-66-9]
Fluoroantimonic Acid	16950-06-4	Present (ACTIVE)
Ammonium Hexafluorotitanate	16962-40-6	Present (ACTIVE)
Hydrochloric Acid	7647-01-0	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)
Tantalum (V) Fluoride	7783-71-3	Present (ACTIVE)

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
Iridium (III) Chloride	10025-83-9	EINECS	233-044-6
Hafnium Oxide	12055-23-1	EINECS	235-013-2
Zirconyl Nitrate Hydrate	14985-18-3	EINECS	"237-529-3" As Zirconium dinitrate oxide [13826-66-9]
Fluoroantimonic Acid	16950-06-4	EINECS	241-023-8
Ammonium Hexafluorotitanate	16962-40-6	EINECS	241-036-9
Hydrochloric Acid	7647-01-0	EINECS	231-595-7
Water	7732-18-5	EINECS	231-791-2
Tin (IV) Fluoride	7783-62-2	EINECS	232-016-0
Tantalum (V) Fluoride	7783-71-3	EINECS	232-022-3

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

Chemical Name	CAS Number	Status
Iridium (III) Chloride	10025-83-9	Present (MEE Announcement No. 67 of 2020; Index No. 198)
Hafnium Oxide	12055-23-1	Present [11367]
Zirconyl Nitrate Hydrate	14985-18-3	"Present [35643]" As Zirconium oxynitrate [13826-66-9]
Ammonium Hexafluorotitanate	16962-40-6	Present [13288]
Hydrochloric Acid	7647-01-0	Present [37053]
Water	7732-18-5	Present [32224]

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

Chemical Name	CAS Number	List	Status
Iridium (III) Chloride	10025-83-9	Annex 1	Present [KE-21057]
Hafnium Oxide	12055-23-1	Annex 1	Present [KE-18176]
Zirconyl Nitrate Hydrate	14985-18-3	Annex 1	"Present [KE-35629]" As Zirconyl nitrate [13826-66-9]
Fluoroantimonic Acid	16950-06-4	Annex 3	"Present (97-1-176)" As Inorganic antimony compounds [RR-00554-9]
Ammonium Hexafluorotitanate	16962-40-6	Annex 1	Present [KE-01676]
Hydrochloric Acid	7647-01-0	Annex 1	Present [KE-20189]
Water	7732-18-5	Annex 1	Present [KE-35400]
Tin (IV) Fluoride	7783-62-2	Annex 1	Present [KE-33442]
Tantalum (V) Fluoride	7783-71-3	Annex 1	Present [KE-33015]

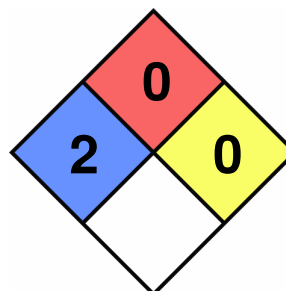
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Hafnium Oxide	12055-23-1	(1)-737
Zirconyl Nitrate Hydrate	14985-18-3	(1)-721
Ammonium Hexafluorotitanate	16962-40-6	(1)-1118
Hydrochloric Acid	7647-01-0	(1)-215
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)
Tin (IV) Fluoride	7783-62-2	(1)-346
Tantalum (V) Fluoride	7783-71-3	(1)-690

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

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





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16.2 Document Revision

Last Revision Date:

2026-05-24

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.