

## Safety Data Sheet

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** VeriSpec<sup>®</sup> Hafnium Standard for ICP 1000 ppm in 2% HCl/HF  
Manufactured and Tested in an ISO 17025/Guide 34 Accredited Facility

**Product Number:** RV010283

**Other Identifying Product Numbers:** RV010283-100N, RV010283-250N, RV010283-30N, RV010283-500N, RV010283-50N

#### 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:** 448 West Fork Drive  
Arlington, TX 76012 USA

**Telephone:** 888-467-4222

#### 1.4. Emergency Telephone Number (24 hr)

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

### SECTION 2: Hazard(s) Identification

#### 2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

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

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

#### 2.2. GHS Label Elements

**Pictograms:**



**Signal Word:** **Warning**



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### Hazard Statements:

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

### Precautionary Statements:

Precautionary Number	Precautionary Statement
P264	Wash arms, hands and face thoroughly after handling.
P280	Wear protective gloves and eye protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (Wash areas of contact with water).
P332+P313	If skin irritation occurs: Get medical attention.
P337+P313	If eye irritation persists: Get medical attention.
P362	Take off contaminated clothing and wash it before reuse.

### 2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

### 2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H <sub>2</sub> O	18.01 g/mol	7732-18-5	97.38%
Hydrochloric Acid	HCl	36.46 g/mol	7647-01-0	2.00%
Hydrofluoric Acid	HF	20.00 g/mol	7664-39-3	0.50%
Hafnium Oxide	HfO <sub>2</sub>	210.48 g/mol	12055-23-1	0.12%

## 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.



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

**Skin Contact:** IF ON SKIN: Wash with plenty of soap and water.

**Ingestion:** No action required to be taken. If necessary, dilute with water.

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

May cause mild irritation to areas of contact.

### 4.3. Medical Attention or Special Treatment Needed

Specific treatment (Wash areas of contact with water).

## 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

Not considered to be a fire or explosion hazard.

### 5.3. Special Protective Equipment 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

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/m <sup>3</sup> TWA (as Hf)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrochloric Acid (7647-01-0)	TLV-Ceiling	USA	2 ppm Ceiling	ACGIH - Threshold Limit Values - Ceilings (TLV-C)
Hydrochloric Acid (7647-01-0)	PEL-Ceiling	USA	5 ppm Ceiling 7 mg/m <sup>3</sup> Ceiling	U.S. - OSHA - Final PELs - Ceiling Limits
Hydrofluoric Acid (7664-39-3)	TWA	USA	3 ppm TWA (as F)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TWA	USA	2.5 mg/m <sup>3</sup> TWA (as F) 2.5 mg/m <sup>3</sup> TWA (dust)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Hydrofluoric Acid (7664-39-3)	TLV-Ceiling	USA	2 ppm Ceiling (as F)	ACGIH - Threshold Limit Values - Ceilings (TLV-C)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	2.5 mg/m <sup>3</sup> TWA (as F)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrofluoric Acid (7664-39-3)	TLV-TWA	USA	0.5 ppm TWA (as F)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

#### 8.2. Exposure Controls

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

**Respiratory Protection:** No specific controls are needed. Normal room ventilation is adequate.

**Skin Protection:** Wear protective gloves and eye protection.

**Eye Protection:** Wear protective gloves and eye protection.

#### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection.



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### SECTION 9: Physical and Chemical Properties

#### 9.1. Basic Physical and Chemical Properties

**Appearance:** Data not available.

**Physical State:** Liquid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** Data not available.

**Melting/Freezing Point:** Data not available.

**Initial Boiling Point /Range:** Data not available.

**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:** 1.00

**Solubility:** Data not available.

**Partition Coefficient (n-Octanol/Water):** Data not available.

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

### SECTION 10: Stability and Reactivity

#### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

#### 10.2. Possibility of Hazardous Reactions

Data not available.

#### 10.3. Conditions to Avoid and Incompatible Materials

Protect from freezing and physical damage.

#### 10.4. Hazardous Decomposition Products

May emit irritating fumes when heated to decomposition.



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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:**

Data not available.

**Skin Corrosion and Irritation:**

Causes skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

**Serious Eye Damage and Irritation:**

Causes serious eye irritation. Wash arms, hands and face thoroughly after handling. 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. If eye irritation persists: Get medical attention.

**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.



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### 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)

Not regulated according to DOT Regulations.



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Not regulated according to IATA Regulations.

### 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

Hydrochloric Acid (CAS # 7647-01-0): 500 lb TPQ (gas only)

Hydrochloric Acid (CAS # 7647-01-0): 5000 lb EPCRA RQ (gas only)

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

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

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

Hydrochloric Acid (CAS # 7647-01-0): 5000 lb final RQ; 2270 kg final RQ

Hydrofluoric Acid (CAS # 7664-39-3): 100 lb final RQ; 45.4 kg final RQ

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

Hydrochloric Acid (CAS # 7647-01-0): 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

Hydrofluoric Acid (CAS # 7664-39-3): 1.0 % de minimis concentration

#### 15.5. Massachusetts Right-to-Know Substance List

Hydrochloric Acid (CAS # 7647-01-0): Extraordinarily hazardous

Hydrofluoric Acid (CAS # 7664-39-3): Extraordinarily hazardous

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

Hydrochloric Acid (CAS # 7647-01-0): Environmental hazard

Hydrochloric Acid (CAS # 7647-01-0): Present

Hydrofluoric Acid (CAS # 7664-39-3): Environmental hazard

Hydrofluoric Acid (CAS # 7664-39-3): Present

Water (CAS # 7732-18-5): Present





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

Hydrochloric Acid (CAS # 7647-01-0): corrosive

Hydrochloric Acid (CAS # 7647-01-0): sn 1012

Hydrochloric Acid (CAS # 7647-01-0): SN 1012 500 lb TPQ (>=37% concentration); SN 2909 500 lb TPQ (Hydrogen chloride gas only)

Hydrofluoric Acid (CAS # 7664-39-3): corrosive

Hydrofluoric Acid (CAS # 7664-39-3): sn 0936

Hydrofluoric Acid (CAS # 7664-39-3): sn 3759

Hydrofluoric Acid (CAS # 7664-39-3): SN 3759 100 lb TPQ; SN 1014 500 lb TPQ (Hydrogen fluoride gas only)

### 15.8. California Proposition 65

Not listed.

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

Hafnium Oxide (CAS # 12055-23-1): Present (DSL)

Hydrochloric Acid (CAS # 7647-01-0): Present (DSL)

Hydrofluoric Acid (CAS # 7664-39-3): Present (DSL)

Water (CAS # 7732-18-5): Present (DSL)

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

Hafnium Oxide (CAS # 12055-23-1): Present

Hydrochloric Acid (CAS # 7647-01-0): Present [T]

Hydrofluoric Acid (CAS # 7664-39-3): Present [T]

Water (CAS # 7732-18-5): Present

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

Not listed.

## SECTION 16: Other Information

### 16.1. Full Text of Hazard Statements and Precautionary Statements

Causes skin irritation. Causes serious eye irritation.

Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection.

IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Specific treatment (Wash areas of contact with water). If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing and wash it before reuse.



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### 16.2. Miscellaneous Hazard Classes

**Canadian Carcinogenicity Hazard Class:** Not Applicable.

**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.  
Not Applicable.

### 16.3. National Fire Protection Association (NFPA) Rating

**Health:** 1  
**Flammability:** 0  
**Reactivity:** 0  
**Special Hazard:**





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### 16.4. Document Revision

**Last Revision Date:** 9/7/2016

### 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.