

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** Hafnium ICP Standard, 1000 ppm Hf in 3% HNO<sub>3</sub>

**Product Number:** PHF1KN

**Other Identifying Product Numbers:** PHF1KN-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 immediately).                                                               |
| 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 <sub>2</sub> O | 18.01 g/mol      | 7732-18-5  | 96.74   |
| Nitric Acid       | HNO <sub>3</sub> | 63.01 g/mol      | 7697-37-2  | 3.09    |
| Hafnium Oxide     | HfO <sub>2</sub> | 210.48 g/mol     | 12055-23-1 | 0.12    |
| Hydrofluoric Acid | HF               | 20.00 g/mol      | 7664-39-3  | < 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 and temporary discoloration of skin.

**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. Mildly corrosive liquid. Avoid contact with skin, eyes, and clothing. May cause mild irritation. If swallowed, do not induce vomiting. Dilute with water and call a physician. Wash areas of contact with plenty of water. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause irritation and temporary discoloration of skin.

### 4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). 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 any means suitable for extinguishing surrounding fire.

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

### 5.3. Special Protective Equipment 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

Absorb with suitable inert material (vermiculite, dry sand, etc) and place in a chemical waste container for proper disposal. Do not flush to sewer. 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/m <sup>3</sup> TWA (as Hf)" As<br>Hafnium compounds<br>[RR-03981-6]                                                     | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA) |
| Hafnium Oxide (12055-23-1)    | TLV-TWA     | USA     | 0.5 mg/m <sup>3</sup> TWA (as Hf)                                                                                               | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA) |
| Hydrofluoric Acid (7664-39-3) | TWA         | USA     | "3 ppm TWA (as F)" As<br>Hydrogen fluoride<br>[7664-39-3];<br>"2.5 mg/m <sup>3</sup> TWA (as F)" As<br>Fluorides [RR-02792-9]   | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)          |
| Hydrofluoric Acid (7664-39-3) | TLV-Ceiling | USA     | "2 ppm Ceiling (as F)" As<br>Hydrogen fluoride<br>[7664-39-3]                                                                   | ACGIH - Threshold Limit Values -<br>Ceilings (TLV-C)                 |
| Hydrofluoric Acid (7664-39-3) | TLV-TWA     | USA     | "0.5 ppm TWA (as F)" As<br>Hydrogen fluoride<br>[7664-39-3];<br>"2.5 mg/m <sup>3</sup> TWA (as F)" As<br>Fluorides [RR-02792-9] | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA) |
| Hydrofluoric Acid (7664-39-3) | TLV-TWA     | USA     | "0.5 ppm TWA (as F)" As<br>Hydrogen fluoride<br>[7664-39-3]                                                                     | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA) |
| Hydrofluoric Acid (7664-39-3) | TWA         | USA     | "3 ppm TWA (as F)" As<br>Hydrogen fluoride<br>[7664-39-3]                                                                       | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)          |
| Hydrofluoric Acid (7664-39-3) | TLV-Ceiling | USA     | "2 ppm Ceiling (as F)" As<br>Hydrogen fluoride<br>[7664-39-3]                                                                   | ACGIH - Threshold Limit Values -<br>Ceilings (TLV-C)                 |
| Hydrofluoric Acid (7664-39-3) | TLV-TWA     | USA     | 0.5 ppm TWA (as F)                                                                                                              | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA) |
| Hydrofluoric Acid (7664-39-3) | TLV-Ceiling | USA     | 2 ppm Ceiling (as F)                                                                                                            | ACGIH - Threshold Limit Values -<br>Ceilings (TLV-C)                 |
| Hydrofluoric Acid (7664-39-3) | TWA         | USA     | 3 ppm TWA (as F)                                                                                                                | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)          |
| Hydrofluoric Acid (7664-39-3) | TWA         | USA     | 2.5 mg/m <sup>3</sup> TWA (as F)                                                                                                | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)          |

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|                               |             |     |                                                                    |                                                                        |
|-------------------------------|-------------|-----|--------------------------------------------------------------------|------------------------------------------------------------------------|
| 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-Ceiling | USA | "2 ppm Ceiling (as F)" As Hydrogen fluoride<br>[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<br>[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<br>[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<br>[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<br>[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<br>[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<br>[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<br>[7697-37-2]                          | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Nitric Acid (7697-37-2)       | TWA         | USA | "2 ppm TWA; 5 mg/m <sup>3</sup> TWA" As Nitric acid<br>[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<br>[7697-37-2]                          | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Nitric Acid (7697-37-2)       | TWA         | USA | "2 ppm TWA; 5 mg/m <sup>3</sup> TWA" As Nitric acid<br>[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<br>[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/m <sup>3</sup> TWA                                 | U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)               |

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|                         |          |     |                                                                       |                                                                           |
|-------------------------|----------|-----|-----------------------------------------------------------------------|---------------------------------------------------------------------------|
| Nitric Acid (7697-37-2) | TWA      | USA | "2 ppm TWA; 5 mg/m <sup>3</sup><br>TWA" As Nitric acid<br>[7697-37-2] | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)               |
| Nitric Acid (7697-37-2) | TLV-TWA  | USA | "2 ppm TWA" As Nitric acid<br>[7697-37-2]                             | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA)      |
| Nitric Acid (7697-37-2) | TLV-STEL | USA | "4 ppm STEL" As Nitric acid<br>[7697-37-2]                            | ACGIH - Threshold Limit Values - Short<br>Term Exposure Limits (TLV-STEL) |
| Nitric Acid (7697-37-2) | TWA      | USA | "2 ppm TWA; 5 mg/m <sup>3</sup><br>TWA" As Nitric acid<br>[7697-37-2] | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)               |
| Nitric Acid (7697-37-2) | TLV-STEL | USA | "4 ppm STEL" As Nitric acid<br>[7697-37-2]                            | ACGIH - Threshold Limit Values - Short<br>Term Exposure Limits (TLV-STEL) |
| Nitric Acid (7697-37-2) | TLV-TWA  | USA | "2 ppm TWA" As Nitric acid<br>[7697-37-2]                             | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA)      |
| Nitric Acid (7697-37-2) | TWA      | USA | "2 ppm TWA; 5 mg/m <sup>3</sup><br>TWA" As Nitric acid<br>[7697-37-2] | U.S. - OSHA - Final PELs - Time<br>Weighted Averages (TWAs)               |
| Nitric Acid (7697-37-2) | TLV-TWA  | USA | "2 ppm TWA" As Nitric acid<br>[7697-37-2]                             | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA)      |
| Nitric Acid (7697-37-2) | TLV-STEL | USA | "4 ppm STEL" As Nitric acid<br>[7697-37-2]                            | ACGIH - Threshold Limit Values - Short<br>Term Exposure Limits (TLV-STEL) |
| Nitric Acid (7697-37-2) | TLV-TWA  | USA | "2 ppm TWA" As Nitric acid<br>[7697-37-2]                             | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA)      |
| Nitric Acid (7697-37-2) | TLV-STEL | USA | "4 ppm STEL" As Nitric acid<br>[7697-37-2]                            | ACGIH - Threshold Limit Values - Short<br>Term Exposure Limits (TLV-STEL) |
| Nitric Acid (7697-37-2) | TWA      | USA | "2 ppm TWA; 5 mg/m <sup>3</sup><br>TWA" As Nitric acid<br>[7697-37-2] | U.S. - OSHA - Final PELs - Time<br>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.

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## 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:** Data not available.

**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:** 1.02

**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, Carbides, Hydrogen Sulfide, Turpentine and combustible organics.

### 10.4. Hazardous Decomposition Products

Will not occur.



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### SECTION 11: Toxicological Information

#### 11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**

Not 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.

**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 immediately). 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.

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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)**

**Sizes:** 100 mL

**UN Number:** UN3264

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

**Hazard Class:** 8

**Packing Group:** III

**Hazard Label(s):**



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### 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)

**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)

**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



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

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)

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

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

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

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

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

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

Hydrofluoric Acid (CAS # 7664-39-3): "corrosive" As Hydrogen fluoride [7664-39-3]  
Hydrofluoric Acid (CAS # 7664-39-3): "SN 3759 100 lb TPQ; SN 1014 100 lb TPQ" As Hydrogen fluoride [7664-39-3]  
Hydrofluoric Acid (CAS # 7664-39-3): "sn 3759" As Hydrogen fluoride [7664-39-3]  
Hydrofluoric Acid (CAS # 7664-39-3): "sn 3759" As Hydrogen fluoride [7664-39-3];  
"sn 0936" As Fluorides [RR-02792-9]  
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 100 lb TPQ  
Nitric Acid (CAS # 7697-37-2): "corrosive; reactive - second degree" As Nitric acid [7697-37-2]  
Nitric Acid (CAS # 7697-37-2): "SN 1356 500 lb TPQ" As Nitric acid [7697-37-2]  
Nitric Acid (CAS # 7697-37-2): "sn 1356" As Nitric acid [7697-37-2]  
Nitric Acid (CAS # 7697-37-2): corrosive; reactive - second degree  
Nitric Acid (CAS # 7697-37-2): sn 1356  
Nitric Acid (CAS # 7697-37-2): SN 1356 500 lb TPQ  
Nitric Acid (CAS # 7697-37-2): sn 3722  
Nitric Acid (CAS # 7697-37-2): SN 3722 500 lb TPQ (water dissociable, Category Code N511)

### 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" As Hafnium oxide (HfO<sub>2</sub>) [12055-23-1] (DSL)  
Hafnium Oxide (CAS # 12055-23-1): 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)  
Water (CAS # 7732-18-5): "Present" As Water [7732-18-5] (DSL)  
Water (CAS # 7732-18-5): 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 (HfO<sub>2</sub>) [12055-23-1]

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

Water (CAS # 7732-18-5): "Present (ACTIVE)" As Water [7732-18-5]

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

### **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

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

Water (CAS # 7732-18-5): "231-791-2" As Water [7732-18-5]

Water (CAS # 7732-18-5): 231-791-2

## **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 immediately). 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.

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### 16.2. Miscellaneous Hazard Classes

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

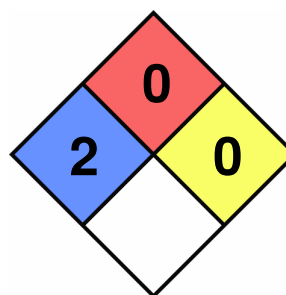
**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

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

**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:** 2025-02-01

### 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.