

# Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

## SECTION 1: Identification

### 1.1. Product Identifier

**Trade Name or Designation:** Multi-Ion Standard  
100 ppm each  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{NH}_4^+$ ,  $\text{Li}^+$ ,  $\text{K}^+$  for Ion Chromatography

**Product Number:** MSTD200

**Other Identifying Product Numbers:** MSTD200-4

### 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.

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

### 2.2. GHS Label Elements

**Pictograms:** None Required.

**Signal Word:** None Required.

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**Hazard Statements:** None Required.

**Precautionary Statements:** None Required.

### 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  | 99.75   |
| Magnesium Chloride         | MgCl <sub>2</sub>                    | 95.21 g/mol      | 7786-30-3  | < 0.1   |
| Lithium Chloride           | LiCl                                 | 42.39 g/mol      | 7447-41-8  | < 0.1   |
| Calcium Chloride Dihydrate | CaCl <sub>2</sub> ·2H <sub>2</sub> O | 147.02 g/mol     | 10035-04-8 | < 0.1   |
| Ammonium Chloride          | NH <sub>4</sub> Cl                   | 53.49 g/mol      | 12125-02-9 | < 0.1   |
| Sodium Chloride            | NaCl                                 | 58.44 g/mol      | 7647-14-5  | < 0.1   |
| Potassium Chloride         | KCl                                  | 74.55 g/mol      | 7447-40-7  | < 0.1   |

## SECTION 4: First-Aid Measures

### 4.1. General First Aid Information

**Eye Contact:** May cause irritation, redness, pain, and tearing.

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

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

**Ingestion:** Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

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

May cause irritation to the eyes and skin. Wash areas of contact with water. Call a physician if irritation develops. Does not present any significant health hazards. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause slight irritation.

### 4.3. Medical Attention or Special Treatment Needed

Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Wash areas of contact with soap and 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.

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## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Use any means suitable for extinguishing surrounding fire.

### 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

Use protective clothing and breathing equipment appropriate for the surrounding fire.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

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

### 6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and treat as normal refuse. Small amounts of the liquid may be flushed to the drain with excess water. Always dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

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

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

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### SECTION 8: Exposure Controls / Personal Protection

#### 8.1 Control Parameters

| Chemical Name                  | Limit Type | Country | Exposure Limit   | Information Source   |
|--------------------------------|------------|---------|--|--|
| Ammonium Chloride (12125-02-9) | TLV-TWA    | USA     | 10 mg/m <sup>3</sup> TWA (fume)                                      | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Ammonium Chloride (12125-02-9) | TLV-STEL   | USA     | 20 mg/m <sup>3</sup> STEL (fume)                                     | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-STEL   | USA     | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride [12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-TWA    | USA     | "10 mg/m <sup>3</sup> TWA (fume)" As Ammonium chloride [12125-02-9]  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Ammonium Chloride (12125-02-9) | TLV-TWA    | USA     | "10 mg/m <sup>3</sup> TWA (fume)" As Ammonium chloride [12125-02-9]  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Ammonium Chloride (12125-02-9) | TLV-STEL   | USA     | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride [12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-TWA    | USA     | "10 mg/m <sup>3</sup> TWA (fume)" As Ammonium chloride [12125-02-9]  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Ammonium Chloride (12125-02-9) | TLV-STEL   | USA     | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride [12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-TWA    | USA     | "10 mg/m <sup>3</sup> TWA (fume)" As Ammonium chloride [12125-02-9]  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Ammonium Chloride (12125-02-9) | TLV-STEL   | USA     | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride [12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-TWA    | USA     | "10 mg/m <sup>3</sup> TWA (fume)" As Ammonium chloride [12125-02-9]  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
| Ammonium Chloride (12125-02-9) | TLV-STEL   | USA     | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride [12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |

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|                                |          |     |   |  |
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| Ammonium Chloride (12125-02-9) | TLV-STEL | USA | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride<br>[12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-TWA  | USA | "10 mg/m <sup>3</sup> TWA (fume)" As Ammonium chloride<br>[12125-02-9]  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)      |
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| Ammonium Chloride (12125-02-9) | TLV-STEL | USA | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride<br>[12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
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| Ammonium Chloride (12125-02-9) | TLV-STEL | USA | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride<br>[12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |
| Ammonium Chloride (12125-02-9) | TLV-STEL | USA | "20 mg/m <sup>3</sup> STEL (fume)" As Ammonium chloride<br>[12125-02-9] | ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL) |



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|                                |         |     |   |  |
|--------------------------------|---------|-----|---|--|
| Ammonium Chloride (12125-02-9) | TLV-TWA | USA | "10 mg/m <sup>3</sup> TWA (fume)" As<br>Ammonium chloride<br>[12125-02-9] | ACGIH - Threshold Limit Values - Time<br>Weighted Averages (TLV-TWA) |
|--------------------------------|---------|-----|---|--|

### 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:** Chemical resistant gloves.

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

### 8.3. Personal Protective Equipment

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:** Data not available.

**Melting/Freezing Point:** 0.0°C

**Initial Boiling Point/Range:** 100°C - 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:** 1.01

**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.

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### 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

Strong oxidizing agents, Lithium, Bromine Trifluoride.

#### 10.4. Hazardous Decomposition Products

Will not occur.

### 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:

LD50, Oral, Rat: (Sodium Chloride) 3000 mg/kg, details of toxic effects not reported other than lethal dose value. LD50, Dermal, Rabbit: (Sodium Chloride) >10 gm/kg. LD50, Intraperitoneal, Mouse: (Calcium Chloride Dihydrate) 20,500 mg/kg, details of toxic effects not reported other than lethal dose value. LD50, Oral, Rat: 1650 mg/kg (Ammonium Chloride), details of toxic effects not reported other than lethal dose value. LD50, Oral, Rat: 8100 mg/kg (Magnesium Chloride Hexahydrate), details of toxic effects not reported other than lethal dose value. LD50, Oral, Rat: (Lithium Chloride) 526 mg/kg, details of toxic effects not reported other than lethal dose value. Lithium Chloride is investigated as a tumorigen, mutagen and reproductive effector. LD50, Oral, Rat: (Potassium Chloride) 2600 mg/kg; Irritation: eye, rabbit (500mg/24 hr mild).

##### Skin Corrosion and Irritation:

Not applicable.

##### Serious Eye Damage and Irritation:

Not applicable.

##### Respiratory Sensitization:

Not applicable.

##### Skin Sensitization:

Not applicable.

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**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.



## **Safety Data Sheet**

### **SECTION 14: Transportation Information**

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

Not regulated according to DOT Regulations.

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

Not regulated according to IATA Dangerous Goods Regulations.

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

Not regulated according to TDG Regulations.

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### 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

Not listed.

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

Ammonium Chloride (CAS # 12125-02-9): "5000 lb final RQ; 2270 kg final RQ" As Ammonium chloride [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): 5000 lb final RQ; 2270 kg final RQ

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

Ammonium Chloride (CAS # 12125-02-9): "1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)" As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]

Ammonium Chloride (CAS # 12125-02-9): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)

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

Ammonium Chloride (CAS # 12125-02-9): "Present (including fume)" As Ammonium chloride [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): Present (including fume)

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

Ammonium Chloride (CAS # 12125-02-9): "Environmental hazard" As Ammonium chloride ((NH<sub>4</sub>)Cl) [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): "Present" As Ammonium chloride ((NH<sub>4</sub>)Cl) [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): Environmental hazard

Ammonium Chloride (CAS # 12125-02-9): Present

Water (CAS # 7732-18-5): "Present" As Ethyl alcohol and water [RR-00802-6]

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

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

Ammonium Chloride (CAS # 12125-02-9): "sn 0093" As Ammonium chloride [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): sn 0093

#### 15.8. California Proposition 65

Not listed.

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

Calcium Chloride Dihydrate (CAS # 10035-04-8): "Present" As Calcium chloride [10043-52-4] (DSL)

Calcium Chloride Dihydrate (CAS # 10035-04-8): Present (DSL)

Ammonium Chloride (CAS # 12125-02-9): "Present" As Ammonium chloride [12125-02-9] (DSL)

Ammonium Chloride (CAS # 12125-02-9): Present (DSL)

Potassium Chloride (CAS # 7447-40-7): "Present" As Potassium chloride [7447-40-7] (DSL)

Potassium Chloride (CAS # 7447-40-7): Present (DSL)

Lithium Chloride (CAS # 7447-41-8): Present (DSL)

Sodium Chloride (CAS # 7647-14-5): "Present" As Sodium chloride [7647-14-5] (DSL)

Sodium Chloride (CAS # 7647-14-5): Present (DSL)

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

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

Magnesium Chloride (CAS # 7786-30-3): "Present" As Magnesium chloride [7786-30-3] (DSL)

Magnesium Chloride (CAS # 7786-30-3): 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.**

Calcium Chloride Dihydrate (CAS # 10035-04-8): "Present (ACTIVE)" As Calcium chloride (CaCl<sub>2</sub>) [10043-52-4]

Calcium Chloride Dihydrate (CAS # 10035-04-8): Present (ACTIVE)

Ammonium Chloride (CAS # 12125-02-9): "Present (ACTIVE)" As Ammonium chloride [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): Present (ACTIVE)

Potassium Chloride (CAS # 7447-40-7): "Present (ACTIVE)" As Potassium chloride (KCl) [7447-40-7]

Potassium Chloride (CAS # 7447-40-7): Present (ACTIVE)

Lithium Chloride (CAS # 7447-41-8): Present (ACTIVE)

Sodium Chloride (CAS # 7647-14-5): "Present (ACTIVE)" As Sodium chloride (NaCl) [7647-14-5]

Sodium Chloride (CAS # 7647-14-5): Present (ACTIVE)

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

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

Magnesium Chloride (CAS # 7786-30-3): "Present (ACTIVE)" As Magnesium chloride (MgCl<sub>2</sub>) [7786-30-3]

Magnesium Chloride (CAS # 7786-30-3): 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)

Calcium Chloride Dihydrate (CAS # 10035-04-8): "233-140-8" As Calcium chloride [10043-52-4]

Calcium Chloride Dihydrate (CAS # 10035-04-8): 233-140-8

Ammonium Chloride (CAS # 12125-02-9): "235-186-4" As Ammonium chloride [12125-02-9]

Ammonium Chloride (CAS # 12125-02-9): 235-186-4

Potassium Chloride (CAS # 7447-40-7): "231-211-8" As Potassium chloride [7447-40-7]

Potassium Chloride (CAS # 7447-40-7): 231-211-8

Lithium Chloride (CAS # 7447-41-8): 231-212-3

Sodium Chloride (CAS # 7647-14-5): "231-598-3" As Sodium chloride [7647-14-5]

Sodium Chloride (CAS # 7647-14-5): 231-598-3

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

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

Magnesium Chloride (CAS # 7786-30-3): "232-094-6" As Magnesium chloride [7786-30-3]

Magnesium Chloride (CAS # 7786-30-3): 232-094-6

## SECTION 16: Other Information

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

### 16.2. Miscellaneous Hazard Classes

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

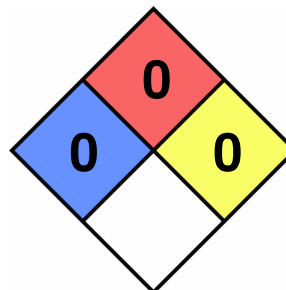
**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

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

**Biohazardous Infectious Materials Hazard Class:** Not Applicable.

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

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



## Safety Data Sheet

### 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.