



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Mixed Anion Standard, 1000 ppm F, Cl, NO₂, NO₃, Br, PO₄, SO₄

Product Number RICMIX45

Other Identifying Product Numbers RICMIX45-100A, RICMIX45-500A

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 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

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

2.2. GHS Label Elements

Pictograms: None Required.

Signal Word: None Required.

Hazard Statements: None Required.

Precautionary Statements: None Required.

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%
water	Water	7732-18-5	98.85
sodium fluoride	Sodium Fluoride	7681-49-4	0.22
potassium nitrite	Potassium Nitrite; Nitrous acid, potassium salt (1:1)	7758-09-0	0.19
potassium nitrate	Potassium Nitrate; Nitric acid potassium salt (1:1)	7757-79-1	0.16
sodium chloride	Sodium Chloride; Salt	7647-14-5	0.16
disodium sulfate	Sodium Sulfate Anhydrous	7757-82-6	0.15
potassium dihydrogen phosphate	Potassium Dihydrogen Phosphate; Potassium Phosphate Monobasic; Phosphoric acid, potassium salt (1:1)	7778-77-0	0.14
sodium bromide	Sodium Bromide	7647-15-6	0.13

SECTION 4: First-Aid Measures

4.1. Description of Necessary Measures

Eye Contact: May cause slight irritation.

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

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

Skin Contact: May cause slight irritation.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Handle this and all chemicals with care. May cause irritation to areas of contact. Wash areas of contact with water. EYE CONTACT: May cause slight irritation. SKIN CONTACT: May cause slight irritation.

4.3. Immediate Medical Attention or Special Treatment Needed

Not expected to require special treatment.

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 in a Fire

Not considered to be a fire or explosion hazard.

5.3. Special Protective Equipment and Precautions 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 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.

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
Sodium Fluoride	7681-49-4	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]

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

No limits found.

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)

No limits found.

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
Sodium Fluoride	7681-49-4	"2.5 mg/m3 TWA (as F)" As Fluorides [RR-02792-9]

8.2. Engineering Controls

No specific controls are needed. Normal room ventilation is adequate.

8.3. Individual Protective Measures and Personal Protective Equipment

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

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SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Physical State:	liquid
Color:	Colorless
Odor:	Odorless
Odor Threshold:	Data not available.
Melting/Freezing Point:	0.0°C
Boiling Point/Range:	100°C
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:	Miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.01
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

None identified.

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 acutely toxic.

Chemical Name	CAS Number	Toxicity
Sodium Chloride	7647-14-5	Oral LD50 Rat 3550 mg/kg (Source: ECHA)
Sodium Bromide	7647-15-6	Oral LD50 Rat 3500 mg/kg (Source: NLM_CIP)
Sodium Fluoride	7681-49-4	Oral LD50 Rat 52 mg/kg (Source: NLM_CIP)
Potassium Nitrate	7757-79-1	Oral LD50 Rat >2000 mg/kg (no deaths occurred, Source: ECHA)
Sodium Sulfate Anhydrous	7757-82-6	Oral LD50 Rat >10000 mg/kg (no deaths occurred, Source: OECD_SIDS)
Potassium Nitrite	7758-09-0	Oral LD50 Rat 200 mg/kg (Source: ECHA)
Potassium Dihydrogen Phosphate	7778-77-0	Oral LD50 Rat 3200 mg/kg (Source: NLM_HSDB)

Acute Toxicity - Dermal Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Sodium Chloride	7647-14-5	Dermal LD50 Rabbit >10000 mg/kg (no deaths occurred, Source: ECHA)
Sodium Fluoride	7681-49-4	Dermal LD50 Rabbit >2000 mg/kg (Source: Canada_WHMIS)
Potassium Nitrate	7757-79-1	Dermal LD50 Rat >5000 mg/kg (no deaths occurred, Source: ECHA)
Potassium Nitrite	7758-09-0	Dermal LD50 Rat >5000 mg/kg (no deaths occurred, Source: ECHA)

Acute Toxicity - Inhalation Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Sodium Chloride	7647-14-5	Inhalation LC50 Rat >42 mg/L 1 h (no deaths occurred, aerosol, Source: ECHA_API)
Sodium Fluoride	7681-49-4	Inhalation LC50 Rat 1 mg/L 4 h (Source: Canada_WHMIS)
Potassium Nitrate	7757-79-1	Inhalation LC50 Rat >0.527 mg/L 4 h (no deaths occurred, dust, Source: ECHA_API)
Sodium Sulfate Anhydrous	7757-82-6	Inhalation LC50 Rat >2.4 mg/L 4 h (no deaths occurred, dust, Source: ECHA_API)
Potassium Nitrite	7758-09-0	Inhalation LC50 Mouse 85000 mg/m3 2 h (dust, Source: ECHA_API)
Potassium Dihydrogen Phosphate	7778-77-0	Inhalation LC50 Rat >0.83 mg/L 4 h (no deaths occurred, dust, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

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Chemical Name	CAS Number	Classification
Sodium Fluoride	7681-49-4	Group 3 (Not Classified) - Supplement 7 [1987] (listed under Fluorides inorganic used in drinking-water)

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
Sodium Fluoride	7681-49-4	Male Rat - Equivocal Evidence; Female Rat - No Evidence; Male Mice - No Evidence; Female Mice - No Evidence (TR-393)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
No data found.		

11.3 Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

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Chemical Name	CAS Number	Species	Exposure	Toxicity
Sodium Bromide	7647-15-6	Avian	Acute Oral	LD50 <i>Colinus virginianus</i> >2250 mg/kg (IUCLID)
Sodium Bromide	7647-15-6	Avian	Dietary	LC50 5 Days <i>Anas platyrhynchos</i> >5633 ppm [Diet] (IUCLID); LC50 5 Days <i>Colinus virginianus</i> >5633 ppm [Diet] (IUCLID); NOEC 5 Days <i>Anas platyrhynchos</i> 1784 ppm [Diet] (IUCLID); NOEC 5 Days <i>Colinus virginianus</i> 1784 ppm [Diet] (IUCLID)
Sodium Chloride	7647-14-5	Earthworm	Acute	LC50 48 h <i>Eisenia foetida</i> 0.1 - 1 mg/cm ² [filter paper] (IUCLID)
Sodium Bromide	7647-15-6	Freshwater Algae	Acute	EC50 96 h <i>Scenedesmus pannonicus</i> 5800 - 24000 mg/L (IUCLID)
Sodium Fluoride	7681-49-4	Freshwater Algae	Acute	EC50 96 h <i>Pseudokirchneriella subcapitata</i> 272 mg/L (IUCLID); EC50 72 h <i>Desmodesmus subspicatus</i> 850 mg/L [static] (EPA)
Sodium Chloride	7647-14-5	Freshwater Fish	Acute	LC50 96 h <i>Lepomis macrochirus</i> 5560 - 6080 mg/L [flow-through] (EPA); LC50 96 h <i>Lepomis macrochirus</i> 12946 mg/L [static] (EPA); LC50 96 h <i>Pimephales promelas</i> 6020 - 7070 mg/L [static] (EPA); LC50 96 h <i>Pimephales promelas</i> 7050 mg/L [semi-static] (EPA); LC50 96 h <i>Pimephales promelas</i> 6420 - 6700 mg/L [static] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> 4747 - 7824 mg/L [flow-through] (EPA)
Sodium Bromide	7647-15-6	Freshwater Fish	Acute	LC50 96 h <i>Oryzias latipes</i> 24000 - 96000 mg/L [flow-through] (IUCLID); LC50 96 h <i>Oryzias latipes</i> 24000 mg/L [semi-static] (EPA); LC50 96 h <i>Poecilia reticulata</i> 16000 - 24000 mg/L [flow-through] (IUCLID); LC50 96 h <i>Poecilia reticulata</i> 16000 mg/L [semi-static] (EPA); LC50 96 h <i>Pimephales promelas</i> 15614 - 17428 mg/L [static] (EPA); LC50 96 h <i>Lepomis macrochirus</i> >1000 mg/L [static] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> 0.054 - 0.081 mg/L [flow-through] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> >1000 mg/L [static] (EPA)
Sodium Fluoride	7681-49-4	Freshwater Fish	Acute	LC50 96 h <i>Lepomis macrochirus</i> >530 mg/L (IUCLID); LC50 96 h <i>Lepomis macrochirus</i> 830 mg/L [semi-static] (EPA); LC50 96 h <i>Oncorhynchus mykiss</i> 38 - 68 mg/L [static] (EPA); LC50 96 h <i>Pimephales promelas</i> 180 mg/L [semi-static] (EPA)

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Sodium Sulfate Anhydrous	7757-82-6	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 13500 - 14500 mg/L (IUCLID); LC50 96 h Pimephales promelas >6800 mg/L [static] (EPA); LC50 96 h Lepomis macrochirus 3040 - 4380 mg/L [static] (IUCLID); LC50 96 h Lepomis macrochirus 13500 mg/L (IUCLID)
Sodium Chloride	7647-14-5	Water Flea	Acute	EC50 48 h Daphnia magna 1000 mg/L (IUCLID); EC50 48 h Daphnia magna 340.7 - 469.2 mg/L [Static] (EPA)
Sodium Bromide	7647-15-6	Water Flea	Acute	EC50 48 h Daphnia magna 5800 - 48000 mg/L (IUCLID); EC50 48 h Daphnia magna 5700 - 10800 mg/L [Static] (EPA)
Sodium Fluoride	7681-49-4	Water Flea	Acute	EC50 48 h Daphnia magna 338 mg/L (IUCLID); EC50 48 h Daphnia magna 98 mg/L [Static] (EPA)
Sodium Sulfate Anhydrous	7757-82-6	Water Flea	Acute	EC50 48 h Daphnia magna 2564 mg/L (IUCLID)

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)

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

15.01. 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
No data found.		

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

Chemical Name	CAS Number	Regulatory Information
Sodium Fluoride	7681-49-4	1000 lb final RQ; 454 kg final RQ

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

Chemical Name	CAS Number	List	Regulatory Information
Potassium Nitrate	7757-79-1	Emission Reporting	"1.0 % de minimis concentration (reportable only when in aqueous solution, listed under Chemical Category N511)" As Nitrate compounds, water dissociable [RR-03804-0]

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Sodium Fluoride	7681-49-4	Present
Potassium Nitrate	7757-79-1	Present
Sodium Sulfate Anhydrous	7757-82-6	Present (solution)

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Sodium Fluoride	7681-49-4	Environmental hazard
Potassium Nitrate	7757-79-1	Present
Sodium Sulfate Anhydrous	7757-82-6	Environmental hazard (solution)

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

Chemical Name	CAS Number	Regulatory Information
Sodium Fluoride	7681-49-4	sn 1699
Potassium Nitrate	7757-79-1	sn 1574
Potassium Nitrite	7758-09-0	sn 1575

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
Sodium Chloride	7647-14-5	DSL	Present
Sodium Bromide	7647-15-6	DSL	Present
Sodium Fluoride	7681-49-4	DSL	Present
Water	7732-18-5	DSL	Present
Potassium Nitrate	7757-79-1	DSL	Present
Sodium Sulfate Anhydrous	7757-82-6	DSL	Present
Potassium Nitrite	7758-09-0	DSL	Present
Potassium Dihydrogen Phosphate	7778-77-0	DSL	Present

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

Chemical Name	CAS Number	Status
Sodium Chloride	7647-14-5	Present (ACTIVE)
Sodium Bromide	7647-15-6	Present (ACTIVE)
Sodium Fluoride	7681-49-4	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)
Potassium Nitrate	7757-79-1	Present (ACTIVE)
Sodium Sulfate Anhydrous	7757-82-6	Present (ACTIVE)
Potassium Nitrite	7758-09-0	Present [S] (ACTIVE)
Potassium Dihydrogen Phosphate	7778-77-0	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)

Chemical Name	CAS Number	List	Number
Sodium Chloride	7647-14-5	EINECS	231-598-3
Sodium Bromide	7647-15-6	EINECS	231-599-9
Sodium Fluoride	7681-49-4	EINECS	231-667-8
Water	7732-18-5	EINECS	231-791-2
Potassium Nitrate	7757-79-1	EINECS	231-818-8
Sodium Sulfate Anhydrous	7757-82-6	EINECS	231-820-9
Potassium Nitrite	7758-09-0	EINECS	231-832-4
Potassium Dihydrogen Phosphate	7778-77-0	EINECS	231-913-4

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

Chemical Name	CAS Number	Status
Sodium Chloride	7647-14-5	Present [24102]
Sodium Bromide	7647-15-6	Present [36160]
Sodium Fluoride	7681-49-4	Present [13200]
Water	7732-18-5	Present [32224]
Potassium Nitrate	7757-79-1	Present [35600]
Sodium Sulfate Anhydrous	7757-82-6	Present [23172]
Potassium Nitrite	7758-09-0	Present [36927]
Potassium Dihydrogen Phosphate	7778-77-0	Present [22414]

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

Chemical Name	CAS Number	List	Status
Sodium Chloride	7647-14-5	Annex 1	Present [KE-31387]
Sodium Bromide	7647-15-6	Annex 1	Present [KE-31368]
Sodium Fluoride	7681-49-4	Annex 1	Present [KE-31540]
Water	7732-18-5	Annex 1	Present [KE-35400]
Potassium Nitrate	7757-79-1	Annex 1	Present [KE-29163]
Sodium Sulfate Anhydrous	7757-82-6	Annex 1	Present [KE-31609]
Potassium Nitrite	7758-09-0	Annex 1	Present [KE-29165]
Potassium Nitrite	7758-09-0	Annex 3	"Present (97-1-167)" As Nitrous acid, salts [RR-04206-8]
Potassium Dihydrogen Phosphate	7778-77-0	Annex 1	Present [KE-28622]

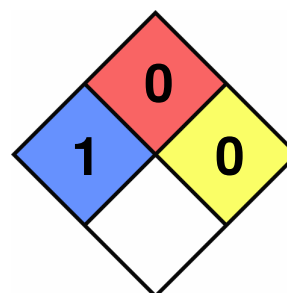
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Sodium Chloride	7647-14-5	(1)-236
Sodium Bromide	7647-15-6	(1)-113
Sodium Fluoride	7681-49-4	(1)-332
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)
Potassium Nitrate	7757-79-1	(1)-449
Sodium Sulfate Anhydrous	7757-82-6	(1)-501
Potassium Nitrite	7758-09-0	(1)-823
Potassium Dihydrogen Phosphate	7778-77-0	(1)-452

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

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





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16.2 Document Revision

Last Revision Date:

2026-05-06

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.