



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Mixed Calibration Standard 5R, ICP

Product Number RMXCL5R

Other Identifying Product Numbers RMXCL5R-500

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

Hazard Class	Category	Hazard Statements	Precautionary Statements
Skin Corrosion / Irritation	Category 2	H315	P264,P280,P302+P352,P321, P332+P313,P362+P364
Serious Eye Damage / Eye Irritation	Category 2	H319	P264,P280,P305+P351+P338, P337+P313
Corrosive to Metals	Category 1	H290	P234,P390,P406

2.2. GHS Label Elements

Pictograms:



Signal Word: **Warning**

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
H315	Causes skin irritation
H319	Causes serious eye irritation

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.
P264	Wash hands, arms, and face thoroughly after handling.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
P302+P352	IF ON SKIN: Wash with plenty of 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.
P332+P313	If skin irritation occurs: Get medical advice or attention.
P337+P313	If eye irritation persists: Get medical advice or attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P390	Absorb spillage to prevent material damage.

2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

2.4 percent of this mixture consists of ingredient(s) of unknown acute oral and dermal toxicity.

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	96.74
nitric acid	Nitric Acid	7697-37-2	2.37
magnesium dichloride	Magnesium Chloride	7786-30-3	0.81
(2R,3R)-2,3-dihydroxybutanedioic acid	Tartaric Acid; (+)-Tartaric acid; L-Tartaric acid	87-69-4	< 0.1
thallium	Thallium	7440-28-0	< 0.1
antimony	Antimony	7440-36-0	< 0.1
silver nitrate	Silver Nitrate; Nitric acid, silver(1+) salt	7761-88-8	< 0.1
chlorane	Hydrochloric Acid; Muriatic acid	7647-01-0	< 0.1

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

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

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

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes skin 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

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.

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

Protect from freezing and physical damage.

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SECTION 8: Exposure Controls / Personal Protection

8.1. Exposure Limits

U.S. OSHA - Permissible Exposure Limits (PEL) - Time Weighted Averages (TWA)

Chemical Name	CAS Number	Exposure Limit
Antimony	7440-36-0	0.5 mg/m3 TWA
Nitric Acid	7697-37-2	2 ppm TWA; 5 mg/m3 TWA
Silver Nitrate	7761-88-8	"0.01 mg/m3 TWA (as Ag)" As Silver soluble compounds [RR-00041-9]

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)

Chemical Name	CAS Number	Exposure Limit
Nitric Acid	7697-37-2	4 ppm STEL

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

Chemical Name	CAS Number	Exposure Limit
Thallium	7440-28-0	0.02 mg/m3 TWA (inhalable particulate matter)
Antimony	7440-36-0	0.5 mg/m3 TWA
Nitric Acid	7697-37-2	2 ppm TWA
Silver Nitrate	7761-88-8	"0.01 mg/m3 TWA (as Ag)" As Silver soluble compounds [RR-00041-9]

8.2. Engineering Controls

No specific controls are needed.

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8.3. Individual Protective Measures and Personal Protective Equipment

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: Colorless

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: 1.0

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.

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10.3. Conditions to Avoid and Incompatible Materials

Keep only in original packaging.

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
Thallium	7440-28-0	Oral LD50 Acute Toxicity Estimate 5 mg/kg (Source: ECHA)
Hydrochloric Acid	7647-01-0	Oral LD50 Rat 700 mg/kg (Source: Canada_WHMIS)
Silver Nitrate	7761-88-8	Oral LD50 Rat 1173 mg/kg (Source: NLM_CIP)
Magnesium Chloride	7786-30-3	Oral LD50 Rat 2800 mg/kg (Source: NLM_CIP)

Acute Toxicity - Dermal Exposure:

No information found.

Chemical Name	CAS Number	Toxicity
Hydrochloric Acid	7647-01-0	Dermal LD50 Rabbit >5010 mg/kg (Source: JAPAN_GHS)
Silver Nitrate	7761-88-8	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)
Magnesium Chloride	7786-30-3	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)
Tartaric Acid	87-69-4	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)

Acute Toxicity - Inhalation Exposure:

Not acutely toxic.

Chemical Name	CAS Number	Toxicity
Thallium	7440-28-0	Inhalation LC50 Acute Toxicity Estimate 0.05 mg/L 4 h (Source: ECHA)
Hydrochloric Acid	7647-01-0	Inhalation LC50 Acute Toxicity Estimate 0.5 mg/L 4 h (Source: ECHA)
Nitric Acid	7697-37-2	Inhalation LC50 Rat 3.22 mg/L 4 h (Source: WHMIS)
Silver Nitrate	7761-88-8	Inhalation LC50 Rat >750 µg/m3 4 h (no deaths occurred, aerosol, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

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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
Nitric Acid	7697-37-2	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.		

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
No data found.		

11.3 Additional Toxicology Information:

Causes skin irritation. Causes serious eye irritation.

SECTION 12: Ecological Information

12.1. Ecotoxicity

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Chemical Name	CAS Number	Species	Exposure	Toxicity
Magnesium Chloride	7786-30-3	Freshwater Algae	Acute	EC50 72 h Pseudokirchneriella subcapitata >82.7 mg/L (OECD_SIDS)
Silver Nitrate	7761-88-8	Freshwater Fish	Acute	LC50 96 h Poecilia reticulata 0.00512 - 0.00787 mg/L [semi-static] (EPA); LC50 96 h Lepomis macrochirus 0.009 - 0.02 mg/L [flow-through] (EPA); LC50 96 h Lepomis macrochirus 0.0242 - 0.0484 mg/L [semi-static] (EPA); LC50 96 h Lepomis macrochirus 0.05 - 0.07 mg/L [static] (EPA); LC50 96 h Oncorhynchus mykiss 0.001339 - 0.001637 mg/L [flow-through] (EPA); LC50 96 h Oncorhynchus mykiss 0.0075 mg/L [semi-static] (EPA); LC50 96 h Oncorhynchus mykiss 0.00839 - 0.1802 mg/L [static] (EPA); LC50 96 h Pimephales promelas 0.00452 - 0.00638 mg/L [flow-through] (EPA); LC50 96 h Pimephales promelas 0.00181 - 0.00214 mg/L [static] (EPA); LC50 96 h Pimephales promelas 0.0064 - 0.0106 mg/L [semi-static] (EPA); LC50 96 h Pimephales promelas 0.009 mg/L (IUCLID); LC50 96 h Cyprinus carpio 0.0027 mg/L [semi-static] (EPA)
Magnesium Chloride	7786-30-3	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 1970 - 3880 mg/L [static] (EPA)
Tartaric Acid	87-69-4	Freshwater Fish	Acute	LC50 96 h Danio rerio >100 mg/L [static] (ECHA)
Silver Nitrate	7761-88-8	Water Flea	Acute	EC50 48 h Daphnia magna 0.0006 mg/L (IUCLID); EC50 48 h Daphnia magna 0.0008 - 0.001 mg/L [Flow through] (EPA); EC50 48 h Daphnia magna 0.0008 - 0.0011 mg/L [Static] (EPA)
Magnesium Chloride	7786-30-3	Water Flea	Acute	EC50 48 h Daphnia magna 140 mg/L [Static] (EPA)
Antimony	7440-36-0	Water Flea	Chronic	NOEC 21 d Daphnia magna 1.74 mg/L [semi-static] (reproduction, ECHA_API)

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

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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: 500 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):



14.2 Transportation by Air - International Air Transport Association (IATA)

Sizes: 500 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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14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 500 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

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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)
Nitric Acid	7697-37-2	1000 lb TPQ	1000 lb EPCRA RQ

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

Chemical Name	CAS Number	Regulatory Information
Thallium	7440-28-0	1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
Antimony	7440-36-0	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
Hydrochloric Acid	7647-01-0	5000 lb final RQ; 2270 kg final RQ
Nitric Acid	7697-37-2	1000 lb final RQ; 454 kg final RQ
Silver Nitrate	7761-88-8	1 lb final RQ; 0.454 kg final RQ

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

Chemical Name	CAS Number	List	Regulatory Information
Thallium	7440-28-0	Emission Reporting	1.0 % de minimis concentration
Antimony	7440-36-0	Emission Reporting	1.0 % de minimis concentration
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)
Nitric Acid	7697-37-2	Emission Reporting	1.0 % de minimis concentration
Silver Nitrate	7761-88-8	Emission Reporting	"1.0 % de minimis concentration (includes any unique chemical substance that includes Silver as part of that chemical's infrastructure, listed under Chemical Category N740)" As Silver compounds [RR-00574-3]; "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
Thallium	7440-28-0	Present
Antimony	7440-36-0	Present
Hydrochloric Acid	7647-01-0	Extraordinarily hazardous
Nitric Acid	7697-37-2	Extraordinarily hazardous
Silver Nitrate	7761-88-8	Present

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Thallium	7440-28-0	Environmental hazard
Antimony	7440-36-0	Environmental hazard
Hydrochloric Acid	7647-01-0	Environmental hazard
Nitric Acid	7697-37-2	Environmental hazard
Silver Nitrate	7761-88-8	Environmental hazard

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

Chemical Name	CAS Number	Regulatory Information
Thallium	7440-28-0	sn 1840
Antimony	7440-36-0	sn 0141
Hydrochloric Acid	7647-01-0	sn 1012
Nitric Acid	7697-37-2	sn 1356
Silver Nitrate	7761-88-8	sn 1672

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
Thallium	7440-28-0	DSL	Present
Antimony	7440-36-0	DSL	Present
Hydrochloric Acid	7647-01-0	DSL	Present
Nitric Acid	7697-37-2	DSL	Present
Water	7732-18-5	DSL	Present
Silver Nitrate	7761-88-8	DSL	Present
Magnesium Chloride	7786-30-3	DSL	Present
Tartaric Acid	87-69-4	DSL	Present

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

Chemical Name	CAS Number	Status
Thallium	7440-28-0	Present (ACTIVE)
Antimony	7440-36-0	Present (ACTIVE)
Hydrochloric Acid	7647-01-0	Present (ACTIVE)
Nitric Acid	7697-37-2	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)
Silver Nitrate	7761-88-8	Present (ACTIVE)
Magnesium Chloride	7786-30-3	Present (ACTIVE)
Tartaric Acid	87-69-4	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
Thallium	7440-28-0	EINECS	231-138-1
Antimony	7440-36-0	EINECS	231-146-5
Hydrochloric Acid	7647-01-0	EINECS	231-595-7
Nitric Acid	7697-37-2	EINECS	231-714-2
Water	7732-18-5	EINECS	231-791-2
Silver Nitrate	7761-88-8	EINECS	231-853-9
Magnesium Chloride	7786-30-3	EINECS	232-094-6
Tartaric Acid	87-69-4	EINECS	201-766-0

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

Chemical Name	CAS Number	Status
Thallium	7440-28-0	Present [33902]
Antimony	7440-36-0	Present [34285]
Hydrochloric Acid	7647-01-0	Present [37053]
Nitric Acid	7697-37-2	Present [35578]
Water	7732-18-5	Present [32224]
Silver Nitrate	7761-88-8	Present [35648]
Magnesium Chloride	7786-30-3	Present [24097]
Tartaric Acid	87-69-4	Present [21192] (listed under D-Tartaric acid)

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

Chemical Name	CAS Number	List	Status
Thallium	7440-28-0	Annex 1	Present [KE-33716]
Antimony	7440-36-0	Annex 1	Present [KE-01834]
Antimony	7440-36-0	Annex 3	"Present (97-1-176)" As Inorganic antimony compounds [RR-00554-9]
Hydrochloric Acid	7647-01-0	Annex 1	Present [KE-20189]
Nitric Acid	7697-37-2	Annex 1	Present [KE-25911]
Water	7732-18-5	Annex 1	Present [KE-35400]
Silver Nitrate	7761-88-8	Annex 1	Present [KE-31281]
Silver Nitrate	7761-88-8	Annex 3	"Present (97-1-92)" As Inorganic silver, salts [RR-04200-2]
Magnesium Chloride	7786-30-3	Annex 1	Present [KE-22691]
Tartaric Acid	87-69-4	Annex 1	Present [KE-10801]

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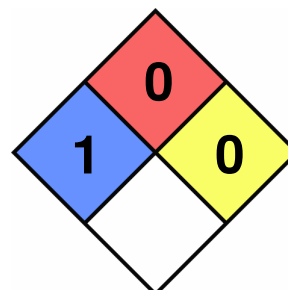
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Thallium	7440-28-0	- (exempt)
Antimony	7440-36-0	- (exempt)
Hydrochloric Acid	7647-01-0	(1)-215
Nitric Acid	7697-37-2	(1)-394
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)
Silver Nitrate	7761-88-8	(1)-8
Magnesium Chloride	7786-30-3	(1)-233
Tartaric Acid	87-69-4	(2)-1456

SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

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



16.2 Document Revision

Last Revision Date:

2026-05-05

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.