RICCA CHEMICAL COMPANY®

Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Clarke Solution

Product Number R2137000

Other Identifying Product Numbers R2137000-1C

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
Acute Toxicity - Oral	Category 4	H302	P264,P270,P301+P312,P330,P501
Acute Toxicity - Inhalation (Dusts and Mists)	Category 4	H332	P261,P271,P304+P340,P312
Corrosive to the Respiratory Tract	Corrosive		
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
Serious Eye Damage / Eye Irritation	Category 1	H318	P280,P305+P351+P338,P310
Carcinogenicity	Category 2	H351	P201,P202,P280,P308+P313,P405, P501
Specific Target Organ Toxicity - Single Exposure - Transient Effects	Category 3 - Respiratory Irritation	H335	P261,P271,P304+P340,P312, P403+P233,P405,P501
Corrosive to Metals	Category 1	H290	P234,P390,P406

2.2. GHS Label Elements

Pictograms:

Signal Word: **Danger**

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
H302+H332	Harmful if swallowed or if inhaled
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
H351	Suspected of causing cancer
	Corrosive to the respiratory tract

Precautionary Statements:

NOTE: Precautionary statements may be combined or consolidated on labels to improve clarity and readability.

Prevention

Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original packaging.
P260	Do not breathe fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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.
P308+P313	If exposed or concerned: Get medical advice or attention.
P310	Immediately call a poison center or doctor.
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.

Storage

Precautionary Number	Precautionary Statement
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

Precautionary Number	Precautionary Statement
P501	Dispose of contents/container to suitable waste stream in accordance with local, state, federal, and international regulations.

2.3. Hazards not Otherwise Classified

No other hazards identified.

2.4. Ingredients of Unknown Acute Toxicity

4.2 percent of this mixture consists of ingredient(s) of unknown acute dermal and inhalation 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	59.29
chlorane	Hydrochloric Acid; Muriatic acid	7647-01-0	34.82
tin(II) chloride dihydrate	Stannous Chloride Dihydrate	10025-69-1	4.20
diantimony trioxide	Antimony Trioxide; antimony(III) oxide	1309-64-4	1.68

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. May cause severe burns and permanent damage.

Ingestion: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Dilute with water or milk. Do not induce vomiting. Call a physician if necessary.

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 or shower. May cause irritation, redness, and pain.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Suspected of causing cancer DANGER! Corrosive liquid! Causes severe burns to all areas of contact. May be fatal if swallowed. Wash areas of contact with water immediately for at least 15 minutes. Inhalation can cause coughing, choking, inflammation of the nose, throat and upper respiratory tract. If ingested, give large quantity of water. Do not induce vomiting. Call a physician immediately. EYE CONTACT: May cause severe burns and permanent damage. SKIN CONTACT: May cause irritation, redness, and pain.

4.3. Immediate Medical Attention or Special Treatment Needed

Immediately call a poison center or doctor. 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.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Does not burn. Use extinguishing agents compatible with acid and appropriate for the burning material.

5.2. Specific Hazards Arising from the Substance or Mixture in a Fire

Not combustible. Aqueous hydrochloric acid solutions react with most metals, forming flammable hydrogen gas.

5.3. Special Protective Equipment and Precautions for Firefighters

Wear special protective clothing and positive pressure self-contained breathing apparatus. Butyl rubber or Teflon barrier recommended.

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

Approach release from upwind. Stop or control the leak, if this can be done without undue risk. Use water fog or spray to knock down and absorb vapors. Releases may require isolation or evacuation. Control runoff and isolate discharged material for proper disposal.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store in a well-ventilated place. Keep container tightly closed. Store locked up. 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

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

Chemical Name	CAS Number	Exposure Limit
Stannous Chloride Dihydrate	10025-69-1	"2 mg/m3 TWA (except oxides, as Sn)" As Tin, inorganic compounds [RR-00043-1]
Antimony Trioxide	1309-64-4	"0.5 mg/m3 TWA (as Sb)" As Antimony compounds [RR-00585-6]

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)

No limits found.

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

Chemical Name	CAS Number	Exposure Limit
Stannous Chloride Dihydrate	10025-69-1	"2 mg/m3 TWA (excluding Tin hydride and Indium tin oxide, inhalable particulate matter, as Sn)" As Tin inorganic compounds [RR-00043-1]
Antimony Trioxide	1309-64-4	0.02 mg/m3 TWA (inhalable particulate matter)

8.2. Engineering Controls

Use only outdoors or in a well-ventilated area. 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. If necessary, wear a respirator equipped with an acid gas cartridge.

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:	Clear, tan
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:	miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.19
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

Keep only in original packaging. Most metals, Alkalis, active metals, Cyanides, Sulfides, Sulfites, Metal Oxides, Formaldehyde.

10.4. Hazardous Decomposition Products

Will not occur.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Oral acute toxicity estimate (ATE): 1793 mg/kg(calculated)

Chemical Name	CAS Number	Toxicity
Stannous Chloride Dihydrate	10025-69-1	Oral LD50 Rat 700 mg/kg (Source: Canada_WHMIS) as Stannous chloride [7772-99-8]
Antimony Trioxide	1309-64-4	Oral LD50 Rat >34600 mg/kg (Source: NLM_CIP)
Hydrochloric Acid	7647-01-0	Oral LD50 Rat 700 mg/kg (Source: Canada_WHMIS)

Acute Toxicity - Dermal Exposure:

No information found.

Chemical Name	CAS Number	Toxicity
Antimony Trioxide	1309-64-4	Dermal LD50 Rabbit >2000 mg/kg (Source: NLM_HSDB)
Hydrochloric Acid	7647-01-0	Dermal LD50 Rabbit >5010 mg/kg (Source: JAPAN_GHS)

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, dust or mist): 1.4360 mg/L, 4 h(calculated)

Chemical Name	CAS Number	Toxicity
Antimony Trioxide	1309-64-4	Inhalation LC50 Rat >5.2 mg/L 4 h (no deaths occurred, aerosol, Source: ECHA_API)
Hydrochloric Acid	7647-01-0	Inhalation LC50 Acute Toxicity Estimate 0.5 mg/L 4 h (Source: ECHA)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
Antimony Trioxide	1309-64-4	Group 2A (Probably Carcinogenic to Humans) - Monograph 131 [2023]; Monograph 47 [1989] As Trivalent antimony compounds
Hydrochloric Acid	7647-01-0	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
Stannous Chloride Dihydrate	10025-69-1	"Male Rat - Equivocal Evidence; Female Rat - No Evidence; Male Mice - No Evidence; Female Mice - No Evidence (TR-231)" As Stannous chloride [7772-99-8]
Antimony Trioxide	1309-64-4	Reasonably Anticipated To Be A Human Carcinogen; Male Rat - Some Evidence; Female Rat - Some Evidence; Male Mice - Clear Evidence; Female Mice - Clear Evidence (TR-590)

U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
	No data found.	

11.3 Additional Toxicology Information:

Harmful if swallowed or if inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation. Suspected of causing cancer. Corrosive to the respiratory tract.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Antimony Trioxide	1309-64-4	Freshwater Algae	Acute	EC50 72 h Pseudokirchneriella subcapitata 0.63 - 0.8 mg/L (EPA); EC50 96 h Pseudokirchneriella subcapitata 0.65 - 0.81 mg/L (EPA)
Antimony Trioxide	1309-64-4	Freshwater Fish	Acute	LC50 96 h Pimephales promelas >80 mg/L [static] (EPA); LC50 96 h Brachydanio rerio >1000 mg/L [static] (IUCLID)
Stannous Chloride Dihydrate	10025-69-1	Water Flea	Acute	"EC50 48 h Daphnia magna 55 mg/L [Static] (EPA)" As Stannous chloride [7772-99-8]
Antimony Trioxide	1309-64-4	Water Flea	Acute	EC50 48 h Daphnia magna >1000 mg/L (IUCLID); EC50 48 h Daphnia magna 361.5 - 496.0 mg/L [Static] (EPA)
Antimony Trioxide	1309-64-4	Water Flea	Chronic	NOEC 21 d Daphnia magna 1.74 mg/L [static] (reproduction, ECHA_API)

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: 1 L

UN Number: UN1789

Proper Shipping Name: Hydrochloric Acid Solution

Hazard Class: 8

Packing Group: II

Hazard Label(s):

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

Sizes: 1 L

UN Number: UN1789

Proper Shipping Name: Hydrochloric Acid Solution

Hazard Class: 8

Packing Group: II

Hazard Label(s):

14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 1 L

UN Number: UN1789

Proper Shipping Name: HYDROCHLORIC ACID SOLUTION

Hazard Class: 8

Packing Group: II

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)

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

Chemical Name	CAS Number	Regulatory Information
Antimony Trioxide	1309-64-4	1000 lb final RQ; 454 kg final RQ
Hydrochloric Acid	7647-01-0	5000 lb final RQ; 2270 kg final RQ

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

Chemical Name	CAS Number	List	Regulatory Information
Antimony Trioxide	1309-64-4	Emission Reporting	"1.0 % de minimis concentration (includes any unique chemical substance that contains Antimony as part of that chemical's infrastructure, listed under Chemical Category N010)" As Antimony compounds [RR-00585-6]
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)

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Stannous Chloride Dihydrate	10025-69-1	"Present" As Stannous chloride [7772-99-8]
Antimony Trioxide	1309-64-4	Present
Hydrochloric Acid	7647-01-0	Extraordinarily hazardous

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Antimony Trioxide	1309-64-4	Environmental hazard
Hydrochloric Acid	7647-01-0	Environmental hazard

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

Chemical Name	CAS Number	Regulatory Information
Stannous Chloride Dihydrate	10025-69-1	"sn 1733" As Stannous chloride [7772-99-8]
Antimony Trioxide	1309-64-4	sn 0149
Hydrochloric Acid	7647-01-0	sn 1012

15.08. California Proposition 65

Chemical Name	CAS Number	Regulatory Information
Antimony Trioxide	1309-64-4	carcinogen, 10/1/1990
Antimony Trioxide	1309-64-4	0.13 µg/day NSRL (inhalation)

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

Chemical Name	CAS Number	List	Status
Stannous Chloride Dihydrate	10025-69-1	DSL	"Present" As Stannous chloride [7772-99-8]
Stannous Chloride Dihydrate	10025-69-1	NDSL	"Present" As Tin chloride [1344-13-4]
Antimony Trioxide	1309-64-4	DSL	Present
Hydrochloric Acid	7647-01-0	DSL	Present
Water	7732-18-5	DSL	Present

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

Chemical Name	CAS Number	Status
Stannous Chloride Dihydrate	10025-69-1	"Present (ACTIVE)" As Tin chloride [1344-13-4]; "Present (ACTIVE)" As Tin chloride (SnCl2) [7772-99-8]
Antimony Trioxide	1309-64-4	Present (ACTIVE)
Hydrochloric Acid	7647-01-0	Present (ACTIVE)
Water	7732-18-5	Present [XU] (ACTIVE)

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
Stannous Chloride Dihydrate	10025-69-1	EINECS	"215-689-5" As Tin chloride [1344-13-4]; "231-868-0" As Tin dichloride [7772-99-8]
Antimony Trioxide	1309-64-4	EINECS	215-175-0
Hydrochloric Acid	7647-01-0	EINECS	231-595-7
Water	7732-18-5	EINECS	231-791-2

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

Chemical Name	CAS Number	Status
Stannous Chloride Dihydrate	10025-69-1	Present [24164]
Antimony Trioxide	1309-64-4	Present [29709]
Hydrochloric Acid	7647-01-0	Present [37053]
Water	7732-18-5	Present [32224]

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

Chemical Name	CAS Number	List	Status
Stannous Chloride Dihydrate	10025-69-1	Annex 1	"Present [KE-33843]" As Tin chloride [1344-13-4]; "Present [KE-33845]" As Stannous chloride [7772-99-8]
Antimony Trioxide	1309-64-4	Annex 1	Present [KE-09846]
Antimony Trioxide	1309-64-4	Annex 3	"Present (97-1-176)" As Inorganic antimony compounds [RR-00554-9]
Hydrochloric Acid	7647-01-0	Annex 1	Present [KE-20189]
Water	7732-18-5	Annex 1	Present [KE-35400]

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

Chemical Name	CAS Number	MITI No.
Stannous Chloride Dihydrate	10025-69-1	(1)-260
Antimony Trioxide	1309-64-4	(1)-543
Hydrochloric Acid	7647-01-0	(1)-215
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)

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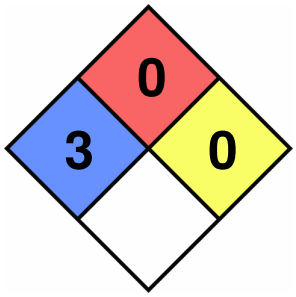
SECTION 16: Other Information

16.1 National Fire Protection Associate (NFPA) Rating

Health: 3
Flammability: 0
Reactivity 0
Special Hazard:



16.2 Document Revision

Last Revision Date:
2026-05-25

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.