



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS 2024)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation Artificial Sweat, ISO-3160-2

Product Number R0839000

Other Identifying Product Numbers R0839000-1A

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 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

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
H314	Causes severe skin burns and eye damage

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
P260	Do not breathe fumes or mist.
P264	Wash hands, arms, and face thoroughly after handling.
P280	Wear protective gloves and eye protection.

Response

Precautionary Number	Precautionary Statement
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 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.
P310	Immediately call a poison center or doctor.
P363	Wash contaminated clothing before reuse.

Storage

Precautionary Number	Precautionary Statement
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

7.6 percent of this mixture consists of ingredient(s) of unknown acute oral toxicity. 8.3 percent of this mixture consists of ingredient(s) of unknown acute dermal toxicity. 9.8 percent of this mixture consists of ingredient(s) of unknown acute inhalation 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	86.89
sodium hydroxide	Sodium Hydroxide; caustic soda	1310-73-2	7.62
sodium chloride	Sodium Chloride; Salt	7647-14-5	1.90
ammonium chloride	Ammonium Chloride	12125-02-9	1.67
2-hydroxypropanoic acid	Lactic Acid; Milk Acid	50-21-5	1.21
urea	Urea; Carbamide; Carbonyl diamide	57-13-6	0.48
acetic acid	Acetic Acid; Ethanoic acid	64-19-7	0.24

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 irritation, redness, pain, and tearing.

Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Dilute with water or milk. 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, itching and pain, especially on damaged or broken skin.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage May cause irritation to the eyes and skin. Wash areas of contact with water. Call a physician if irritation develops. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause irritation, redness, itching and pain, especially on damaged or broken skin.

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. Flush with plenty of water for at least 15 minutes. Call a physician if irritation develops. Dilute with water or milk. Call a physician if necessary.

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 in a Fire

Not considered to be a fire or explosion hazard.

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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 protective gloves and eye protection.

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

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

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

Chemical Name	CAS Number	Exposure Limit
Sodium Hydroxide	1310-73-2	2 mg/m3 TWA
Acetic Acid	64-19-7	10 ppm TWA; 25 mg/m3 TWA

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)

Chemical Name	CAS Number	Exposure Limit
Sodium Hydroxide	1310-73-2	2 mg/m3 Ceiling

ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)

Chemical Name	CAS Number	Exposure Limit
Ammonium Chloride	12125-02-9	20 mg/m3 STEL (fume)
Acetic Acid	64-19-7	15 ppm STEL

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

Chemical Name	CAS Number	Exposure Limit
Ammonium Chloride	12125-02-9	10 mg/m3 TWA (fume)
Acetic Acid	64-19-7	10 ppm TWA

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:	Data not available.
Odor Threshold:	Data not available.
Melting/Freezing Point:	Approximately 0°C
Boiling Point/Range:	Approximately 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:	4.6 - 4.8
Kinematic Viscosity:	Data not available.
Solubility:	Miscible
Vapor Pressure:	Data not available.
Evaporation Rate:	Data not available.
Relative Density:	1.05
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

Strong oxidizing agents, Lithium, Bromine Trifluoride.

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
Ammonium Chloride	12125-02-9	Oral LD50 Acute Toxicity Estimate 500 mg/kg (Source: Canada_WHMIS)
Lactic Acid	50-21-5	Oral LD50 Rat 3543 mg/kg (Source: NLM_CIP)
Urea	57-13-6	Oral LD50 Rat 8471 mg/kg (Source: NLM_CIP)
Acetic Acid	64-19-7	Oral LD50 Rat 3530 mg/kg (Source: Canada_HSA)
Sodium Chloride	7647-14-5	Oral LD50 Rat 3550 mg/kg (Source: ECHA)

Acute Toxicity - Dermal Exposure:

No information found.

Chemical Name	CAS Number	Toxicity
Ammonium Chloride	12125-02-9	Dermal LD50 Rat >2000 mg/kg (Source: ECHA_API)
Lactic Acid	50-21-5	Dermal LD50 Rabbit >2000 mg/kg (Source: ECHA_API)
Sodium Chloride	7647-14-5	Dermal LD50 Rabbit >10000 mg/kg (no deaths occurred, Source: ECHA)

Acute Toxicity - Inhalation Exposure:

Inhalation acute toxicity estimate (ATE, vapor): 3541.6667 mg/L, 4 h(calculated)

Chemical Name	CAS Number	Toxicity
Lactic Acid	50-21-5	Inhalation LC50 Rat >7.94 mg/L 4 h (no deaths occurred, aerosol, Source: EPA_HPVS)
Acetic Acid	64-19-7	Inhalation LC50 Rat > 8.5 mg/L 4 h (Source: Canada_HSA)
Sodium Chloride	7647-14-5	Inhalation LC50 Rat >42 mg/L 1 h (no deaths occurred, aerosol, Source: ECHA_API)

11.2 Carcinogenicity:

International Agency for Research on Cancer (IARC)

Chemical Name	CAS Number	Classification
No data found.		

National Toxicology Program (NTP)

Chemical Name	CAS Number	Classification
No data found.		

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U.S. OSHA specifically regulated carcinogens

Chemical Name	CAS Number	Classification
No data found.		

11.3 Additional Toxicology Information:

Causes severe skin burns and eye damage.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Chemical Name	CAS Number	Species	Exposure	Toxicity
Sodium Chloride	7647-14-5	Earthworm	Acute	LC50 48 h Eisenia foetida 0.1 - 1 mg/cm2 [filter paper] (IUCLID)
Ammonium Chloride	12125-02-9	Freshwater Fish	Acute	LC50 96 h Cyprinus carpio 209 mg/L [static]
Sodium Hydroxide	1310-73-2	Freshwater Fish	Acute	LC50 96 h Oncorhynchus mykiss 45.4 mg/L [static] (IUCLID)
Urea	57-13-6	Freshwater Fish	Acute	LC50 96 h Poecilia reticulata 16200 - 18300 mg/L (EPA)
Acetic Acid	64-19-7	Freshwater Fish	Acute	LC50 96 h Pimephales promelas 79 mg/L [static] (EPA); LC50 96 h Lepomis macrochirus 75 mg/L [static] (EPA)
Sodium Chloride	7647-14-5	Freshwater Fish	Acute	LC50 96 h Lepomis macrochirus 5560 - 6080 mg/L [flow-through] (EPA); LC50 96 h Lepomis macrochirus 12946 mg/L [static] (EPA); LC50 96 h Pimephales promelas 6020 - 7070 mg/L [static] (EPA); LC50 96 h Pimephales promelas 7050 mg/L [semi-static] (EPA); LC50 96 h Pimephales promelas 6420 - 6700 mg/L [static] (EPA); LC50 96 h Oncorhynchus mykiss 4747 - 7824 mg/L [flow-through] (EPA)
Urea	57-13-6	Water Flea	Acute	EC50 48 h Daphnia magna 3910 mg/L [Static] (EPA)
Acetic Acid	64-19-7	Water Flea	Acute	EC50 48 h Daphnia magna 65 mg/L [Static] (EPA)
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)

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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)

Not regulated according to DOT regulations.



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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.

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
No data found.		

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

Chemical Name	CAS Number	Regulatory Information
Ammonium Chloride	12125-02-9	5000 lb final RQ; 2270 kg final RQ
Sodium Hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
Acetic Acid	64-19-7	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
Ammonium Chloride	12125-02-9	Emission Reporting	"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]

15.05. Massachusetts Right-to-Know Substance List

Chemical Name	CAS Number	Regulatory Information
Ammonium Chloride	12125-02-9	Present (including fume)
Sodium Hydroxide	1310-73-2	Present
Acetic Acid	64-19-7	Present (including glacial)

15.06. Pennsylvania Right-to-Know Hazardous Substances

Chemical Name	CAS Number	Regulatory Information
Ammonium Chloride	12125-02-9	Environmental hazard
Sodium Hydroxide	1310-73-2	Environmental hazard
Acetic Acid	64-19-7	Environmental hazard; Environmental hazard (water solutions)

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

Chemical Name	CAS Number	Regulatory Information
Ammonium Chloride	12125-02-9	sn 0093
Sodium Hydroxide	1310-73-2	sn 1706
Acetic Acid	64-19-7	sn 0004

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
Ammonium Chloride	12125-02-9	DSL	Present
Sodium Hydroxide	1310-73-2	DSL	Present
Lactic Acid	50-21-5	DSL	Present
Urea	57-13-6	DSL	Present
Acetic Acid	64-19-7	DSL	Present
Acetic Acid	64-19-7	NDSL	"Present" As Carboxylic acids, C1-5 [68937-68-8]
Sodium Chloride	7647-14-5	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
Ammonium Chloride	12125-02-9	Present (ACTIVE)
Sodium Hydroxide	1310-73-2	Present (ACTIVE)
Lactic Acid	50-21-5	Present (ACTIVE)
Urea	57-13-6	Present (ACTIVE)
Acetic Acid	64-19-7	Present (ACTIVE)
Sodium Chloride	7647-14-5	Present (ACTIVE)
Water	7732-18-5	Present [XU] (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
Ammonium Chloride	12125-02-9	EINECS	235-186-4
Sodium Hydroxide	1310-73-2	EINECS	215-185-5
Lactic Acid	50-21-5	EINECS	200-018-0
Urea	57-13-6	EINECS	200-315-5
Acetic Acid	64-19-7	EINECS	200-580-7
Sodium Chloride	7647-14-5	EINECS	231-598-3
Water	7732-18-5	EINECS	231-791-2

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

Chemical Name	CAS Number	Status
Ammonium Chloride	12125-02-9	Present [24013]
Sodium Hydroxide	1310-73-2	Present [27689]
Lactic Acid	50-21-5	Present [28383]
Urea	57-13-6	Present [25293]
Acetic Acid	64-19-7	Present [39068]
Sodium Chloride	7647-14-5	Present [24102]
Water	7732-18-5	Present [32224]

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

Chemical Name	CAS Number	List	Status
Ammonium Chloride	12125-02-9	Annex 1	Present [KE-01645]
Sodium Hydroxide	1310-73-2	Annex 1	Present [KE-31487]
Lactic Acid	50-21-5	Annex 1	Present [KE-21802]
Urea	57-13-6	Annex 1	Present [KE-35144]
Acetic Acid	64-19-7	Annex 1	Present [KE-00013]
Sodium Chloride	7647-14-5	Annex 1	Present [KE-31387]
Water	7732-18-5	Annex 1	Present [KE-35400]

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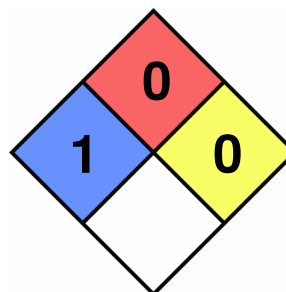
15.14. Japan - Existing and New Chemical Substances Inventory (ENCS)

Chemical Name	CAS Number	MITI No.
Ammonium Chloride	12125-02-9	(1)-218
Sodium Hydroxide	1310-73-2	(1)-410
Lactic Acid	50-21-5	(2)-1369
Urea	57-13-6	(2)-1732
Acetic Acid	64-19-7	(2)-688
Sodium Chloride	7647-14-5	(1)-236
Water	7732-18-5	- (listed on Japanese Pharmacopoeia 8th Edition)

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:
 2026-05-24

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.