

SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

Product Identifier

SRM Number: 2389a
SRM Name: Amino Acids in 0.1 mol/L Hydrochloric Acid
Other Means of Identification: Not applicable.

Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is intended primarily for use in calibration of chromatographic instrumentation for the determination of amino acids. SRM 2389a is a solution of amino acids in a 0.1 mol/L aqueous solution of hydrochloric acid. A unit of SRM 2389a consists of five 2-mL ampoules each containing approximately 1.2 mL of the solution under argon.

Company Information

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2. HAZARDS IDENTIFICATION

Classification

Physical Hazard: Not classified.
Health Hazard: Not classified.
 Not classified.

Label Elements

Symbol
 No Symbol

Signal Word
 No Symbol

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients(s) with Unknown Acute Toxicity: Not applicable.

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Substance: Amino acid solution

Other Designations: Not applicable.

Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the Certificate of Analysis.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Hydrochloric acid	7647-01-0	231-595-7	0.3
Non-Hazardous Component(s)			
Water	7732-18-5	231-791-2	>99

4. FIRST AID MEASURES

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. Seek immediate medical attention.

Skin Contact: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Eye Contact: Immediately flush eyes, including under the eyelids with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

Ingestion: If a large amount is swallowed, get medical attention.

Most Important Symptoms/Effects, Acute and Delayed: None reported.

Indication of any immediate medical attention and special treatment needed, if necessary: Not applicable.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire hazard. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media:

Suitable: Regular dry chemical, carbon dioxide, water, regular foam.

Unsuitable: None listed.

Specific Hazards Arising from the Chemical: Thermal decomposition products: oxides of carbon, trace amounts of hydrogen chloride.

Special Protective Equipment and Precautions for Fire-Fighters: Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Do not touch spilled material. Notify safety personnel of spills. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE

Safe Handling Precautions: Handle glass ampoules with care. See Section 8, "Exposure Controls and Personal Protection".

Storage: Store and handling in accordance with all current regulations and standards. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Hydrochloric acid:

NIOSH (REL): 7 mg/m³; 5 ppm (Ceiling)
75 mg/m³; 50 ppm (IDLH)

ACGIH (TLV): 3 mg/m³; 2 ppm (Ceiling)

OSHA (PEL): 7 mg/m³; 5 ppm (Ceiling)

Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Wear splash resistant safety goggles with a face shield. An eyewash station should be readily available near areas of use.

Skin and Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

9. PHYSICAL AND CHEMICAL PROPERTIES

Descriptive Properties:

Appearance (physical state, color, etc.):	Colorless liquid
Molecular Formula:	Not applicable
Molar Mass (g/mol):	Not applicable
Odor:	Odorless (water)
Odor threshold:	Not available
pH:	7 (water)
Evaporation rate:	Not available
Melting point/freezing point (°C):	0 (32 °F) (water)
Relative Density (g/mL):	1.00123 (20 °C)
Specific Gravity	1 (water)
Vapor Pressure (mmHg):	17.5 (20 °C) (water)
Vapor Density (air = 1):	Not available
Viscosity (cP):	Not available
Solubility(ies):	Miscible with alcohol (water)
Partition coefficient (n-octanol/water):	Not available

Thermal Stability Properties:

Autoignition Temperature (°C):	Not applicable
Thermal Decomposition (°C):	Not applicable
Initial boiling point and boiling range (°C):	100 (212 °F) (water)
Explosive Limits, LEL (Volume %):	Not applicable
Explosive Limits, UEL (Volume %):	Not applicable
Flash Point (°C):	Not applicable
Flammability (solid, gas):	Not applicable

10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure.

Stability: X Stable _____ Unstable

Possible Hazardous Reactions: None reported.

Conditions to Avoid: None reported.

Incompatible Materials: No data available.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition may produce oxides of carbon and trace amounts of hydrogen chloride.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Exposure: _____ Inhalation X Skin _____ Ingestion

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: None reported.

Potential Health Effects (Acute, Chronic and Delayed):

Inhalation: None reported.

Skin Contact: None reported.

Eye Contact: None reported.

Ingestion: None reported.

Numerical Measures of Toxicity:

Acute Toxicity: Not classified.

Skin Corrosion/Irritation: Not classified.

Hydrochloric acid: Rabbit, Dermal, 1 % HCl solution (48 h): Not irritating.

Hydrochloric acid: Human, Dermal, 4 % HCl solution (96 h): Slightly irritating.

Serious Eye damage/Eye irritation: Not classified.

Hydrochloric acid: Rabbit, eye, 0.33 % HCl solution (48 h): Not irritating.

Respiratory Sensitization: No data available.

Skin Sensitization: No data available.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: Not classified.

Listed as a Carcinogen/Potential Carcinogen _____ Yes X No
No components listed by NTP, IARC or OSHA as a carcinogen.

Reproductive Toxicity: Not classified.

Hydrochloric acid: Rat, Inhalation TClO: 450 mg/kg (1 h, prior to copulation 1 d)

Specific Target Organ Toxicity, Single Exposure: Not classified.

Specific Target Organ Toxicity, Repeated Exposure: Not classified.

Aspiration Hazard: No data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data:

Hydrochloric acid:

Fish Toxicity: Mosquitofish (*Gambusia affinis*) LC50 (static): 282 mg/L (96 h)

Invertebrate: Shore crab (*Carcinus maenas*) LC50 (mortality): 240 mg/L (48 h)

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available for this solution.

Other Adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of waste in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA. The HCl concentration in this material (0.3%) does not meet the minimum concentration for regulation.

15. REGULATORY INFORMATION

U.S. Regulations:

CERCLA Sections 102a/103 (40 CFR 302.4): This SRM is not regulated.

SARA Title III Section 302 (40 CFR 355.30): This SRM is not regulated.

SARA Title III Section 304 (40 CFR 355.40): This SRM is not regulated.

SARA Title III Section 313 (40 CFR 372.65): This SRM is not regulated

OSHA Process Safety (29 CFR 1910.119): This SRM is not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH: No.
CHRONIC HEALTH: No.
FIRE: No.
REACTIVE: No.
PRESSURE: No.

State Regulations:

California Proposition 65: Not listed.

U.S. TSCA Inventory: Hydrochloric acid and water are listed.

TSCA 12(b), Export Notification: Not listed.

Canadian Regulations: WHMIS Information: Not provided for this material.

16. OTHER INFORMATION

Issue Date: 13 September 2023

Sources: ChemAdvisor, Inc., SDS *Water*, 09 December 2015.

ChemAdvisor, Inc., SDS *Hydrochloric Acid*, 09 December 2015.

PubChem, National Library of Medicine, *Hydrochloric Acid CAS 7647-01-0*; available at <https://pubchem.ncbi.nlm.nih.gov/compound/313> (accessed Sep 2023).

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists	NRC	Nuclear Regulatory Commission
ALI	Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transport Association	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration, 50 %	STEL	Short Term Exposure Level
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NIOSH	National Institute for Occupational Safety and Health	TWA	Time Weighted Average
NIST	National Institute of Standards and Technology	UEL	Upper Explosive Limit
n.o.s.	Not Otherwise Specified	WHMIS	Workplace Hazardous Materials Information System

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Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; e-mail srmmsds@nist.gov; or via the Internet at <https://www.nist.gov/srm>.