

SLI Technologies, Inc

Santa Rosa Industrial Park

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Milton, FL 32583
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Version 1.3

Slitech-amines.com
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SAFETY DATA SHEET

1. Product and Company Identification

1.1. Product Identifiers

Product name: Spermine Tetrahydrochloride, 99%
Product number: 1212038
Brand: SLI Technologies, Inc.
CAS #: 306-67-2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses include laboratory chemicals, synthesis of substances, scientific research and development

1.3. Details of the supplier of the safety data sheet

Company: SLI Technologies, Inc
8119 Opportunity Dr
Milton, FL 32583
USA

Telephone: (850) 626-6290

1.4. Emergency telephone number

Emergency Phone: (850) 336-0995

2. Hazards Identification

2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

2.2. GHS Label elements, including precautionary statements



Pictogram:

Signal Word: Warning

Hazard Statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and 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.

P321 Specific treatment. See supplemental first aid.

P332+P313 If skin irritation occurs, get medical advice/attention.

P337+P313 If eye irritation persists, get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

None

3. Composition/Information on Ingredients

Chemical Name:	N,N'-Bis (3-Aminopropyl)-1,4-Butanediamine Tetrahydrochloride
Common name/synonyms:	Spermine tetrahydrochloride 1,4-Bis (aminopropyl) butanediamine tetrahydrochloride Gerontine tetrahydrochloride Musculamine tetrahydrochloride Neuridine tetrahydrochloride
CAS #:	306-67-2
MF:	C10H26N4•4HCl
MW:	348.18
EC No:	206-189-8

4. First Aid Measures

4.1. Description of first aid measures

General

Consult a physician. Show this safety data sheet to the attending doctor. Move out of dangerous area.

If inhaled

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

In case of skin contact

In case of skin contact, immediately wash with soap and copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

In case of eye contact

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

If swallowed

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

5. Fire Fighting Measures

5.1. Flash Point

No data available.

5.2. Special hazards arising from substance

Carbon oxides, nitrogen oxides (NO_x), hydrogen chloride gas.

5.3. Extinguishing Media

Water spray, alcohol resistant foam, carbon dioxide, or dry chemical powder.

5.4. Special Firefighting Procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.5. Unusual Fire and Explosion Hazards

Emits toxic fumes under fire conditions.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment, and emergency procedures

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Ventilate area and wash spill site after material pick up is complete. Evacuate area.

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

See section 8 for personal protection.

See section 13 for disposal.

7. Handling and Storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust can form. See 2.2 for precautions.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Hygroscopic, store under inert gas. Keep in a dry place.

Recommended storage temperature: 2-8°C.

7.3. Specific end uses

None other than those mentioned in section 1.2.

8. Exposure Controls/Personal Protection

8.1. Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2. Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday. Avoid prolonged or repeated exposure.

Personal protective equipment

Eye/face protection

Use compatible chemical-resistant gloves, face shields, and chemical safety goggles certified by NIOSH (US) or EU 166(EU).

Skin protection

Handle with gloves. Use proper glove removal technique. Dispose of contaminated gloves. Wash and dry hands.

Body protection

Select according to concentration and amount of substance. Wash contaminated clothing before reuse. Dispose of contaminated shoes.

Respiratory protection

Use appropriate respirators as approved under NIOSH (US) or EU 166(EU).

Control of environmental exposure

Do not let product enter drains.

9. Physical and Chemical Properties**9.1. Physical and chemical properties**

Appearance:	Form: powder Color: clean, white to off-white
Odor:	Pungent
Odor threshold:	No data available
Boiling point:	No data available
Melting point:	310-311°C (decomposes)
Flash Point:	No data available
Specific Gravity:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Water solubility:	1 M in H ₂ O, 20C, complete, colorless to light yellow
pH:	5.0-7.0
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Partition coefficient n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

10. Stability and Reactivity**10.1. Reactivity**

No data available.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatibilities

Strong oxidizing agents.

10.6. Hazardous Combustion or Decomposition Products

Other decomposition products: no data available. See section 5 in the event of fire.

10.7. Hazardous Polymerization

Will not occur.

11. Toxicological Information

11.1. Acute Toxicity

Inhalation: No data available.

Dermal: No data available.

IPR-RAT LD50: 370 mg/kg: behavioral; convulsions or effect on seizure threshold.

Behavioral: change in motor activity (specific assay). Lungs, thorax, or respiration: other

Exposure/Symptoms

No data available.

11.2. Skin corrosion/irritation

Causes skin irritation.

11.3. Respiratory/Ingestion

Irritating to mucous membranes and upper respiratory tract.

11.4. Eye damage/irritation

Causes eye irritation.

11.5. Germ cell mutagenicity

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation Test</u>
Human	2 MMOL/L	HeLa cell	Cytogenetic analysis
Mammal	16700 NMOL/L	lymphocyte	DNA

11.6. Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.

11.7. Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological Information

12.1. Toxicity

No data available.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

Assessments not available/not required or conducted.

12.6. Other adverse effects

No data available.

13. Disposal Considerations

13.1. Waste treatment methods

Product

Contact a licensed professional waste disposal service to dispose of this material.
Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. Transport Information

DOT (US)

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

15. Regulatory Information

15.1. European Information

No data available

15.2. Reviews, Standards, and Regulations

SARA 302: Not subject to reporting requirements.

SARA 313: Does not exceed threshold.

SARA 311/313 Hazards: Acute health hazard.

Massachusetts Right to Know Components: No components are subject to the Act.

Pennsylvania Right to Know Components: 4,9-Diazoniadodecamethylenediammonium tetrachloride; CAS #306-67-2

New Jersey Right to Know Components: 4,9-Diazoniadodecamethylenediammonium tetrachloride; CAS #306-67-2

California Prop 65 Components: Does not contain chemicals known to the state to cause cancer, birth defects, or any other reproductive harm.

16. Other Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This document does not guarantee the properties of the product. SLI Technologies, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product.