

Safety Data Sheet

Revision Date: 11/9/2023

Section 1: Chemical Identification

1.1 Chemical Identification

Product Name: Spermine
Alternative Name: N,N'-Bis(3-aminopropyl)-1,4-butanediamine
Catalog Number: S-730

1.2 Relevant Uses and Uses Advised Against

Recommended use: This product is not for use in humans. It is for research purposes only.

1.3 Supplier Contact Information

Distributed by: Gold Biotechnology, Inc.
1328 Ashby Rd.
St. Louis, MO 63132
Phone: (314) 890-8778
Fax: (314) 890-0503
Email: contactgoldbio86@goldbio.com

1.4 Emergency Contact Information

Emergency Phone: (800)248-7609 (Monday-Friday, 9:00 a.m. – 5:00 p.m. CST)

Section 2: Hazardous Information

2.1 GHS Classification

Skin Corrosion (Category 1B)
Serious Eye Damage (Category 1)

2.2 GHS Label Elements, Including Precautionary statements



DANGER!

2.3 Hazard Statements

H314: Causes severe skin burns and eye damage

2.4 Precautionary Statements

P260: Do not breathe dust/fume/gas/mist/vapours/spray

P264: Wash skin thoroughly after handling

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

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P305+351+338: 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/physician

P321: Specific treatment (see First Aid Measures on this label)

P363: Wash contaminated clothing before reuse

P405: Store locked up

P501: Dispose of contents/container to an approved waste disposal plant

2.5 OSHA Hazards

Corrosive

2.8 HMIS Classification

Health Hazard:	3
Chronic Health Hazard:	*
Flammability:	1
Physical Hazards:	0

2.9 NFPA Rating

Health Hazard:	3
Fire:	1
Reactivity Hazard:	0

Section 3: Composition/Information on Ingredients

3.1 Composition

Identity:	Spermine
IUPAC:	N,N'-bis(3-aminopropyl)butane-1,4-diamine
Synonyms:	Gerontine; N,N'-Bis(3-aminopropyl)-1,4-diaminobutane; Neuridine; Musculamine
CAS Number:	71-44-3
Molecular Formula:	C ₁₀ H ₂₆ N ₄
Molecular Weight:	202.35 g/mol

Section 4: First Aid Measures

4.1 Detailed First Aid Measures

Inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin:	Immediately wash skin copiously with soap and water. Take victim immediately to hospital. Consult a physician.
Eye:	Immediately rinse out with water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Consult a physician.
Ingestion:	Wash out mouth with water. Drink plenty of water. Consult a

physician. Never give anything by mouth to an unconscious person.

Notes to Physician: Treat symptomatically and supportively.

4.2 Most Important Symptoms And Effects, Either Acute Or Delayed

The most important known symptoms and effects are described in the labeling (see section 2). And /or in section 11.

4.3 Indication of immediate medical attention and special treatment needed

Not available

Section 5: Fire Fighting Measures

5.1 Conditions of flammability:

5.2 Suitable extinguishing media:

Alcohol-resistant foam, dry chemical or carbon dioxide. Do not use water!

5.3 Specific hazards arising from the chemical

During a fire, highly toxic gases may be generated by thermal decomposition or combustion – Carbon Oxides, Nitrogen Oxides (NO_x).

5.4 Specific protective actions for fire-fighters:

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

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

6.2 Environmental precautions:

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up:

Soak up with absorbent material, discard.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Always wear personal protective equipment (PPE, see section 8).

7.2 Conditions for safe storage, including and incompatibilities:

Keep container tightly closed. Moisture sensitive.

Store desiccated at 4°C. Protect from light and air.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters:

Contains no substances with occupational exposure limit values.

8.2: Appropriate engineering controls:

Contains no substances with occupational exposure limit values.

8.3 Personal Protective Equipment (PPE):

Eye/Face Protection: Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique - without touching outer surface of glove - to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Other Protective Clothing or Equipment: Wear appropriate protective clothing to prevent exposure.

Section 9: Physical and Chemical Properties

9.1 General chemical and physical properties

Appearance:	Colorless Solidified mass or fragments
Odor:	Not Available
Odor Threshold:	Not Available
pH:	Not Available
Melting Point:	28 - 30°C
Freezing Point:	Not Available
Boiling Point/Range:	150°C
Flash Point:	110°C
Evaporation Rate:	Not Available
Lower Explosion Limit:	Not Available
Upper Explosion Limit:	Not Available
Vapor Pressure:	Not Available
Vapor Density:	Not Available

Relative Density:	0.937 g/cm ³
Solubility:	Not Available
Partition Coefficient n-octanol/water:	Not Available
Auto-Ignition Temperature:	Not Available
Decomposition Temperature:	Not Available
Viscosity:	Not Available

Section 10: Stability and Reactivity Data

10.1 Reactivity:

Not available

10.2 Chemical Stability:

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions:

Not available.

10.4 Conditions to avoid:

Incompatible materials, light, moisture.

10.5 Incompatible materials:

Acids, Acid chlorides, Acid anhydrides, Oxidizing agents.

10.6 Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions. - Carbon Oxides, Nitrogen Oxides.

Section 11: Toxicological Information

11.1 Toxicological effects

Acute toxicity:

Spermine Intraperitoneal: LD₅₀ (Rat) - 33 mg/kg Remarks: Lungs, Thorax, or Respiration:
Other changes. Kidney, Ureter, Bladder: Changes in tubules
(including acute renal failure, acute tubular necrosis).
Nutritional and Gross Metabolic: Dehydration.

Skin corrosion/irritation:

Not available.

Respiratory or skin sensitization:

Not available.

Germ cell mutagenicity:

Genotoxicity in vitro - mouse - lymphocyte

Cytogenetic analysis
Genotoxicity in vitro - Hamster - Kidney
DNA inhibition

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 by IARC.
- ACGIH:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.
- 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 by NTP.
- OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity:

Not available.

STOT-single exposure:

Not available.

STOT-repeated exposure:

Not available.

Aspiration hazard:

Not available.

Likely routes of exposure:

Respiratory organs, mouth, skin, and eyes.

Symptoms of exposure:

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

Additional Information:

RTECS: EJ7175000

Section 12: Ecological Information

12.1 Toxicity:

Not available.

12.2 Persistence and degradability:

Not available.

12.3 Bioaccumulative potential:

Not available.

12.4 Mobility in soil:

Not available.

12.5 Other adverse effects:

None.

Section 13 Disposal Considerations

Dispose of product in accordance with local rules and regulations.

Section 14: Transport Information

14.1 US Department of Transportation (DOT)

UN Number: 3259
Proper shipping name: Polyamines, solid, corrosive n.o.s. (Spermine)
Class: 8
Packing Group: II
Marine Pollutant: No

14.2 International Maritime Dangerous Goods (IMDG):

UN Number: 3259
Proper shipping name: Polyamines, solid, corrosive n.o.s. (Spermine)
Class: 8
Packing Group: II
Marine Pollutant: No

14.2 International Air Transportation Association (IATA)

UN Number: 3259
Proper shipping name: Polyamines, solid, corrosive n.o.s. (Spermine)
Class: 8
Packing Group: II
Marine Pollutant: No

Section 15: Regulatory Information

SARA 302 Components:

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

Acute Health Hazard

Massachusetts Right To Know Components:

4,9-Diazadodecamethylenediamine

CAS - No.

71-44-3

Pennsylvania Right To Know Components:

CAS - No.

4,9-Diazadodecamethylenediamine

71-44-3

New Jersey Right To Know Components:

CAS - No.

4,9-Diazadodecamethylenediamine

71-44-3

California Prop. 65 Components:

This product does not contain any chemical known to the State of California to cause cancer, birth, or any other reproductive defects.

Section 16: Other Information

While Gold Biotechnology, Inc. believes the information contained herein to be true and accurate, it has relied on information provided by others. Gold Biotechnology, INC. makes no warranties, express or implied, as to the accuracy or adequacy of the information contained herein or with respect to the results to be obtained from the use of the product. Gold Biotechnology, Inc. disclaims all liability with respect to the use of this product, including without limitation, liability for injury to the user or third-party persons.

Preparation Information

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