SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	1,6-Hexanediamine
CAS number	124-09-04
Synonyms	Hexamethylenediamine

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

Identified uses	Laboratory chemicals

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Flammable liquids	Category 4
Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1B
Specific target organ toxicity - single exposure	Category 3
Target organs - Respiratory system	

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger

Hazard statements

Prevention	Wash face, hands and any exposed skin thoroughly after handling
	Do not eat, drink or smoke when using this product
	Wear protective gloves/protective clothing/eye protection/face protection
	Do not breathe dust/fume/gas/mist/vapors/spray
	Use only outdoors or in a well ventilated area
	Keep away from heat/sparks/open flames/hot surfaces. - No smoking
	Keep cool
Response	Immediately call a POISON CENTER or doctor/physician
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin	Wash contaminated clothing before reuse
	IF ON SKIN (or hair): Take off immediately all contmainated clothing. Rinse skin with water/shower
Eyes	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion	Rinse mouth
	Do NOT induce vomiting
Fire	In case of fire: Use CO2 dry chemical or foam for extinction.
Storage	Store locked up
	Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents/container to an approved waste disposal plant.

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

None identified

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Hexamethylenediamine	1,6-Diaminohexane; 1,6-Hexanediamine	124-09-4	>95%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Do NOT induce vomiting. Call a physician or poison control center immediately.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
If swallowed	Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO2, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable extinguishing media	No information available

5.2 Specific hazards arising from the substance or mixture

Combustible material. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved ro equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

5.4 Further information

Flash Point	81 °C
Autoignition Temperature	310 °C
Explosion limits	
Upper	6.3 vol %

Lower 0.7 vol %
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available
NFPA

Health	Flammability	Instability	Physical hazards
3	2	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid dust formation.

6.2 Environmental precautions

Should not be released into the environment. See section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wear personal protective equipment/face protection. Keep away from open flames, hot surfaces and sources of ignition. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Do not breathe. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene measures

Handle in accordance with good industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Corrosives area. Incompatible materials. Strong oxidizing agents.

Incompatibilities

Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. ACGIH Threshold Limit Values

Component	Type	Value
Hexamethylenediamine	TWA	0.5 ppm

8.2 Exposure controls

Appropriate engineering controls

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

Do not allow to be released into the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid
Appearance	Colorless
Odor	Amine compounds
Odor Threshold	No information available
pH	12 1% aq. solution
Melting Point/Range	38 - 41 °C / 100.4 - 105.8 °F
Boiling Point/Range	204 - 205 °C / 399.2 - 401 °F @ 760 mmHg
Evaporation Rate	Not applicable
Flammability (solid)	No information available
Flammability or explosive limit	

Upper	6.3 vol %
Lower	0.7 vol %
Vapor Pressure	2 mbar @ 50 °C
Vapor Density	Not applicable
Density	No information available
Solubility	Partially soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	310 °C / 590 °F
Decomposition Temp	No information available
Viscosity	Not applicable
Molecular Formula	C6 H16 N2
Molecular Weight	116.21
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information
No information available

SECTION 10: Stability and reactivity

10.1 Reactivity
None known, based on information available

10.2 Chemical stability
Hygroscopic

10.3 Possibility of hazardous reactions
None under normal processing

10.4 Conditions to avoid
Incompatible products. Avoid dust formation. Exposure to moist air or water. Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hexamethylenediamine	750 mg/kg	1110 mg/kg	Not listed

Skin corrosion/irritation
Causes burns by all exposure routes.

Serious eye damage/eye irritation
Causes burns by all exposure routes.

Respiratory or skin sensitization
No information available

Germ cell mutagenicity
No information available

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Hexamethylenediamine	124-09-4	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure
Respiratory system

Specific target organ toxicity - repeated exposure
None known

Reproductive toxicity
No information available

Chronic effects
No information available

11.2 Additional Information
No information available

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
Hexamethylenediamine	EC50	Freshwater Algae	14.8 mg/L, 96h
	EC50	Freshwater Algae	15 mg/L, 72h
	LC50	Freshwater Fish	62 mg/L, 96h
	EC50	Microtox	85 mg/L, 2h
	EC50	Water Flea	23.4 mg/L, 48h

12.2 Persistence and degradability
Soluble in water. Persistence is unlikely based on information available.

12.3 Bio accumulative potential

No information available

12.4 Mobility in soil
Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment
No information available

12.6 Endocrine disrupting properties
No information available

12.7 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no.	UN2280
Proper Shipping Name	HEXAMETHYLENEDIAMINE, SOLID
Hazard Class	8
Packing Class	III

IMDG

UN-no.	UN2280
Proper Shipping Name	HEXAMETHYLENEDIAMINE, SOLID
Hazard Class	8
Packing Class	III

IATA

UN-no.	UN2280
Proper Shipping Name	HEXAMETHYLENEDIAMINE, SOLID
Hazard Class	8
Packing Class	III

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not applicable

CERCLA Hazardous Substance List (40 CFR 302.4)

Not applicable

SARA 304 Emergency release notification

Not regulated

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See section 2 for more information

SARA 313 (TRI reporting)

Not regulated

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated

US state regulations

US. Massachusetts RTK - Substance List

Listed

US. New Jersey Worker and Community Right-to-Know Act

Listed

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed

California Proposition 65

Not listed

SECTION 16: Other information

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Revision 0

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.