

**Section 1: IDENTIFICATION**

**Product Name:** WANAMINE™ H12MDA

**Synonyms:** Not available.

**Product Use:** Component in production of epoxy, coating and polyamide substances.

**Restrictions on Use:** Industrial uses only, not intended for consumer and domestic (household) uses.

**Manufacturer/Supplier:** Wanhua Chemical (America) Co., Ltd.  
3803 West Chester Pike, Suite 240  
Newtown Square, PA 19073

**Phone Number:** Customer service telephone: 610-566-5297  
Telephone in Canada: 833-213-6057

**Emergency Phone:** North America: Chemtrec 800-424-9300 (domestic)  
+1-703-527-3887 (international, collect calls accepted)

**Date of Preparation of SDS:** July 27, 2023

**Section 2: HAZARD(S) IDENTIFICATION**
**GHS INFORMATION**

**Classification:** Acute Toxicity - Oral, Category 4  
Skin Corrosion, Category 1A  
Eye Damage, Category 1  
Sensitization - Skin, Category 1  
Specific Target Organ Toxicity (Repeated Exposure), Category 2

**LABEL ELEMENTS**
**Hazard**
**Pictogram(s):**


**Signal Word:** Danger

**Hazard Statements:** Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statements**

**Prevention:** Do not breathe mist, vapours, or spray.  
Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves, protective clothing, eye protection and face protection.

**Response:** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor.  
Rinse mouth.  
If skin irritation or rash occurs: Get medical attention.  
Wash contaminated clothing before reuse.

**Storage:** Store locked up.

**Disposal:** Dispose of contents and container in accordance with applicable regional, national and local laws and regulations.

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients with Unknown Toxicity:** None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

### Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Cyclohexanamine, 4,4'-methylenebis-	1,4-Bis(aminocyclohexyl)methane	1761-71-3	99 - 100

### Section 4: FIRST-AID MEASURES

**Inhalation:** If inhaled: Remove person to fresh air and keep comfortable for breathing.

**Acute and delayed symptoms and effects:** May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. In animal tests with rats, when heated to temperatures 300 °C (572 °F) and greater, the emanating vapor and fumes caused severe respiratory irritation or corrosion.

**Eye Contact:** If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

**Acute and delayed symptoms and effects:** Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Skin Contact:** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a poison center or doctor. If skin irritation or rash occurs: Get medical attention. Wash contaminated clothing before reuse.

**Acute and delayed symptoms and effects:** May cause an allergic skin reaction. Causes severe skin burns. Signs/symptoms may include

localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

**Ingestion:** If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.

**Acute and delayed symptoms and effects:** Harmful if swallowed. Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

**General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

**Note to Physicians:** Symptoms may not appear immediately.

### Section 5: FIRE-FIGHTING MEASURES

#### FLAMMABILITY AND EXPLOSION INFORMATION

Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

**Sensitivity to Mechanical Impact:** This material is not sensitive to mechanical impact.

**Sensitivity to Static Discharge:** This material is sensitive to static discharge at temperatures at or above the flash point.

#### MEANS OF EXTINCTION

**Suitable Extinguishing Media:** Small Fire: Dry chemical, CO<sub>2</sub> or water spray.

Large Fire: Dry chemical, CO<sub>2</sub>, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.

**Unsuitable Extinguishing Media:** Do not use straight streams.

**Products of Combustion:** Oxides of carbon. Oxides of nitrogen. Ammonia.

**Protection of Firefighters:** Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended

by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

**Section 6: ACCIDENTAL RELEASE MEASURES**

- Emergency Procedures:** As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate enclosed areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Personal Precautions:** Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8.
- Environmental Precautions:** Prevent entry into waterways, sewers, basements or confined areas.
- Methods for Containment:** Stop leak if you can do it without risk.
- Methods for Clean-Up:** Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. DO NOT GET WATER INSIDE CONTAINERS.
- Other Information:** See Section 13 for disposal considerations.

**Section 7: HANDLING AND STORAGE****Handling:**

Do not swallow. Do not breathe mist, vapours, or spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. See Section 8 for information on Personal Protective Equipment.

**Storage:**

Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

**Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure Guidelines****Component**

1,4-Bis(aminocyclohexyl)methane [CAS No. 1761-71-3]

**ACGIH:** No TLV established.

**OSHA:** No PEL established.

**PEL:** Permissible Exposure Limit

**TLV:** Threshold Limit Value

**Engineering Controls:** Not normally required.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)


**Eye/Face Protection:**

Wear chemical safety goggles, and full face shield. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3:20 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

**Hand Protection:**

Wear protective gloves. Consult manufacturer specifications for further information.

**Skin and Body Protection:**

Wear protective clothing. Clothing with full length sleeves and pants should be worn.

**Respiratory Protection:**

If ventilation is inadequate then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-18, with organic vapor/acid gas cartridge and particulate filter, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

**General Hygiene Considerations:**

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Colourless and transparent. Liquid at normal room temperatures. Waxy solid at temperatures below 15°C (59 °F).
<b>Colour:</b>	Colourless and transparent.
<b>Odour:</b>	Amine.
<b>Odour Threshold:</b>	Not available.
<b>Physical State:</b>	Liquid at normal room temperatures. Waxy solid at temperatures below 15°C (59 °F).
<b>pH:</b>	11.5 to 12
<b>Melting Point / Freezing Point:</b>	10 to 15 °C (50 to 59 °F)
<b>Initial Boiling Point:</b>	320 °C (608 °F)
<b>Boiling Range:</b>	Not available.

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<b>Flash Point:</b>	100 °C (212 °F) (ASTM D92)
<b>Evaporation Rate:</b>	Not available.
<b>Flammability (solid, gas):</b>	Not applicable.
<b>Lower Flammability Limit:</b>	0.9 %
<b>Upper Flammability Limit:</b>	4.4 %
<b>Vapor Pressure:</b>	< 0.1 mmHg at 38 °C (100.4 °F)
<b>Relative Vapor Density:</b>	7.24 (Air = 1)
<b>Relative Density:</b>	0.96 (Water = 1) at 20 °C (68 °F)
<b>Solubilities:</b>	Insoluble in water.
<b>Partition Coefficient: n-Octanol/Water:</b>	2.03 at 25 °C (77 °F)
<b>Auto-ignition Temperature:</b>	Not available.
<b>Decomposition Temperature:</b>	Not available.
<b>Kinematic Viscosity:</b>	Not available.
<b>Dynamic Viscosity:</b>	80 mPa.s at 25 °C (77 °F)
<b>Percent Volatile, wt. %:</b>	Not available.
<b>VOC content, wt. %:</b>	Not available.
<b>Density:</b>	Not available.
<b>Coefficient of Water/Oil Distribution:</b>	Not available.
<b>Particle Characteristics:</b>	Not available.

**Section 10: STABILITY AND REACTIVITY**

<b>Reactivity:</b>	Contact with incompatible materials. Sources of ignition. Exposure to heat.
<b>Chemical Stability:</b>	Stable under normal storage conditions.
<b>Possibility of Hazardous Reactions:</b>	None known.
<b>Conditions to Avoid:</b>	Contact with incompatible materials. Sources of ignition. Exposure to heat. Avoid exposing product to air. Avoid contact with copper, aluminum and their alloys.
<b>Incompatible Materials:</b>	Strong acids. Strong oxidizers. Isocyanates.
<b>Hazardous Decomposition Products:</b>	Not available.

**Section 11: TOXICOLOGICAL INFORMATION****EFFECTS OF ACUTE EXPOSURE****Product Toxicity**

**Oral:** Not available.

**Dermal:** Not available.

**Inhalation:** Not available.

**Component Toxicity**

Component	CAS No.	LD <sub>50</sub> oral	LD <sub>50</sub> dermal	LC <sub>50</sub>
1,4-Bis(aminocyclohexyl)methane	1761-71-3	Not available.	Not available.	400 mg/m <sup>3</sup> (mouse); 4H

**Likely Routes of Exposure:** Eye contact. Skin contact. Inhalation. Ingestion.

**Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system.

**Symptoms (including delayed and immediate effects)**

**Inhalation:** May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. In animal tests with rats, when heated to temperatures 300 °C (572 °F) and greater, the emanating vapor and fumes caused severe respiratory irritation or corrosion.

**Eye:** Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

**Skin:** May cause an allergic skin reaction. Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

**Ingestion:** Harmful if swallowed. Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

**Skin Sensitization:** Hazardous by OSHA/WHMIS criteria. May cause sensitisation through skin contact.

**Respiratory Sensitization:** Not available.

**Medical Conditions** Not available.

**Aggravated By Exposure:**

**EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)**

**Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system.

**Chronic Effects:** Hazardous by OSHA/WHMIS criteria. May cause chronic effects. Prolonged or repeated contact may dry skin and cause irritation. 90-day, repeated oral doses in rats caused vacuolar degeneration in liver and skeletal muscle.  
NOAEL (oral) = 5 mg/kg bw/day  
NOAEC (inhalation) = 12 mg/m<sup>3</sup>



LOAEL = 17 mg/kg bw/day.

**Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

**Mutagenicity:** Not available.

**Reproductive Effects:** OECD Guideline 422 (28-day repeated dose toxicity/reproductive toxicity screening) results:  
Development of offspring: NOAEL = 45 mg/kg bw/day in rats  
Sexual function and fertility: NOAEL = 15 mg/kg bw/day in rats

**Developmental Effects**

**Teratogenicity:** Not available.

**Embryotoxicity:** Not available.

**Toxicologically Synergistic Materials:** Not available.

**Section 12: ECOLOGICAL INFORMATION**

**Ecotoxicity:** LC50 Freshwater fish (96-hour) 46.4 mg/L *Leusciscus idus*.  
EC50 *Daphnia magna* (48-hour) = 7.07 mg/L *Daphnia magna*.  
EC50 Freshwater algae (72-hour) = 670mg/L *Desmodesmus subspicatus*.

**Persistence / Degradability:** Not readily biodegradable.

**Bioaccumulation / Accumulation:** Not bioaccumulative.

**Mobility in Environment:** Not available.

**Other Adverse Effects:** Not available.

**Section 13: DISPOSAL CONSIDERATIONS**

**Disposal Instructions:** Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

**Section 14: TRANSPORT INFORMATION**

**U.S. Department of Transportation (DOT)**

**Proper Shipping Name:** UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (1,4-Bis(aminocyclohexyl)methane), 8, PG II

**Class:** 8

**UN Number:** UN2735

**Packing Group:** II

**Placard(s):**





**Canada Transportation of Dangerous Goods (TDG)**

**Proper Shipping Name:** UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (1,4-Bis(aminocyclohexyl)methane), 8, PG II

**Class:** 8

**UN Number:** UN2735

**Packing Group:** II

**Placard(s):**

**Section 15: REGULATORY INFORMATION****Chemical Inventories****US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

**Canada (DSL)**

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

**Federal Regulations****United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**SARA Title III**

No components are listed.

**State Regulations****Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

**New Jersey**

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

**Pennsylvania**

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.



**SAFETY DATA SHEET**

**WANAMINE™ H12MDA**

Date of Preparation: July 27, 2023

**California**

**California Prop 65:** This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

<b>Section 16: OTHER INFORMATION</b>
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**Disclaimer:**

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

**Date of Preparation of SDS:** July 27, 2023

**Version:** 1.0

**GHS SDS Prepared by:** Aegis Regulatory Inc.  
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