Ministry of Employment and Labor	Material Safety Data Sheet	Industrial Accident Prevention Korea Occupational Safety and Health Agency (KOSHA)

AA00569-0000000043

1. PRODUCT AND COMPANY IDENTIFICATION

A. Product Name: 2-methyl-1,5-pentamethylenediamine

B. Recommended Use and Restrictions on Use

Recommended use	An alkyl diamine compound capable of forming the corresponding hydrochloride salt upon reaction with hydrochloric acid. It can be used as an acid-binding agent in organic synthesis reactions and as a monomer for polymer material synthesis.
Restrictions on use	Not available

C. Supplier Information

Company Name	GloryGlobal Co., Ltd.
Address	Room 1004, Seoul-Technopark, inside Seoul Tech, 232, Gongneung-ro, Nowon-gu, Seoul, Korea 01811
Emergency Phone Number	02-6223-0862

D. Additional Details of Manufacturer/Supplier

2. Hazards Identification

A. Classification of Hazards: Not classified as a hazardous substance.

Physical Hazards	Flammable liquids – Category 4
Health Hazards	Acute toxicity (oral) – Category 4
	Acute toxicity (inhalation) – Category 4
	Skin corrosion/irritation – Category 1A
	Serious eye damage/eye irritation – Category 1
	Specific target organ toxicity (single exposure) – Category 3

B. GHS Label Elements

Pictogram

Signal Word	Danger
Hazard Statements	Flammable liquid

	Harmful if swallowed
	Harmful if inhaled
	Causes severe skin burns and eye damage
	May cause respiratory irritation

Precautionary Statements

Prevention:	Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
	Do not breathe dust or mist.
	Avoid breathing dust/fume/gas/mist/vapors/spray.
	Wash hands thoroughly after handling. Avoid contact with eyes.
	Use only outdoors or in a well-ventilated area.
	Wear protective gloves/protective clothing/eye protection/face protection.
Response:	If swallowed: Rinse mouth. Do NOT induce vomiting.
	If on skin: Wash with plenty of water. Immediately remove all contaminated clothing and rinse skin with water/shower. Soak affected area for several minutes.
	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.
	Get immediate medical attention.
	Remove and wash contaminated clothing before reuse.
	In case of fire: Use dry chemical, carbon dioxide (CO_2), water spray, or regular foam to extinguish.
Storage:	Store in a well-ventilated place. Keep container tightly closed.
Disposal:	Dispose of contents/container in accordance with local regulations.

C. Other Hazards Not Included in the Classification Criteria (e.g., dust explosion hazard)

Not applicable

3. Composition / Information on Ingredients

Substance Name	2-methyl-1,5-pentamethylenediamine
Synonym (Common Name)	
CAS Number	15520-10-2
Content (%)	100%

4. First-Aid Measures

A. Eye Contact	Immediately flush eyes with plenty of water, including under the eyelids, for at least 15 minutes. Seek medical attention immediately.
B. Skin Contact	Remove contaminated clothing and shoes immediately. Rinse skin thoroughly with running water for at least 15 minutes. Seek medical attention immediately.
C. Inhalation	Move the victim to fresh air immediately. If needed, provide oxygen or artificial respiration. If the victim has inhaled the substance, initiate rescue breathing. Use a pocket mask with a one-way valve or other proper respiratory medical device.
D. Ingestion	If the substance is swallowed, contact a physician or poison control center immediately. Rinse the mouth thoroughly with water. Do not give anything by mouth to an unconscious or convulsing person. Do not induce vomiting unless directed by medical personnel. If vomiting occurs naturally, keep the victim leaning forward to reduce the risk of aspiration.
E. Other Notes	Corrosive. This product causes burns to the eyes, skin, and mucous membranes. May cause permanent eye damage, including blindness. Provide immediate medical attention based on the symptoms presented.

5. Fire-Fighting Measures

A. Suitable (and Unsuitable) Extinguishing Media

Suitable extinguishing media:	Small fires: Dry chemical, CO_2, water spray, or regular foam. Large fires: Water spray, fog, or regular foam.
Unsuitable extinguishing media:	Do not use strong water jets, as this may spread the fire.

B. Specific Hazards Arising from the Chemical

Fire may produce irritating and toxic gases or fumes.

Thermal decomposition may generate nitrogen oxides, carbon oxides, and carbon monoxide.

C. Special Protective Equipment and Precautions for Firefighters

Wear full protective gear including helmet, self-contained positive pressure or pressure-demand breathing apparatus (SCBA), protective clothing, and face shield.

If safe to do so, remove containers from the fire area. Do not spray spilled material with high-pressure water.

6. Accidental Release Measures

A. Personal Precautions, Protective Equipment, and Emergency Procedures

Avoid contact with the released material.

	Emergency responders: Restrict access to unnecessary personnel. Ventilate the area before entering enclosed spaces. Do not handle damaged containers or spilled material without appropriate protective equipment. Eliminate all ignition sources. Stay upwind of the spill.
B. Environmental Precautions	
	Prevent entry into waterways, sewers, basements, or confined areas. Do not release into the environment.
C. Methods and Materials for Containment and Cleaning Up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in the immediate area). Extinguish all nearby open flames. For liquid spills: Build a dike away from the spill to contain for later disposal. If recovery is not possible, move the container to a safe, open area. For large spills: Stop the flow of material if it can be done without risk. If recovery is not possible, transfer the container to a safe and open location. Absorb spill with non-combustible material such as vermiculite, sand, or earth and place it in a suitable container for disposal. Do not return spilled material to the original container for reuse. Clean up in accordance with all applicable regulations. For small spills: Wipe up with absorbent materials (e.g., cloth, fleece).

7. Handling and Storage

A. Precautions for Safe Handling	Do not breathe gas/fumes/vapor/spray. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling and before eating. Wear self-contained breathing apparatus and protective clothing. Do not handle or store near flames, heat, or other ignition sources.
B. Conditions for Safe Storage	Store away from strong oxidizing agents. Keep away from heat, sparks, and open flames. Keep containers tightly closed. Store in sealed containers, separated from incompatible materials. Store in a well-ventilated area.

8. Exposure Controls / Personal Protection

A. Exposure Limits and Biological Standards

ACGIH	Not available
Biological Exposure Limits	Not available
Other Exposure Limits	Not available
B. Appropriate Engineering Controls	Ensure adequate ventilation. Ventilation should effectively remove and prevent accumulation of vapors generated during handling or thermal processing. Respiratory protection may be required if exposure exceeds the occupational exposure limits (OEL). Provide accessible eye wash stations.
Respiratory Protection:	Appropriate respiratory protection is recommended.
Eye Protection	Wear safety glasses with side shields (or goggles) and a face shield. Emergency eye wash and safety showers should be available in the work area.
Hand Protection	Use waterproof gloves. Recommended material: Nitrile rubber Permeation time: > 480 minutes Thickness: 0.5 mm
Thermal Protection	Wear protective clothing as required.

9. Physical and Chemical Properties

A. Appearance

Appearance	Liquid
Color	Clear and colorless
B. Odor	Not available
C. Odor Threshold	Not available
D. pH	> 900 g/L (23.4 ℃)
E. Melting/Freezing Point (℃)	>-75<-20℃
F. Initial Boiling Point and Boiling Range	192℃
G. Flash Point	81℃
H. Evaporation Rate	Not available

I. Flammability (solid, gas)	Not available
J. Upper/Lower Flammability or Explosive	Not applicable
K. Vapor Pressure	26.1 Pa (20 °C)
L. Solubility	Not available
M. Dynamic Viscosity	2.63 cP (22.6°C (73°F))
N. Relative Density	0.865 (20 °C)
O. Specific Gravity	
P. n-Octanol/Water Partition Coefficient	Not available
Q. Partition Coefficient (log Pow)	log Pow <= 1 (25 °C, pH 9)
R. Auto-ignition Temperature	350°C
S. Decomposition Temperature	Not available
T. Viscosity	Not available
U. Molecular Formula	C6H16N2
V. Molecular Weight	116.2

10. Stability and Reactivity

A. Chemical Stability and Possibility of Hazardous Reactions

The substance is stable under normal storage and handling conditions.

Stable under normal conditions.

No hazardous reactions are known under conditions of normal use.

B. Conditions to Avoid (e.g., static discharge, shock, vibration)

May form explosive mixtures with air.
Avoid temperatures exceeding the decomposition temperature.

C. Incompatible Materials

Strong oxidizing agents, strong acids

D. Hazardous Decomposition Products

Nitrogen oxides (NOx), carbon monoxide (CO)

11. Toxicological Information

A. Likely Routes of Exposure

B. Health Hazard Information

Acute Toxicity

LD50(Oral, rat)	1690mg/kg body weight
LD50(Dermal, rabbit):	No data available
LC50(Inhalation, rat):	4.9mg/L,1 hour
Skin Corrosion/Irritation	Causes severe skin burns and eye damage.
Serious Eye Damage/Irritation	Causes serious eye damage.
Respiratory Sensitization	No data available
Skin Sensitization	No data available
Carcinogenicity	No data available
Occupational Safety and Health Act	No data available
Notification of the Ministry of Employment and Labor	No data available
Germ Cell Mutagenicity	No data available
Reproductive Toxicity	No data available
Specific Target Organ Toxicity – Single Exposure	May cause respiratory irritation.
Specific Target Organ Toxicity – Repeated Exposure	No data available
Aspiration Hazard	No data available
Other Adverse Effects	No data available

12. Ecological Information

A. Ecotoxicity

LC50 (Fish, 96 hr)	1825mg/L
EC50 (Daphnia magna, 48 hr)	No significant or known adverse effects reported
EC50 (Algae, 72 hr)	> 100mg/L
NOEC (Fish)	Data not available
NOEC (Daphnia magna)	>= 9.3mg/L
NOEC (Algae)	10mg/L

B. Persistence and Degradability

Persistence	Data not available
Degradability	Readily biodegradable

C. Bioaccumulative Potential

Bioaccumulation	oes not bioaccumulate

Biodegradation	Data not available
D. Mobility in Soil	Data not available
E. Other Adverse Effects	No known significant effects or critical hazards related to ozone depletion, photochemical ozone creation potential, endocrine disruption, or global warming potential.

13. Disposal Considerations

A. Waste Treatment Methods	Dispose of contents/container in accordance with local/regional/national/international regulations. Collect and recover waste at a licensed waste disposal facility or dispose of in a sealed container. Containers or liners may retain product residues. This material and its container must be disposed of in a safe way (refer to disposal guidelines). Empty containers should be taken to an approved waste disposal facility for recycling or disposal.

14. Transport Information

A. UN Number	UN2735
B. Proper Shipping Name:	AMINES, LIQUID, CORROSIVE, N.O.S. (2-methyl-1,5-pentamethylenediamine)
C. Transport Hazard Class(es)	
IMDG	8
IATA	8
D. Packing Group	I
E. Marine Pollutant	Not applicable

F. Special Precautions for User

Read safety instructions, SDS, and emergency procedures before handling and transport.

15. Regulatory Information

A. Occupational Safety and Health Act

B. Chemical Control Act

C. Hazardous Materials Safety Control Act

D. Wastes Control Act Designated waste

E. Other Applicable Domestic and International Regulations:

Country / Region

Australia	Australian Inventory of Industrial Chemicals (AIIC) - Listed
Canada	Domestic Substances List (DSL) - Listed
Canada	Non-Domestic Substances List (NDSL) - Not listed
China	Inventory of Existing Chemical Substances in China (IECSC) - Listed
European Union	European Inventory of Existing Commercial Chemical Substances (EINECS) - Listed
European Union	European List of Notified Chemical Substances (ELINCS) - Not listed
Japan	Existing and New Chemical Substances (ENCS) - Listed
Korea	Existing Chemicals List (ECL) - Listed
New Zealand	New Zealand Inventory of Chemicals (NZIoC) - Listed
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS) - Listed
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory - Listed

"Listed" means this product complies with the inventory requirements of the respective country.
"Not listed" means one or more components are either not listed or are exempt under the applicable chemical inventory.

16. Other Information

A. Source of Data: No data available

B. Date of Preparation

C. Revision Number and Date

Revision Number:

Final Revision Date: 2025-05-19

D. Additional Information: Abbreviations and Terms

ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road

RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Dangerous Goods Code

ICAO: International Civil Aviation Organization

IATA: International Air Transport Association

LC50: Lethal Concentration, 50% (Median lethal concentration)

EC50 : Effective Concentration, 50% (Concentration that induces 50% of maximum effect)

NOEC: No Observed Effect Concentration
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration

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