SAFETY DATA SHEET

Poly-L-Lysine Methacrylate (PLMA)

Methacrylated Poly-L-Lysine | SKU PLMA-0.5G

Document version	1.0
Issue date	October 9, 2026
Basis	Safety assessment for Poly-L-Lysine Methacrylate research reagent. Classification based on available information for poly-L-lysine and the expected properties of the modified polymer; confirm product-specific residuals and composition.

SECTION 1: Identification

1.1 Product identifier	Poly-L-Lysine Methacrylate (PLMA)
Catalog number	PLMA-0.5G
Product description	Methacrylated poly-L-lysine, photocurable polycationic polypeptide polymer, supplied as research material.
1.2 Identified uses	Research use only. Preparation of hydrogels, bioinks and laboratory biomaterials.
Uses advised against	Not for human or veterinary diagnostic, therapeutic or clinical use; not for consumption.
1.3 Supplier / distributor	Carlsbad Bio | American Fork, Utah, USA | www.CarlsbadBio.co | Support@CarlsbadBio.co
1.4 Emergency information	For a medical emergency in the United States, call 911. Poison Control: 1-800-222-1222.

SECTION 2: Hazard(s) identification

2.1 Classification	Not classified as hazardous under OSHA/GHS based on available information for poly-L-lysine and expected PLMA composition. Product-specific hazard testing and residual-reagent data have not been provided.
2.2 Label elements	No GHS pictogram, signal word, or hazard statements assigned based on the provisional nonhazardous classification.
2.3 Other hazards	Avoid inhaling dust. Powder may irritate eyes or respiratory tract. Methacrylation reagents or residual impurities, if present, may affect hazard classification.

SECTION 3: Composition/information on ingredients

3.1 Substance	Poly-L-lysine methacrylate, chemically modified poly-L-lysine polymer.
Source material	Poly-L-lysine backbone, chemically functionalized with methacrylate groups.
CAS number	No unique CAS number confirmed for this methacrylated derivative. CAS 25988-63-0 identifies poly-L-lysine hydrobromide, not necessarily PLMA.
Composition / impurities	Degree of methacrylation, molecular weight, residual modification reagents, counterions and additives not specified; confirm with supplier documentation.

SECTION 4: First-aid measures

4.1 General	Remove from exposure. Obtain medical advice if symptoms persist.
Inhalation	Move to fresh air. Seek medical advice if breathing difficulty or irritation persists.
Skin contact	Wash thoroughly with soap and water. Remove contaminated clothing.
Eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do. Seek medical advice for persistent irritation.
Ingestion	Rinse mouth with water. Do not induce vomiting unless directed by medical personnel. Seek advice if symptoms occur.
4.2 Symptoms / effects	Dust exposure may cause irritation; product-specific toxicological data unavailable.
4.3 Medical attention	Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media	Water spray, foam, carbon dioxide or dry chemical appropriate to the surrounding fire.
5.2 Special hazards	Combustion of organic polypeptide may produce carbon oxides, nitrogen oxides and irritating fumes.
5.3 Firefighter advice	Wear self-contained breathing apparatus and protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions	Avoid dust generation and inhalation. Wear suitable laboratory PPE.
6.2 Environmental precautions	Avoid uncontrolled discharge to drains and waterways.
6.3 Cleanup	Carefully collect powder without dispersing dust. Transfer to closed, labeled container; damp-wipe residue.
6.4 References	See Sections 7, 8 and 13.

SECTION 7: Handling and storage

7.1 Safe handling	Use standard laboratory hygiene. Avoid inhalation, contact with eyes, and generating airborne powder. Protect formulations from unintended light exposure.
7.2 Safe storage	Keep tightly sealed, dry and protected from light. Store at -20°C as a precautionary recommendation unless the manufacturer specifies otherwise.
7.3 Specific end uses	Research hydrogel and bioink formulations; consult separate SDSs for photoinitiators and other reagents.

SECTION 8: Exposure controls/personal protection

8.1 Exposure limits	No PLMA-specific occupational exposure limit established.
8.2 Engineering controls	Adequate general ventilation; use local exhaust or enclosure if powder dust is generated.
Hand protection	Protective laboratory gloves.
Eye/face protection	Safety glasses or goggles.
Skin protection	Laboratory coat and suitable closed-toe footwear.
Respiratory protection	Use suitable particulate protection where engineering controls cannot adequately limit dust.

SECTION 9: Physical and chemical properties

Physical state	Solid powder (expected); verify supplied form.
Color	White to off-white (expected); verify against product specification.
Odor	Not determined.
Solubility	Expected to hydrate or dissolve in water; actual solubility depends on molecular weight, modification and counterion. Not verified for this grade.
pH	Not determined for supplied product.
Melting / boiling point	Not determined; polymer may decompose before melting.
Flash point / flammability	Not determined for supplied product. Organic powder may burn under fire conditions.
Vapor pressure / density	Not determined.
Other properties	Degree of methacrylation, molecular weight and residual monomer levels: not provided.

SECTION 10: Stability and reactivity

10.1 Reactivity	Methacrylate groups may polymerize under appropriate light/photoinitiator or other free-radical conditions.
10.2 Chemical stability	Expected to remain stable when stored under appropriate dry, cool, light-protected conditions; supplier-specific stability not established.
10.3 Hazardous reactions	Unintended polymerization may occur in formulations containing photoinitiators under suitable light exposure.
10.4 Conditions to avoid	Excess heat, moisture, dust dispersion and unintended exposure to initiating light systems.
10.5 Incompatible materials	Strong oxidizing agents; incompatible initiator systems.
10.6 Decomposition products	Carbon oxides and potentially nitrogen-containing decomposition products.

SECTION 11: Toxicological information

Acute toxicity	No product-specific quantitative data available.
Skin / eye irritation	Dust may cause mechanical irritation; formal test data unavailable.
Sensitization	No PLMA-specific sensitization data available.
Mutagenicity / carcinogenicity	No product-specific data available.
Reproductive toxicity / STOT	No product-specific data available.

Other information	Unmodified poly-L-lysine hazard data cannot establish the safety of residual methacrylation reagents in PLMA.

SECTION 12: Ecological information

12.1 Ecotoxicity	No product-specific data available.
12.2 Persistence / degradability	Biodegradation of modified poly-L-lysine has not been characterized for this product.
12.3 Bioaccumulation	No data available.
12.4 Mobility in soil	No data available.
12.5 PBT / vPvB	Not assessed.
12.6 Other effects	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment	Dispose of unused material, contaminated packaging and prepared mixtures in accordance with applicable local, state and federal regulations. Evaluate photoinitiator-containing waste separately.

SECTION 14: Transport information

14.1 UN number	Not assigned based on information currently available; verify against manufacturer SDS.
14.2 Proper shipping name	Not established.
14.3 Transport hazard class	Not expected to be regulated as dangerous goods for a dry, clean research polymer, subject to confirmation of actual composition.
14.4 Packing group	Not established.
14.5 Environmental hazards	Not determined.
14.6 Special precautions	Protect packaging from moisture and heat; follow validated cold-chain requirements if applicable.

SECTION 15: Regulatory information

15.1 Regulatory information	Supplier-specific OSHA Hazard Communication and TSCA inventory or R&D exemption status have not been verified.
15.2 Chemical safety assessment	No product-specific chemical safety assessment available.

SECTION 16: Other information

Document status	Version 1.0
Scope	Safety information for Poly-L-Lysine Methacrylate (PLMA-0.5G) distributed by Carlsbad Bio for research use only.
Limitations	Nonhazardous classification is based on poly-L-lysine safety information and expected PLMA properties. Methacrylation, residual reagents and supplier-specific composition may alter the hazard profile; confirm prior to commercial release.
Disclaimer	Information reflects available knowledge and is intended for laboratory safety communication; no warranty of product properties is implied. Users must assess their applications and comply with applicable regulations.