SAFETY DATA SHEET

Methacrylated Hyaluronic Acid (HAMA)

HAMA 150 kDa and 400 kDa | SKUs HAMA-150K-0.5G and HAMA-400K-0.2G

Document version	1.0
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Basis	Safety information for methacrylated hyaluronic acid (HAMA).

SECTION 1: Identification

Product identifier	Methacrylated Hyaluronic Acid (HAMA)
Product SKUs	HAMA-150K-0.5G (nominal 150 kDa); HAMA-400K-0.2G (nominal 400 kDa)
Description	Methacrylated hyaluronic acid polymer; molecular weight grades are nominal.
Recommended use	Research-use photocrosslinkable hydrogel and bioink precursor.
Uses advised against	Not for human or veterinary diagnostic, therapeutic, or clinical use.
Distributor	Carlsbad Bio | American Fork, Utah, USA | www.CarlsbadBio.co
Emergency information	United States: 911 for medical emergencies; Poison Control 1-800-222-1222.

SECTION 2: Hazard(s) identification

Hazard classification	Not classified as hazardous under GHS based on available information; confirm against manufacturer-specific composition.
Label elements	No GHS pictograms or signal word required based on available information.
Other hazards	Avoid dust generation. The classification of added photoinitiators or formulation components must be assessed separately.

SECTION 3: Composition/information on ingredients

Chemical description	Methacrylated hyaluronic acid (modified hyaluronan polymer).
CAS number	Not established for the modified polymer grades.
Composition	Polymer molecular weight grades: nominal 150 kDa and 400 kDa. Methacrylation level, residual reagents, counterion and additives: not provided.
Purity	Supplier lot-specific specifications and certificate of analysis required.

SECTION 4: First-aid measures

General	Remove from exposure; seek medical advice if symptoms persist.
Inhalation	Move to fresh air. Obtain medical advice for persistent coughing or breathing difficulty.
Skin contact	Wash 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; obtain medical advice if irritation persists.
Ingestion	Rinse mouth. Do not induce vomiting unless instructed by medical personnel. Seek medical advice if symptoms occur.

SECTION 5: Fire-fighting measures

Suitable extinguishing media	Use water spray, carbon dioxide, dry chemical or foam appropriate to the surrounding fire.
Specific hazards	Combustion of organic polymer may produce carbon oxides and irritating fumes; product-specific decomposition data unavailable.
Firefighter protection	Use self-contained breathing apparatus and appropriate protective clothing.

SECTION 6: Accidental release measures

Personal precautions	Avoid generating or inhaling dust. Wear gloves and eye protection.
Environmental precautions	Prevent large uncontrolled releases into drains or waterways.
Cleanup	Collect powder gently without dispersing dust; place in closed labeled waste container. Clean residual material with suitable damp absorbent.

SECTION 7: Handling and storage

Handling	Use standard laboratory hygiene; minimize dust. Do not eat, drink or smoke while handling.

Storage	Keep tightly closed, dry, cool, and protected from light. Follow product labeling for specific storage temperature.
Specific use	Research hydrogel formulations; assess separate photoinitiator and other reagent SDSs.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits	No product-specific exposure limits identified; confirm with supplier documentation.
Engineering controls	Use adequate ventilation and local dust control when weighing powders.
Hand and eye protection	Laboratory gloves, protective eyewear and suitable laboratory clothing.
Respiratory protection	If dust control is insufficient, select appropriate particulate respiratory protection under institutional safety procedures.

SECTION 9: Physical and chemical properties

Physical state	Solid powder.
Color / odor	White to off-white; odor data not available.
Water solubility	Hyaluronic acid derivatives are commonly hydrated in aqueous media; solubility and viscosity depend on modification and molecular weight. Verify for each grade.
Molecular weight	Nominal 150 kDa or 400 kDa, respectively; polymer distributions vary.
Other properties	pH, flash point, thermal properties, density, partition coefficient and vapor pressure: no grade-specific data provided.

SECTION 10: Stability and reactivity

Reactivity	Methacrylate functional groups may polymerize under suitable radical-initiating conditions.
Chemical stability	Stable under recommended storage conditions.
Hazardous reactions	Unintended polymerization possible in the presence of initiating systems; no product-specific hazard data available.
Conditions to avoid	Uncontrolled light/initiator exposure, moisture or heat where incompatible with supplier storage recommendations.
Incompatible materials	Strong oxidizers and radical initiators under conditions that promote unwanted polymerization; verify formulation compatibility.

SECTION 11: Toxicological information

Toxicological data	No quantitative product-specific toxicological data available for the listed endpoints.
Hazard classification	Not classified as hazardous based on available information; grade-specific impurities have not been independently assessed.
Experimental caution	Cytocompatibility of cured formulations depends on substitution, residual impurities, initiator, light dose and washing.

SECTION 12: Ecological information

Ecotoxicity and environmental fate	No quantitative aquatic toxicity, persistence, or bioaccumulation data available.
Environmental precautions	Avoid uncontrolled discharge; dispose of according to local requirements.

SECTION 13: Disposal considerations

Waste treatment	Dispose of unused polymer, contaminated solutions and packaging under applicable federal, state and local regulations. Follow separate SDSs for photoinitiators, solvents and other mixture components.

SECTION 14: Transport information

Transport classification	Not regulated as dangerous goods under ADR, IMDG or IATA based on available information; confirm prior to shipment.
UN number / hazard class / packing group	Not applicable.

SECTION 15: Regulatory information

Regulatory status	Supplier-specific OSHA HazCom, TSCA and other inventory/regulatory status not provided; confirm prior to commercial distribution.

SECTION 16: Other information

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Basis and limitations	Safety information is provided for research-use methacrylated hyaluronic acid. Values not established for the supplied grades are identified accordingly.
Required verification	Confirm product-specific composition, storage and transport information with the manufacturer before final approval.
Disclaimer	This preliminary SDS does not replace the manufacturer safety assessment. Users must evaluate their complete formulations and comply with applicable requirements.