

MATERIAL SAFETY DATA SHEET (MSDS)

Sodium Hyaluronate

1. Product Identification

Product name	Sodium Hyaluronate
Chemical Name	Hyaluronic Acid sodium salt (sodium hyaluronate)
Molecular Formula	$(C_{14}H_{20}NNaO_{11})_n$
Molecular weight	$(0.8-1.8) \times 10^6$ Daltons
CAS Number	9067-32-7
Origin	Biotechnologically produced; main sources for fermentation are glucose, soy peptone and yeast extract

2. Chemical and Physical Properties

Appearance	White or almost white powder
Melting point	Not available
Specific Gravity	Density:30-200 kg/m ³
Vapor Pressure, mmHg	Not available
Vapor Density, Air=1	Not available
Evaporation Rate	Not available
Viscosity	Not applicable
Solubility in Water	Easily soluble in cold water

3. Stability & Reactivity

Chemical Stability	Stable under normal conditions
Incompatibility	None know
Hazardous Decomposition	Products of combustion: carbon oxides(CO, CO ₂), nitrogen oxides (NO, NO ₂), and metallic oxides
Hazardous Polymerisation	Will not occur

4. Handling & Storage

Avoid contact with eyes. Wash thoroughly after handling. As with all chemicals, good industrial hygiene practices should be followed when handling this material. Avoid freezing or excessive heat. Do not handle or store near an open flame, heat or other sources of ignition. Keep in a closed container in a cool, well-ventilated place.

5. Accidental Release Measures

I solate spill or leak area immediately. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch or walk through spilled material. Wear appropriate personal protective equipment during cleanup. Small spills: dike ahead of liquid spill for later disposal. Prevent entry into waterways, sewers, basements or confined areas. Surface may become slippery after spillage.

6. Exposure Controls & Personal Protection

Respiratory Protection	If vapors or mists are generated, wear a NOISH approved organic vapor/mist respirator.
Protective Clothing	Safety glasses, goggles, or face shield recommended to protect eyes from mists, dusts or splashing. PVC coated gloves recommended to prevent skin contact.
Other Protective Measures	Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

7. Hazards Identification

Inhalation	Inhalation of mists or dusts of the products may be slightly irritating to respiratory system.
Eye Contact	May cause irritation. Irrigate eye with water for at least 15 to 20 minutes. Seek medical attention if symptoms persist.
Skin Contact	Not expected to be a primary skin irritant. Prolonged or excessive skin contact with this product may cause mild skin irritation.
Ingestion	Not expected to cause irritation. If unusual symptoms are observed, seek medical advice.

8. First Aid Measures

Eyes	Irrigate eyes with a heavy stream of water for at least 15 to 20 minutes. If irritation persists get medical attention.
Skin	Wash exposed areas of the body with soap and water.
Inhalation	Remove from areas of exposure. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.
Ingestion	Rinse out mouth and drink lots of water. If unusual symptoms are observed, seek medical advice.

9. Fire Fighting Measures

Flammability	May be combustible at high temperature. Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.
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Extinguishing Media	Dry chemical, foam, carbon dioxide, water spray (fog). Water stream may splash burning liquid and spread fire.
Fire Fighting Procedures	Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NI OSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

10. Toxicological information

Oral LD 50	No data available
Carcinogenic & Mutagenic Effects	No data available
Effects on Humans	May cause skin & eye irritation, but no information regarding irritation was found.

11. Disposal Considerations

Storage and disposal must be in accordance with applicable local, state & federal disposal regulations. Characterization and compliance with applicable laws are the responsibility solely of the generator.

12. Transport Information

Don't Proper Shipping Name	Not classified.
ADR/RIC code/class	Not Classified.
Maritime transport IMDG code/class	Not Classified.
Air Transport IATA code/class	Not Classified.

13. Disclaimer

This 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 other process. Such information is to be the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability & completeness of such information for his own use.