

1. IDENTIFIER	
Product identifier	
Product name	Liquified Chitosan Solution High molecular weight (HMW) or low molecular weight (LMW) 0.5–6% concentration
Other means of identification	
CAS #	Not available
Recommended use of the chemical and restrictions on use	
Recommended use Laboratory chemicals	chemical manufacturing, agriculture , water treatment, textiles
Restrictions on use	Not applicable
Details of the supplier of the safety data sheet	
Supplier identification	JUMBO PRODUCTS LLC
Address	7101 Mountain Trail Austin Texas 78732 USA
Telephone	512-658-1520
Emergency telephone number	1-800-222-1222 (Poison Control)
2. HAZARDS IDENTIFICATION	
Classification	Not classified The product contains no substances which at their given concentration are considered to be hazardous to the health.
Appearance	Clear / Amber liquid
Physical state	Liquid
Odor	Slightly Vinegar-like and clove
GHS label elements including precautionary statements	
Hazard statements	Not Classified
Other information	
Unknown acute toxicity	0% of the mixture consists of ingredient(s) of unknown toxicity 0% of the mixture consists of ingredient(s) of unknown acute oral toxicity 0% of the mixture consists of ingredient(s) of unknown acute dermal toxicity 0% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas) 0% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor) 0% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS	
Substances	Chitosan (CAS 9012-76-4) Acid (CAS 64-19-7)Neem Oil (CAS 8002-65-1) 40CFR 180: Pesticide tolerance exemptClove Bud Oil (CAS 8000-34-8)Water (CAS 7732-18-5)
Mixtures	Not applicable
4. FIRST AID MEASURES	
First aid measures	
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. Consult a physician.
Ingestion	Clean mouth with water and afterward drink plenty of water. Consult a physician.
Most important symptoms and effects both acute and delayed	
Symptoms	No information available.
Indication of any immediate medical attention and special treatment needed	
Note to physicians	Treat symptomatically.
5. FIRE-FIGHTING MEASURES	
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	CAUTION: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Carbon oxides.
Explosion Data	
Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None
Special protective equipment for fire fighters	Firefighters should wear self-contained breathing apparatus and full turnout gear. Use personal protection equipment.
Page 2 of 8	
SDS: Liquified Chitosan Solution	15-August-2022
6. ACCIDENTAL RELEASE MEASURES	
Personal precautions	protective equipment and emergency procedures
Personal precautions	Avoid contact with eyes.
Methods and material for containment and cleaning up	

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
7. HANDLING AND STORAGE	
Precautions for safe handling	
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Conditions for safe storage including any incompatibilities	
Storage conditions	Keep containers tightly closed in a dry and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION	
Control parameters	
Exposure Limits	This product, as supplied does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Appropriate engineering controls	
Engineering controls	Showers eyewash stations, ventilation systems
Individual protection measures such as personal protective equipment	
Eye/face protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.
Page 3 of 8	
SDS: Liquid Chitosan Solution	15-August-2022
9. PHYSICAL AND CHEMICAL PROPERTIES	
Physical and Chemical Properties	
Appearance	Clear/amber liquid
Odor	Vinegar-like and clove
Odor Threshold	No data available
pH	No data available
Melting/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid)	No data available

Upper/lower flammability or explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility(ies)	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
<u>10. STABILITY AND REACTIVITY</u>	
Reactivity	No information available.
Chemical stability No information available.	No information available.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	None known based on information supplied.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	Carbon oxides.
Page 4 of 8	
SDS: Liquid Chitosan Solution	15-Aug-22
<u>11. TOXICOLOGICAL INFORMATION</u>	
<u>Information on likely routes of exposure</u>	
Product Information	
Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.
<u>Information on toxicological effects</u>	
Symptoms	No information available.
<u>Numerical measures of toxicity</u>	
Acute Toxicity	Unknown acute toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity 0% of the mixture consists of ingredient(s) of unknown acute oral toxicity 0% of the mixture consists of ingredient(s) of unknown acute dermal toxicity

	0% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas) 0% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor) 0% of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (liquid)
Delayed and immediate effects as well as chronic effects from short and long-term exposure	
Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.
Page 5 of 8	
SDS: Liquid Chitosan Solution	15-Aug-22
12. ECOLOGICAL INFORMATION	
Ecotoxicity	The environmental impact of this product has not been fully investigated.
Persistence and degradability	No information available.
Bioaccumulation	There is no data for this product.
Mobility	No information available.
Other adverse effects	No information available.
13. DISPOSAL CONSIDERATIONS	
Waste treatment methods	
Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
14. TRANSPORT INFORMATION	
DOT	Not regulated
Proper shipping name	Not regulated
Hazard class	Not applicable
TDG	Not regulated

MEX	Not regulated
ICAO	Not regulated
IATA	Not regulated
Proper shipping name	Not regulated
Hazard class	Not applicable
IMDG/IMO	Not regulated
Hazard class	Not applicable
RID	Not regulated
ADR	Not regulated
ADN	Not regulated
Page 6 of 8	
SDS: Liquid Chitosan Solution	15-Aug-22
15. REGULATORY INFORMATION	
Safety	health and environmental regulations/legislation specific for the substance or mixture
International Regulations	Not applicable
Ozone-depleting substances (ODS)	Not applicable
Persistent organic pollutants	Not applicable
Export notification requirements	Not applicable
International Inventories	
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.
Legend	
TSCA United States Toxic Substances	Control Act Section 8(b) Inventory
DSL/NDSL	Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS	Japan Existing and New Chemical Substances
KECL	Korean Existing and Evaluated Chemical Substances
PICCS	Philippines Inventory of Chemicals and Chemical Substances

AICS	Australian Inventory of Chemical Substances
US federal regulations	
SARA 313	Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372
Acute health hazard	No
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No
Page 7 of 8	
SDS: Liquid Chitosan Solution	15 Aug 22
CWA (Clean Water Act)	This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)
CERCLA	This material does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local regional or state level pertaining to releases of this material
US state regulations	
California Proposition 65	This product does not contain any Proposition 65 chemicals.
U.S. state right-to-know regulations	This product does not contain any substances above threshold limits that are regulated by state right-to-know.
16. OTHER INFORMATION	
NFPA	Health hazards 1 Flammability 0 Instability 0 Physical and chemical properties
HMIS	Health hazards 1 Flammability 0 Physical hazards 0 Personal protection X
Prepared by	Jumbo Fungo Products 7101 Mountain Trail Austin , Texas 78732512-658-1520
Issuing date	15-Aug-22
Revision date	
Revision note	

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge information and belief at the date of its publication. The given is designed only as a guidance for safe handling use processing storage transportation disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text