

SAFETY DATA SHEET

Section 1: Identification

Product Name: WarHammer™

Identification: Aqueous chitosan acetate

Active ingredient: Chitosan (10% solution)

Chemical Name/Synonyms: Chitosan, acetic acid, balance water

CAS # 9012-76-4

Company: Blacksmith BioScience 25018 Spring Ridge Dr Spring Texas 77386

In emergency call 911.

For information about this SDS, use this contact phone#:

+1-864- 907-4182

Section 2: Hazard(s) Identification

Hazard Classification: This product is not classified according to the Globally Harmonized System (GHS).

Signal Word(s): none

Hazard Statements: H401 toxic to aquatic life

Pictograms: None

Precautionary Statements: none

Description of other hazards: toxic to aquatic life

Ingredients with unknown toxicity: 0% of the mixture consists of ingredient(s) with unknown acute toxicity

Section 3: Composition/ Information on Ingredients

Chemical Name	Synonym	CAS#	Conc.
Chitosan 10 wt. %	Copolymer of beta-(1,4)-linked D-glucosamine and N-acetylglucosamine	9012-76-4	
Acetic acid	vinegar	8028-52-2	
Water		7732-18-5	

Section 4: First-Aid Measures

After skin contact: May cause skin irritation. Wash off with soap and plenty of water. Consult a physician.

After eye contact: May be irritating to eyes. In case of eye contact, remove contact lenses and wash with excess of water for 15 minutes. Contact a physician.

After inhalation: If large amounts of fumes are inhaled, remove to fresh air. If not breathing, give artificial respiration. Consult a physician.

After swallowing: May be harmful if swallowed. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: Fire-Fighting Measures

Suitable extinguishing agents: Not flammable, does not burn. Use water, dry chemicals, carbon dioxide, sand or foam. Use extinguishing media appropriate for surrounding fire.

Special protective equipment for firefighters: Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals.

Section 6: Accidental Release Measures

Personal precautions: Refer to Section 8: Exposure Controls/Personal Protection and Section 7: Handling and Storage

Measures for environmental protection: Avoid release of large amounts into creeks, rivers, and any other natural aquatic reservoirs

Measures for cleaning/collecting: Spill materials may be absorbed using sand, clay or commercial absorbent. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area by flushing with large amounts of water. Dispose of per guidelines under Section 13: Disposal considerations.

Section 7: Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. User should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. User should remove clothing/PPE immediately if product gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Wash the outside of gloves before removing. Follow manufacturer's instructions for cleaning/maintaining PPE. If not such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Storage: Store in original container in a cool, dry and well ventilated area away from direct heat. Do not allow to freeze. Store away from strong oxidizers and strong bases.

Section 8: Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):Not applicable.

American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs):Not applicable.

Any Other Exposure Limit Used or Recommended:Not applicable.

Appropriate Engineering Controls:Adequate ventilation.

Individual Protection Measures (Personal Protective Equipment –PPE):Safety goggles recommended. Avoid skin contact with protective gloves and clothing. Wear chemical resistant gloves. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Respirator use is not required for this product.

Section 9: Physical and Chemical Properties

Form: Light brown to dark brown liquid

Odor: vinegar odor

Odor threshold: No data available

pH: ~4.5

Melting point/melting range: No data available

Boiling point/boiling range: 211 F

Flash point: No data available

Evaporation rate: No data available

Flammability: No data available

Upper/lower flammability or explosive limits: no data available

Auto ignition temperature: The product will not auto ignite

Vapor pressure: No data available

Vapor density: No data available

Relative density: 1.0-1.1 g/ml

Solubility in/Miscibility with water: miscible with water

Section 10: Stability and Reactivity

Reactivity: The product is stable under normal temperatures

Chemical stability: The product is stable under normal temperatures

Conditions to avoid: Freezing temperatures or excess heat

Incompatible materials: Strong oxidizing material and strong bases

Hazardous decomposition products: Decomposition will not occur under normal temperature. Hazardous decomposition products may form under fire conditions: - Carbon oxides, nitrogen oxides (NOx)

Section 11: Toxicological Information

Acute toxicity: No data available

Potential routes of exposure/potential health effects: Ingestion, inhalation, eye contact. No appreciable entry known through intact skin although irritation possible.

Skin: May cause skin irritation

Eye: May cause eye irritation

Inhalation: Inhalation of fumes may cause irritation of respiratory tract

Ingestion: Ingestion may be harmful due to the presence of acetic acid

Carcinogenic effects: This product is not known or reported to be carcinogenic by any reference source including NTP, IARC, or OSHA.

Mutagenic effects: no data available

Reproductive toxicity: no data available

Sensitization: no data available

Target organs: eyes, skin, respiratory tract, GI system

Section 12: Ecological Information (non-mandatory)

Ecotoxicity: toxic to aquatic life

Mobility: no data available

Biodegradation: biodegradable

Bioaccumulation: no data available

Section 13: Disposal Considerations (non-mandatory)

Appropriate Disposal Containers: Rinse original container with water before disposal.

Recommended Appropriate Disposal Methods: Can be disposed of with household waste.

Physical and Chemical Properties That May Affect Disposal Activities: None.

Special Precautions for Landfills or Incineration Activities: None.

Do not dispose of into sewer.

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from

federal regulations. Consult state and local regulations regarding the proper disposal of this material. To minimize exposure, refer to Section 8: Exposure Controls/Personal Protection.

Section 14: Transport Information (non-mandatory)

UN Number: Not regulated.

UN Proper Shipping Name: Not regulated.

Transport Hazard Class(es): Not regulated.

Packing Group Number, if Applicable: Not regulated.

Environmental Hazards (e.g., Marine pollutant (Yes/No)): No.

Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable.

Special Precautions Which a User Needs to Be Aware of, or Needs to Comply With, in Connection With Transport or Conveyance Either Within or Outside Their Premises: None.

Section 15: Regulatory Information (non-mandatory)

US Federal Regulations

CERCLA Reportable Quantity (RQ): None of the ingredients is listed.

OSHA: Not considered hazardous.

EPA: Exempt from EPA code.

SARA Section 302: Does not have an RQ or TPQ.

SARA Section 311/312: Not reportable under Section 311/312.

SARA Section 313: Not reportable under Section 313.

TSCA (Toxic Substances Control Act): Not listed in the TSCA inventory

Section 16: Other Information

SDS date of preparation/update: 9/24/2019