

# CH-3 Agricultural Adjuvant

## Nature's Ionic Surfactant

### Active Ingredients

<b>Poly D Glucosamine</b> .....	<b>3%</b>
<b>Inert Ingredients</b> .....	<b>97%</b>
<b>Total</b> .....	<b>100%</b>

All ingredients exempt from tolerance requirements according to 40 CFR 180.1089

**Keep Out of Reach of Children**

### Caution

**Personal Protective Equipment:** Wear long-sleeved shirt and long pants, shoes, socks, and gloves.

**First Aid:** **Inhalation:** remove to fresh air. **Eye Contact:** Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician. **Skin Contact:** Wash skin with soap and water. **Ingestion:** Clean mouth with water and drink afterwards plenty of water.

**Storage and Disposal:** Keep containers tightly closed in a dry, cool, and well-ventilated place. **Disposal:** Dispose in accordance with local regulations. Do not reuse empty containers.

### Directions For Use

CH-3 Agricultural Adjuvant is an ionic sticking agent intended for use in combination with nutritional and pesticidal sprays for agronomic crops, fruits, vegetables, ornamentals, and turf. It may be applied to seeds, stems, leaves and roots of plants via ground, aerial or irrigation equipment.

### Net Contents & Net Weight

2.5 US Gal

21 lbs.

### Guaranteed By

**Live Oak Products**

For more information 772-216-4765

Live Oak Products, LLC  
P.O. Box 691014  
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### General Recommendations

**Foliar application:** For agronomic and vegetable crops, fruit trees, ornamentals, and turf, use 1-2 quarts per acre in a minimum of 20 gallons of water.

**Seed and root application:** Use at 1-2 ounces per gallon of water for root dip just prior to planting or apply in-furrow to enhance adherence of nutritional or pesticide products to roots and seeds.

**Turf and Ornamentals:** Apply at 3-6 ounces per thousand square feet.

### Attention

Some products may require higher or lower adjuvant quantity. Always follow label instructions for fungicide, insecticide or nutritional products when considering adjuvant rates.

### Mixing Instructions

Add desired water volume to clean spray tank. Add fungicide, insecticide, or nutritional products according to product labels. Adjust pH to 6.0 or below. Add CH-3 Agricultural Adjuvant and mix or agitate thoroughly. (Water pH must also be adjusted to <6.0 when applied through drip irrigation.)

### Warranty and Disclaimer

Seller warrants that this product complies with the specifications expressed in this label. To the extent consistent with applicable law, Seller makes no other warranties, and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose. To the extent consistent with applicable law, Seller's liability or default, breach or failure under this label shall be limited to the amount of the purchase price. To the extent consistent with applicable law, Seller shall have no liability for consequential damages.



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On October 26, 2007, the Agency issued a Final Rule in the Federal Register (FR) on the data requirements to support registration of biochemical and microbial pesticides, and updated definitions for both biochemical and microbial pesticides (FR Volume 72, Number 207) [Page 60988-61025]. The rule became effective on December 26, 2007. The data and information evaluated for the Preliminary Work Plan (PWP) were considered in light of these requirements. The final rule did not trigger further data requirements for the registered pesticide formulations discussed in the PWP.

The data and information evaluated to support Chitin and Chitosan (Case 6063) as published in the PWP continue to support the registrations containing these active ingredients, except in cases where the formulation of the active ingredient has changed, in which case new data and information may be required. The status of these and other registration review cases is available on [http://www.epa.gov/oppsrrd1/registration\\_review/review/](http://www.epa.gov/oppsrrd1/registration_review/review/). Further information will be available in the Chitin and Chitosan Biopesticide Registration Action Document (BRAD) and located on the biochemical pesticides website once it is completed.  
(<http://www.epa.gov/pesticides/biopesticides>)

There are two active ingredients in this case - Chitin and Chitosan. Chitin is a naturally occurring chain of glucose molecules that is structurally related to cellulose, and is ubiquitous in nature. Its chemical name is Poly-N-Acetyl-D-Glucosamine. Chitin is most commonly derived from crustacean shells, particularly from crabs and shrimp. Historically, it has been used as a food additive and a fertilizer. As a pesticide active ingredient, it acts by stimulating the growth of certain microorganisms in soil, which release substances that kill pathenogenic nematodes and their eggs. The compound is reputed to play a role as a plant growth regulator by bolstering plant defenses against disease.

Chitosan is also a naturally occurring chain of glucose molecules that is structurally related to cellulose. Its chemical name is Poly-D-Glucosamine. It is one of the most common compounds in nature. Commercially, Chitosan is prepared through the deacetylation of Chitin. Chitosan has several biomedical applications. It is considered to be a hemostatic agent that is hypoallergenic and is known to possess anti-bacterial properties. These properties also allow for its use as an active ingredient in anti-microbial pesticides. However, as an agricultural active ingredient, Chitosan is best known as a plant growth regulator that boosts the ability of plants to defend against fungal infections.

Currently, there is one registered product containing Chitin as an active ingredient, and two registered products containing Chitosan as an active ingredient. Chitin is used in this pesticide to control nematodes. It is applied to be incorporated into soil or grass, and has both food and non-food use sites. Of the two Chitosan products, one is used as a plant growth regulator, the other an antimicrobial agent. As a plant growth regulator it is applied through foliar application and aids in defending plants against fungal diseases, mold and mildew. As an antimicrobial, it is primarily used as a fabric treatment to prevent bacterial and fungal growth.