

TRAMFLOC, INC.

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Technical Information Bulletin

Tramfloc® 621 CHITOSAN FLOCCULANT SOLUTION

Product Description

Tramfloc® 621 Chitosan Solution is a flocculant solution produced from shrimp shells and is supplied as a cloudy solution. Tramfloc® 621 Chitosan Solution is completely soluble in water and produces low viscosity solutions upon make-down. Tramfloc® 621 Chitosan Solution is used as a special flocculant and dewatering agent in a wide variety of food grade applications in which synthetic polymers are prohibited. Tramfloc® 621 Chitosan Solution is used where the nature of the application demands natural, organic, completely non-toxic, food ingredient safe flocculant. Tramfloc® 621 Chitosan Solution should be applied where petroleum based polyacrylamide flocculants are not permitted. Tramfloc® 621 Chitosan Solution is particularly well suited to applications in the human food production, bio-pharma, animal feed, yeast fermentation, algae harvesting, enzyme production, and in all-natural grade food production.

Physical Properties

Viscosity:	2000 - 4000 mpa/s (cps) .
pH:	2.95 – 3.1
Formulation:	3% Chitosan, 6% Acetic Acid, 91% Filtered Water
Appearance:	Light Amber
Form:	Liquid
DDA:	80 – 85%

Composition

Tramfloc® 621 Chitosan Solution is a liquid solution of a proprietary grade of chitosan, acetic acid, and water. There are no additional additives for any reason.

Processing

Ingredients are added to water for mixing and dissolving to create a viscous solution. Filtered product ensures no un-dissolved material remains.

Usage

Tramfloc® 621 Chitosan Solution is an all natural, class 55 water clarifier. It is non-toxic and non-hazardous material which naturally breaks down into carbon dioxide and water within two to three weeks of application. No special handling or safety precautions are required. The use of Tramfloc® 621 Chitosan Solution and application techniques are fully supported and documented.

Make-Down, Handling and Storage

Tramfloc® 621 Chitosan Solution should be both fed and bench tested neat. Further dilutions are unnecessary.

Product Specifications

Ingredients: Fine grade chitosan
Raw material source: Fresh North Atlantic Shrimp Shells, *Pandalus borealis*
County of origin: USA

Tramfloc® 621 ingredients conform to the Food Safety Management System Standard ISO 22000:2005.

The pertinent provisions of the FDC Act and FDA's regulatory framework allow a company to self-affirm a food ingredient as GRAS for specific uses and immediately begin marketing of such ingredient, without authorization or approval from FDA.

Shrimp-derived chitosan, in the form of selected Tramfloc, Inc. products, is intended to be added to designated foods, including meat and poultry, as a GRAS substance to serve one or more of the designated food uses shown below. In order to classify the various effects ingredients may have in food, FDA has published a list of 32 physical or technical effects for which the ingredients may be added to food. These are codified at 21 CFR 170.3(o)(1-32). The intended applications for shrimp-derived chitosan are covered under one or more of the following designations listed within 21 CFR 170.3(o).

(2) Antimicrobial agents. Substances used to preserve food by preventing the growth of microorganisms and subsequent spoilage, including fungistats, mold and roye spore inhibitors, and the effects listed by the National Academy of Sciences/National Research Council under "Preservatives."

(8) Emulsifiers and emulsifier salts. Substances which modify surface tension in the component phase of an emulsion to establish a uniform dispersion or emulsion.

(20) Nutrient supplements. Substances which are necessary for the body's nutritional and metabolic processes.

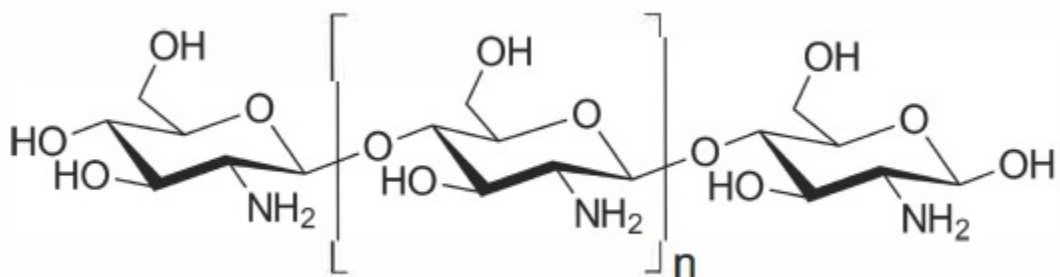
(24) Processing aids. Substances used as manufacturing aids to enhance the appeal or utility of a food or food component, including clarifying agents, clouding agents, catalysts, flocculants, filter aids, and crystallization inhibitors, etc.

(28) Stabilizers and thickeners. Substances used to produce viscous solutions or dispersions, to impart body, improve consistency, or stabilize emulsions, including suspending and bodying agents, setting agents, jellying agents, and bulking agents, etc.

Packaging

Tramfloc® 621 Chitosan Solution is available in 275 gallon IBC's weighing 2205# net; 55 gallon drums weighing 460# net; five gallon pails weighing 42# net.

Structural Diagram



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