



Manufactured With Care



No Secrets. Just Quality Products.

In the manufacturing of LiquaCel™ Concentrated Liquid Protein, there are numerous systems in place to ensure each bottle and packet is manufactured in compliance with Food Safety Guidelines. This is achieved by adhering to the **Food & Drug Administration (FDA) Code of Federal Regulations (CFR's) Title 21** which deems these products a medical food, and being in compliance to all **New York State Department of Agriculture and Markets GMP Regulations**.



Meeting Standards ✓

LiquaCel™ is manufactured under a **HACCP (Hazard Analysis and Critical Control Point)** based system that meets the **Global Food & Safety Initiative (GFSI) standards**. A food safety management scheme is 'recognized' by GFSI when it meets internationally recognized minimum food safety requirements. The Global Food Safety Initiative is a business driven initiative for the continuous improvement of food safety management systems to ensure confidence in the delivery of safe food to consumers worldwide. GFSI provides a platform for collaboration between some of the world's leading food safety experts from retailers, manufacturers, food service companies, service providers associated with the food supply chain, international organizations, academia and government.

The manufacturers of LiquaCel™ are currently certified to the GFSI Standards, through their **SQF (Safety Quality Foods) certification to SQF 2000 level 3** and are re-certified annually to maintain accreditation. During the manufacturing process, there are many steps to establishing the food safety of the products for the consumer. One of these is ensuring the formulation by means of continual testing of water activity.

Water Activity



Water in food which is not bound to food molecules can support the growth of bacteria, yeasts and molds (fungi). The term water activity refers to this unbound water. The water activity of a food is not the same thing as its moisture content. Although moist foods are likely to have a great water activity then dry foods, this is not always so; in fact a variety of foods may have exactly the same moisture content and yet have quite different water activities.

Measuring Water Activity

The water activity scale extends from 0 (bone dry) to 1.0 (pure water) but most foods have a water activity level in the range of 0.2 for very dry foods to 0.99 for moist fresh foods. Water activity is in practice usually measured as equilibrium relative humidity (ERH). The water activity represents the ratio of the water vapor pressure of the food to the water vapor pressure of pure water under the same conditions and it is expressed as a fraction. If we multiply this ratio by 100, we obtain the equilibrium relative humidity (ERH) that the foodstuff would produce if enclosed with air in a sealed container at constant temperature. Thus a food with a water activity of 0.7 would produce an ERH of 70%.



Improving Shelf Life

Water activity has its most useful application in predicting the growth of bacteria, yeasts and molds. For a food to have a useful shelf life without relying on refrigerated storage, it is necessary to control either its acidity level (pH) or the level of water activity or a suitable combination of the two. This can effectively increase the product's stability and make it possible to predict its shelf life under known ambient storage conditions. Food can be made safe to store by lowering the water activity to a point, <0.85 , that will not allow dangerous pathogens such as *Clostridium botulinum* and *Staphylococcus aureus* to grow in it.



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Ingredients

all ingredients have **COA (Certificate of Analysis)** validation. The ingredients are monitored for **shelf life**, to maintain that only quality ingredients are utilized in the manufacturing process. Each ingredient is **individually weighed to ensure product consistency** from batch to batch.

Safety Standards

Analytical tests are performed to ensure **water activity, pH, color and flavor** are meeting the current product specification, every 30 minutes throughout the production process.

<0.85

Water Activity

<4.6

pH

These specific water activity and pH levels ensure the stability of the product during ambient storage conditions.

Manufacturing



Products are manufactured on designated production lines. The employees are trained to the current **FDA GMP's & SQF GFSI Standards.**

Operational tests are conducted to ensure **weight control, serving size, metal detection and leak detection** throughout the manufacturing process as well.

Certified in Compliance With

New York State department Of Agriculture & Market GMP Regulations

FDA code of regulations Title 21

Global Food Safety Initiative

ISO 9001:2008 Registered

SQF 2000 Level 3 Certified

FDA Registered

FS22000

Kosher



Certificate of Analysis



Shelf life Monitored



ISO FDA
U.S. Certified
Collagen Protein



Water Activity



pH Levels



FDA GMP's
& SQF GFSI
Standards



Consistency
Ensured



Analytical
Test



Operational
Test



Protein
Analysis

All manufacturing processes are documented with each batch to ensure traceability of ingredients, packaging materials, validation of the production process and final review before product is released for shipment.



Final
Packaging



USA Made



Recyclable