



FROZEN SHRIMP

Higher Soak Yield • Firmer Bite •
Superior Color Appeal

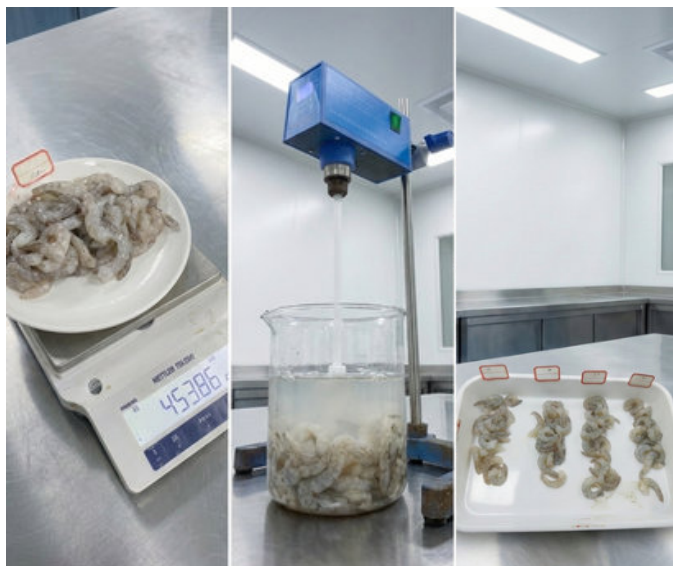
Performance Phosphate Blends
for Modern Food Manufacturing

Frozen Shrimp Performance Result

Yield Maximization & Sensory Enhancement

Executive Summary

This trial evaluated the Market standards against the 'XF-M505B' series phosphate blends to optimize water retention and sensory profiles in peeled shrimp. The objective was to balance economic yield [weight gain] with premium sensory qualities like color and crispness. Key Finding: XF-M505B achieved the absolute highest Cooking Yield [88.6%], outperforming the standard in pre-cooked applications. Also delivered a superior sensory profile – 'Redder' and 'Crisper' – with a flavor closer to fresh shrimp, making it the ideal direct upgrade for raw retail and frozen distribution sales.



Methodology

Substrate Preparation:

1 kg of peeled, deveined shrimp [Size 21/25 to 51/60].

Hydration Solution:

- Water + 2000g of Ice.
- 3% Phosphate Mix [60g].
- 1% Salt [20g].

Soaking Process:

Shrimp added to the solution and subjected to 30 minutes of active stirring [40 rpm].

- Temperature strictly controlled at 0-5°C using an ice/water slurry to prevent protein degradation.

Freezing & Thawing:

Frozen at -18°C for 12 hours to simulate commercial storage, then thawed at 4°C until ice-free.

Cooking Evaluation:

Boiled in water for approximately 1.5 minutes to evaluate final texture, yield, and color changes.

Efficiency & Profitability Benchmark

[per 1,000 g Raw Shrimp]

Metric	Market Standard #1	Market Standard #2	XF-M505B
Soak Yield [Uptake]	18.86%	20.14%	22.6%
Cooked Yield [Final]	85.66%	88.16%	88.6%
Sensory [Visual]	Standard White / Clear	Slightly Redder than Standard	Fresh Red
Texture / Mouthfeel	Firm	Crisp	Crisper / Fresh profile

Head-to-Head Results

Soak Yield, Cooked Yield, Sensory Appearance



Market Standard #1
Baseline yield and a standard white, firm texture

Operates at a standard pH [8.56]. This limits maximum cellular expansion, providing adequate but not optimized water retention [18.86% soak yield] and a standard translucent white appearance.



Market Standard #2
Superior raw soak yield with premium 'redder' color and crisp texture

Operates at an optimized higher pH to safely open muscle fibers, enabling greater water binding capacity during the cold soak [20.14% soak yield]. Critically, it retains the highest proportion of absorbed moisture through cooking – the most thermally efficient blend tested.



XF-M505B
Delivers the absolute highest cooked yield retention

Prevents shrinkage during boiling by binding water through intense thermal stress. Per 100 kg of raw shrimp, it delivers 2.94 kg more sellable cooked product than the standard – a direct margin gain batch after batch.



Sensory Test compare texture and crispness

Commercial Recommendation



Best for Pre-Cooked Applications

Select XF-M505B. The ideal choice for pre-cooked products, providing the highest cooked yield retention [88.6%] to maximize profitability in ready-to-eat processing lines.

Performance Phosphate Blends for Frozen Shrimp

Proven phosphate options for peeled shrimp.
Choose XF-M505B for the absolute highest cooked
yield retention in pre-cooked applications.



Product Overview and Key Specifications



XF-M505B
PREMIUM

Designed for: Absolute maximum water binding capacity and premium sensory enhancement.

Best for: Top-tier retail packs and premium pre-cooked lines where maximizing weight retention and achieving a 'fresh catch' appearance are the highest priorities.

Key Outcomes:

- Maximum Soak Uptake: Achieves the highest raw weight gain [22.6%].
- Superior Cooked Retention: Locks in moisture through boiling for an 88.6% final yield.
- Premium Sensory: Delivers a vibrant 'Fresh Red' color and the highest-rated 'Crisper' texture.

Technical Specifications:

Contains E451[i], E450[iii], E500[ii], E331[iii].

Application: Peeled Frozen Shrimp / High-yield retail and food service.

Choose XF-M505B when your priority is maximizing the final cooked weight and reducing shrinkage during boiling.



Raw Yield & Color
Superior soak uptake and fresh appearance.



Cooked Retention
Locks in moisture through boiling.

Need the right blend for your application?
Request a sample, dosage guidance, or trial support
from Additiv Technical Team.



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