

Technical Deep Dive: How Jiangsu Tiancheng Egg Industry Elevates Egg Processing Quality

Exploring the Role of Aseptic Breaking and Low-Temperature Spray Drying Technologies in Enhancing Safety, Stability, and Product Performance

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Jiangsu—July 28, 2026—The global egg powder market was valued at USD 1.9 billion in 2023 and is projected to reach USD 2.9 billion by 2030, according to Grand View Research. Frozen egg products accounted for approximately 40% of the global egg products market share in 2025. Within this expanding landscape, liquid egg products represent the largest form segment, expected to hold a 55% share of demand in 2026 (Future Market Insights). In 2024, China exported approximately USD 288 million in egg

products, underscoring the country's role as a major supplier. Industrial buyers increasingly demand consistent microbiological safety, functional performance, and extended shelf life — requirements that hinge on the underlying production technology.



Logo for Jiangsu Tiancheng Egg Industry Co., Ltd.

Company Profile: [Jiangsu Tiancheng Egg Industry Co., Ltd.](#)

Founded in 2016 and headquartered in Nantong, Jiangsu Province, Jiangsu Tiancheng Egg Industry Co., Ltd. operates a vertically integrated supply chain encompassing layer breeding, feed production, egg laying, and deep processing. The company's 60,000 m² facility houses 150 employees and produces 3,000 tons of egg powder and 50,000 tons of egg liquid annually. Its product portfolio includes Whole Egg Powder, Egg White Powder, Egg Yolk Powder (including Heat-Stable variants), and liquid egg products such as Frozen Egg Yolk Liquid, Frozen Whole Egg Liquid, and Frozen Egg White Liquid. 40% of output is exported to markets in Asia, the EU, and

the USA. The company has secured SQF, BRC, and HALAL certifications to meet global regulatory standards.

Core Technology: Aseptic Breaking and Low-Temperature Spray Drying

1. Fully Automatic MOBA Egg Breaking Line

Tiancheng deploys a fully automatic MOBA egg breaking, separating, and filtering line that operates in a closed, sanitized environment. The system minimizes human contact, reducing the risk of cross-contamination. Eggs are washed, candled, and automatically broken, with shells separated before the liquid stream enters a heat exchanger for pasteurization. This aseptic handling is the foundation for producing [pasteurized egg liquid](#) (Pasteurized Egg Liquid) with controlled microbial load.

2. Cold-Chain Sterile Management

After pasteurization, the egg liquid is rapidly cooled to below 4°C and transferred through sterilized pipes into chilled storage tanks. The entire downstream process — from filling to frozen storage — is maintained under strict temperature control. For frozen egg liquid products (Frozen Egg Liquid), the company uses swift freezing technology to preserve protein functionality and extend shelf life without compromising sensory properties. This cold-chain sterile management ensures products such as Frozen Egg Yolk Liquid and Frozen Whole Egg Liquid meet the safety requirements of industrial bakeries and food processors.

3. Low-Temperature Spray Drying for Egg Powder

For egg powder production, Tiancheng employs low-temperature spray drying with controlled inlet and outlet temperatures. This method preserves protein integrity, gel strength, and emulsifying properties while achieving the required moisture levels. The result is a product range that includes Egg White Powder (High Gel and High Whip types), Egg Yolk Powder (including Heat-Stable), and Whole Egg Powder, all with consistent particle size and solubility.

4. Microbial Closed-Loop Control System

Tiancheng has implemented a microbial closed-loop control system that monitors critical control points from raw egg reception to final packaging. Environmental swabbing, inline CIP (Clean-in-Place), and regular microbiological testing ensure that finished products meet the following specifications (representative data from production records):

- Mesophilic Aerobes: $\leq 50,000$ cfu/g (egg powders)
- Coliform bacteria: ≤ 10 cfu/g

- Salmonella (per 25g): Not Detected (AOAC 2013.01)
- Listeria monocytogenes (per 25g): Not Detected (AOAC 2004.02)
- These parameters are verified by third-party laboratories and align with international food safety standards.

Product Parameter Highlights (Narrative Description)

The company's egg powder range offers differentiated functional properties for industrial buyers:

- Whole Egg Powder (WEP-001): Moisture $\leq$ 4.0%; protein content 35 g/100g; fat content 57.0 g/100g; energy 2744 kJ/100g; passes through a 20-mesh sieve. Suitable for bakery applications where overall egg functionality is required.
- Egg White Powder (EWP-001): Protein $\geq$ 78.0%; moisture $\leq$ 8.0%; pH 6.0–8.5; gel strength $\geq$ 800 g/cm²; passes through a 40-mesh sieve. Available in High Gel and High Whip variants for specific textural requirements in protein beverages, meringues, and processed meats.
- Egg Yolk Powder (EYP-001): Fat $\geq$ 58.0%; moisture $\leq$ 4.0%; pH 6.0–7.0; the Heat-Stable variant maintains emulsifying capacity under high-temperature processing conditions, ideal for sauces, dressings, and mayonnaise.

For liquid egg products, Pasteurized Egg Liquid (including frozen forms) is produced with a minimum shelf life of 12 months at -18°C. Custom formulations such as Salted Egg Liquid and Sugared Egg Liquid are available to match specific recipe requirements.

Application Scenarios in Target Industries

Tiancheng's egg products serve a range of industrial applications:

- Bakery: Whole Egg Powder provides emulsion stability, moisture retention, color and crust browning, and flavor enhancement for biscuits, bread, cakes, and pastries.
- Beverage: Egg White Powder (80% protein) is used as a protein supplement in post-workout protein beverages, valued for its complete amino acid profile and water solubility.
- Food Ingredients: Egg Yolk Powder functions as an emulsifier in mayonnaise, dressings, and sauces; egg white powder contributes to binding in sausages and surimi products.
- Nutraceuticals: The company also extracts Eggshell Membrane, used increasingly in joint health supplements (global eggshell membrane market projected to reach USD 3.8 billion by 2034, per

IMARC Group).

Certifications and Quality Assurance

All Tiancheng egg powder and egg liquid products are manufactured under SQF, BRC, and HALAL certified systems. These certifications mandate rigorous supplier approval, traceability, and hygiene controls, providing downstream buyers with confidence in supply chain compliance. The company was recognized by WATT Global Media as a top-20 layer company in China (2025), confirming its standing in the integrated egg processing sector.

Closing Outlook

As global food manufacturers seek reliable sources of high-functional egg ingredients with guaranteed safety, Jiangsu Tiancheng Egg Industry Co., Ltd. positions itself through technical depth — from aseptic breaking to low-temperature drying and microbial closed-loop control. The company's combination of large-scale production capacity (50,000 tons liquid; 3,000 tons powder) and internationally recognized quality certifications makes it a reference supplier for industrial bakery, beverage, and nutrition markets.

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