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Technical Data Sheet (TDS)

Issue Date: February 28, 2026**Product Name:** Spirulina (Feed Grade, Powder)**CAS Number:** 724424-92-4

1. Product Overview

- **English Name**: Spirulina (Feed Grade, Powder)
- **Synonyms**: Spirulina platensis powder; Natural microalgae feed additive; Blue-green algae nutritional supplement
- **CAS No.**: 724424-92-4
- **Source**: Cultivated from *Spirulina platensis* (a natural blue-green microalgae) via closed photobioreactor culture, low-temperature drying and ultrafine grinding; no pesticide, heavy metal or antibiotic contamination.
- **Product Characteristics**: Dark green free-flowing powder with a faint natural microalgae odor; rich in high-quality crude protein (≥60%), phycocyanin, β-carotene, essential amino acids, B vitamins, trace minerals (Fe, Zn, Se) and unsaturated fatty acids. As a green natural feed additive, it replaces traditional protein feed (soybean meal, fish meal), improves animal immune function and growth performance, enhances the color of aquatic products/eggs/meat, and reduces the use of synthetic pigments and antibiotics. It is non-toxic, biodegradable, and compliant with global green feed additive standards.

2. Technical Specifications (Complies with Feed Industry Standards)

Item	Specification
Appearance	Dark green to blue-green free-flowing powder, no caking
Crude Protein Content	≥ 60.0%
Crude Fat Content	4.0% - 8.0%
Crude Fiber Content	≤ 8.0%
Ash Content	≤ 12.0%
Moisture (Loss on Drying)	≤ 8.0%
β-Carotene	≥ 1500 mg/kg
Phycocyanin	≥ 8.0%
pH Value (1% water dispersion, 25℃)	6.5-7.5
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Cadmium (Cd)	≤ 0.5 ppm
Mercury (Hg)	≤ 0.1 ppm
Dispersibility	Easily dispersible in water/vegetable oil
Bulk Density	0.4-0.7 g/cm³
Total Bacterial Count	≤ 10^4 CFU/g
Yeast & Mold	≤ 10^2 CFU/g
Pathogens (E. coli/Salmonella)	Negative
Storage Stability	Nutrient retention ≥ 95% (24 months, ≤25℃, dark)

3. Product Advantages

1. **High-Quality Protein Source**: Crude protein content ≥60%, containing all essential amino acids required by animals; higher digestibility (85-90%) than soybean meal and fish meal, easy to absorb and utilize.
2. **Multi-Functional Nutrition**: Integrates protein, pigment, vitamins, minerals and bioactive substances (phycocyanin); one additive replaces multiple nutritional supplements, reducing feed formulation cost.
3. **Immune Enhancement**: Phycocyanin and β-carotene enhance animal immune function, improve disease resistance and stress tolerance (transport/breeding/heat stress), reduce antibiotic use.

4. **Natural Pigment**: Rich in phycocyanin and β-carotene; natural colorant for aquatic products (shrimp/fish), eggs (yolk) and meat; improves product appearance and economic value, no synthetic pigment residues.
5. **Green & Safe**: Natural microalgae, no artificial synthesis, no drug residues, no resistance; compliant with green animal husbandry and organic breeding requirements.
6. **Environmentally Friendly**: Reduces the use of fish meal (protects aquatic resources); fully biodegradable, no pollution to breeding environment; can improve aquaculture water quality when used in aquatic feed.

4. Application Fields

Spirulina is a high-nutrition natural feed additive suitable for all livestock, poultry, aquaculture, ruminants and pets, especially for animals with high protein demand and color improvement needs.

- **Aquaculture Feed**: Fish (tilapia, carp, salmon, prawn), shrimp, crab, shellfish; improves growth rate, enhances flesh/body color, improves disease resistance, reduces mortality; can be used as direct bait for fry.
- **Poultry Feed**: Broilers, layers, ducks, geese, quails; improves feed conversion rate, enhances egg yolk color and meat redness, boosts immune function, reduces heat stress in summer.
- **Livestock Feed**: Pigs (weaned piglets, grow-finish pigs, sows), cattle, sheep; improves intestinal health, reduces weaning stress in piglets, enhances milk production of dairy cows, improves reproductive performance of breeding animals; replaces partial soybean meal/fish meal.

5. Usage Methods

Animal Species	Growth Stage	Recommended Dosage (kg/ton)	High Demand Dosage (kg/ton)
Aquaculture	Fish/Shrimp (Fry)	5-8	8-12
	Fish/Shrimp (Adult)	2-5	5-8
Poultry	Broilers (0-42 days)	1-3	3-5
	Layers (Laying period)	1-2	2-4
Livestock	Weaned piglets (7-28 days)	2-4	4-6
	Grow-finish pigs	1-2	2-3
	Lactating sows	2-3	3-5
Ruminants	Dairy cattle (Lactation)	1-3	3-5
Pet Feed	Dogs/Cats (Adult)	3-5	5-8
Feed Premixes	Protein premix	5-10	10-15

6. Packaging & Storage

- **Small Batch**: 1 kg / 5 kg / 10 kg: Sealed aluminum foil bags (light-proof, moisture-proof) – for trials, small-scale breeding and pet feed production.
- **Standard Batch**: 25 kg: Multi-ply paper bags with inner aluminum foil liner (light-proof, moisture-proof) – standard industrial packaging for feed mills.
- **Bulk Batch**: 500 kg / 1000 kg: FIBC bulk bags with aluminum foil liner (light-proof, moisture-proof valve) – for large-scale feed production and aquaculture use.
- **Custom Packaging**: Available upon customer request (all packaging is light-proof and moisture-proof as standard).

7. Safety & Protection

- The product is non-toxic and non-hazardous; wear mandatory PPE (safety goggles, nitrile rubber gloves, FFP1 dust mask) during bulk handling and mixing to avoid fine powder inhalation and eye contact.
- Do not eat, drink or smoke while handling the product; wash hands and face thoroughly with soap and water after operation.
- In case of eye contact: Rinse with plenty of running water for 10-15 minutes; seek medical advice immediately if irritation persists for more than 24 hours.