

## Technical Data Sheet (TDS)

**Issue Date:** February 28, 2026 **Product Name:** Curcumin (Feed Grade) **CAS Number:** 458-37-7

### 1. Product Overview

- **English Name:** Curcumin (Feed Grade)
- **Synonyms:** Diferuloylmethane; Turmeric extract active ingredient; Natural feed antioxidant
- **Molecular Formula:** C<sub>21</sub>H<sub>20</sub> O<sub>6</sub>
- **Molecular Weight:** 368.38 g/mol
- **CAS No.:** 458-37-7
- **Source:** Extracted and purified from the rhizome of *Curcuma longa* L. (turmeric), a natural Zingiberaceae plant, via solvent extraction and column chromatography.
- **Product Characteristics:** Orange to yellow free-flowing crystalline powder with a faint natural turmeric odor; natural lipophilic polyphenol compound with strong antioxidant, anti-inflammatory and free radical scavenging properties. As a green feed additive, it improves animal immune function, intestinal health and antioxidant capacity, reduces oxidative stress caused by breeding and transport, and can be used as a natural pigment to improve the color of animal products (meat, eggs, aquatic products). It is non-toxic, biodegradable, and compliant with global green feed additive standards.

### 2. Technical Specifications (Complies with Feed Industry Standards)

Item	Specification
Appearance	Orange to yellow crystalline free-flowing powder
Curcumin Purity (Assay)	≥ 95.0% (HPLC)
Loss on Drying	≤ 5.0%
Ash Content	≤ 2.0%
pH Value (1% water suspension, 25°C)	6.0-7.5
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Cadmium (Cd)	≤ 0.5 ppm
Mercury (Hg)	≤ 0.1 ppm
Solubility	Soluble in ethanol/vegetable oil; slightly soluble in water
Bulk Density	0.5-0.8 g/cm <sup>3</sup>
Total Bacterial Count	≤ 10 <sup>3</sup> CFU/g
Yeast & Mold	≤ 10 <sup>2</sup> CFU/g
Pathogens (E. coli/Salmonella)	Negative
Antioxidant Activity (DPPH scavenging rate)	≥ 90% (0.1 mg/mL)
Storage Stability	Efficacy retention ≥ 95% (24 months, ≤25°C, dark)

### 3. Product Advantages

1. **Natural & Green:** Pure plant extract, no artificial synthesis, no drug residues, no resistance; meets the development trend of green animal husbandry and organic breeding.
2. **Multi-Functional Efficacy:** Integrates antioxidant, anti-inflammatory, immune regulation and intestinal health protection; one additive replaces multiple chemical additives (e.g., synthetic antioxidants, anti-inflammatory drugs).
3. **High Antioxidant Activity:** Free radical scavenging capacity is 2-3 times that of synthetic antioxidants (BHA/BHT); stable under feed processing conditions (≤85°C).
4. **Improves Animal Product Quality:** Enhances the color of meat, eggs and aquatic products (natural pigment); improves meat tenderness and egg yolk color; increases the economic value of animal products.
5. **Good Compatibility:** Compatible with most feed additives (vitamins, amino acids, trace minerals, probiotics); no adverse reactions, no nutrient loss.

6. **Safe & Reliable:** Long-term animal feed use history; no acute/chronic toxicity; high tolerance by animals (no side effects at 10x recommended dosage).
7. **Environmentally Friendly:** Fully biodegradable; no pollution to breeding environment and soil/water; compliant with global environmental protection standards.

#### 4. Application Fields

Curcumin is a multi-functional natural feed additive suitable for all livestock, poultry, aquaculture and ruminant feed, especially for animals under high-density breeding, transport and stress conditions.

- **Poultry Feed:** Broilers, layers, ducks, geese, quails; improves antioxidant capacity, reduces heat stress, enhances egg yolk color and meat redness, improves feed conversion rate.
- **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.
- **Aquaculture Feed:** Fish (tilapia, carp, salmon, prawn), shrimp, crab; improves anti-stress and disease resistance, enhances flesh color, reduces mortality caused by water quality stress.
- **Pet Feed:** Dogs, cats; improves immune function, has liver protective effects, reduces oxidative damage to pet organs.
- **Feed Premixes:** Vitamin, mineral and compound premixes; as a natural antioxidant and pigment, replaces synthetic additives to meet green feed formulation requirements.

#### 5. Usage Methods

Animal Species	Growth Stage	Normal Breeding Dosage (g/ton)	Stress Condition Dosage (g/ton)
Poultry	Broilers (0-42 days)	200-300	400-500
	Layers (Laying period)	150-250	300-400
	Breeding poultry	250-350	400-600
Livestock	Weaned piglets (7-28 days)	300-400	500-600
	Grow-finish pigs	200-300	300-400
	Lactating sows	300-400	400-500
	Dairy cattle (Lactation)	250-350	350-500
Aquaculture	Fish/Shrimp (All stages)	300-500	600-800
Pet Feed	Dogs/Cats (Adult)	100-200	200-300
Feed Premixes	Mineral/Vitamin premix	0.5%-1.0% (by weight)	

#### 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 dust 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.