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Technical Data Sheet (TDS)

- Feed Grade Dicalcium Phosphate (DCP)Issue Date: 28 FEB 2026 | Version: V1.0

1. Product Overview

- **Product Name**: Dicalcium Phosphate (Feed Grade, DCP)
- **CAS Number**: 7757-93-9 | **Molecular Formula**: $CaHPO_4 \cdot 2H_2O$ | **Molecular Weight**: 172.09 g/mol
- **Chemical Nature**: An inorganic mineral salt and the **most cost-effective** source of calcium and phosphorus for animal feed. It is a secondary calcium phosphate with moderate solubility, characterized by its high citrate solubility.
- **Core Characteristics**: Economical price, balanced Ca/P ratio (1:1.2), high citrate-soluble phosphorus (suitable for mature animals), low fluoride content, and excellent flowability.
- **Core Application**: The mainstream mineral additive for compound feed. Widely used in feed for grower/finisher pigs, layers, broilers, ruminants and aquatic animals. Ideal for reducing feed formulation costs while meeting mineral requirements.

2. Technical Specifications (Feed Grade)

Item	Standard Requirement (GB/T 22548)	Test Method
Calcium (Ca) Content	23.0% - 25.0%	Complexometric Titration
Phosphorus (P) Content	16.0% - 18.0%	UV-Vis Spectrophotometry
Citrate Soluble P	≥12.0%	Gravimetric Method
Appearance	White crystalline powder	Visual Inspection
pH Value (1% Suspension)	7.0 - 8.0	Digital pH Meter
Loss on Drying	22.0% - 26.0%	105℃ Constant Weight Method
Fluoride (F^-)	≤180 ppm	Ion Selective Electrode
Heavy Metals (as Pb)	≤5 ppm	Atomic Absorption Spectrometry (AAS)
Arsenic (As)	≤2 ppm	Atomic Fluorescence Spectrometry (AFS)
Microbiological Limits	Meet GB 13078.1	Plate Count & Detection
Particle Size (Typical)	80-120 mesh (customizable)	Sieve Analysis

3. Product Advantages (Feed Grade Focus)

1. **Optimal Cost-Performance**: The most economical phosphorus source in feed formulation, significantly reducing feed costs compared to MCP (Monocalcium Phosphate).
2. **High Citrate Solubility**: Contains high levels of citrate-soluble phosphorus, which is easily absorbed by the intestines of **mature animals** (pigs, poultry, ruminants).
3. **Neutral pH**: Unlike acidic MCP, DCP is neutral (pH 7-8), which does not alter the overall pH of the feed and is compatible with all feed ingredients.
4. **Excellent Flowability**: Free-flowing powder that does not clump easily, ensuring uniform mixing in compound feed production.
5. **Strict Safety Control**: Ultra-low fluoride and heavy metal content meet the strictest global feed safety standards, ensuring the safety of animal products.

4. Application & Dosage Guide (Feed Formulation)

4.1 Target Species & Core Benefits

- **Grower/Finisher Pigs**: Meets mineral needs for muscle growth; cost-effective alternative to MCP.
- **Layers**: Provides calcium for eggshell formation and phosphorus for metabolism; improves egg production rate.
- **Ruminants (Cattle/Sheep)**: The citrate-soluble phosphorus is highly available to ruminants, promoting rumen health and milk production.
- **Aquaculture**: Suitable for fish and shrimp feed; the moderate solubility reduces phosphorus leaching into water, minimizing environmental pollution.

4.2 Recommended Inclusion Levels (w/w, based on total compound feed)

Species	Growth/Production Stage	Recommended Dosage of DCP
Pigs	Growers/Finishers (30-120 kg)	1.5% - 2.0%
Poultry	Layers (Peak/Late Production)	2.0% - 3.0%
Poultry	Broilers (Finisher)	1.0% - 1.5%
Ruminants	Beef Cattle/Dairy Cows	1.0% - 2.0%
Aquaculture	Fish/Shrimp (Grow-out)	1.5% - 2.5%
Note: For weaned piglets and young chicks, it is recommended to use a combination of MCP and DCP to balance solubility and cost.		

5. Handling & Formulation Guidelines

1. **Easy Mixing**: As a free-flowing powder, it can be directly added to the feed mixer. No special premixing is required, but premixing with fine ingredients is recommended for small-batch production.
2. **Wide Compatibility**: Fully compatible with all feed ingredients including amino acids, vitamins, probiotics, enzymes and other minerals. Its neutral nature avoids chemical reactions with alkaline additives.
3. **Processing Stability**: Resistant to high temperatures during feed pelleting and extrusion. The crystal structure is stable, and there is no loss of calcium or phosphorus during processing.
4. **Storage Tips**: Although it is less hygroscopic than MCP, it should still be stored in a dry environment to prevent caking caused by excessive moisture.

6. Packaging, Storage & Shelf Life

- **Packaging Specifications**:
  - **Standard Packaging**: 25 kg PP woven bags with inner PE liners (moisture-proof, durable for bulk transport).
  - **Bulk Packaging**: 500 kg / 1000 kg jumbo bags with inner PE liners (for large feed mills, reducing unloading time).
  - **Sample Packaging**: 100 g / 500 g HDPE plastic bottles (sealed, for quality testing).
- **Storage Requirements**:
  - Store in a cool, dry, well-ventilated warehouse; temperature ≤25℃, relative humidity ≤65%.
  - Keep the package tightly sealed at all times. Caked product can be crushed and reused without affecting nutritional value.
  - Shelf Life: **36 months (unopened, under specified conditions)**; 12 months after opening (if resealed tightly).
- **Transportation Requirements**: Non-hazardous goods. Transport in covered, dry ordinary cargo vehicles. Protect from rain and moisture to prevent package dampening and product caking.

7. Quality Assurance & Control

1. **Production Standards**: Produced in a GMP-compliant facility with ISO 9001 (Quality Management) and ISO 22000 (Food Safety) certifications. Using high-purity phosphate rock and calcium sources.
2. **Batch Testing**: Every batch undergoes rigorous testing for calcium, phosphorus, citrate solubility, fluoride, heavy metals and microbiology. A detailed English COA is provided with each shipment.
3. **Third-Party Validation**: Accepts testing by international authoritative laboratories (SGS, Intertek, BV) to verify compliance with China, EU and US feed safety standards.
4. **Technical Support**: A professional nutrition team provides guidance on feed formulation, cost optimization (MCP/DCP ratio) and quality control to help customers maximize economic benefits.