

Technical Data Sheet (TDS)

Issue Date: February 28, 2026 **Product Name:** Mono Dicalcium Phosphate (Feed Grade) **CAS**

Number: 7758-23-8

1. Product Overview

Mono Dicalcium Phosphate (MDCP) is a high-quality, water-soluble inorganic phosphate salt. It is manufactured through a chemical reaction of calcium carbonate and food-grade phosphoric acid, followed by purification and drying. As a critical feed additive, MDCP provides animals with highly bioavailable **phosphorus (P)** and **calcium (Ca)**, two essential minerals required for bone development, eggshell formation, muscle function, and energy metabolism. Its moderate solubility ensures optimal absorption in the animal gut.

2. Chemical & Physical Properties

Property	Typical Value
Chemical Name	Calcium hydrogen phosphate (monohydrate)
CAS No.	7758-23-8
Formula	CaHPO ₄ ·H ₂ O
Molecular Weight	172.09 g/mol
Appearance	White crystalline powder
Ca Content	16.0% - 17.5%
Total P Content	21.5% - 22.5%
Ca:P Ratio	Approximately 1:1.3 (Ideal for monogastrics)
Solubility	Slightly soluble in water; Soluble in dilute acids
pH (1:20 Suspension)	3.8 - 4.2
Bulk Density	1.2 - 1.3 g/cm ³

3. Quality Specifications

Test Item	Feed Grade Standard
Total Phosphorus (P)	≥ 21.0%
Calcium (Ca)	15.0% - 18.0%
Fluoride (F)	≤ 180 ppm
Arsenic (As)	≤ 2 ppm
Lead (Pb)	≤ 10 ppm
Loss on Drying	≤ 5.0%
Fineness (0.5mm sieve)	≥ 95%
Microbiological	E. coli (-), Salmonella (-)

4. Product Advantages

- High Bioavailability:** Superior solubility compared to Dicalcium Phosphate (DCP), making phosphorus more absorbable for pigs, poultry, and aquaculture species.
- Optimal Ca:P Ratio:** The 1:1.3 ratio is perfectly suited for the nutritional needs of monogastric animals, preventing mineral imbalances.

3. **Low Fluoride:** Strict control of fluoride content ensures animal safety and compliance with global feed standards.
4. **Anti-Caking:** Free-flowing properties ensure uniform mixing in feed production.
5. **Stable Quality:** Consistent nutrient content batch-to-batch.

5. Applications & Recommended Dosage

MDCP is suitable for all animal feeds, especially where high phosphorus availability is required.

Animal Species	Growth Stage	Dosage (kg/ton of feed)
Swine	Weaned Piglets	10 - 15 kg
	Grow-Finish	8 - 12 kg
	Sows (Lactation)	12 - 16 kg
Poultry	Broilers	6 - 10 kg
	Layers (Peak Production)	8 - 12 kg
Aquaculture	Fish/Shrimp	15 - 25 kg
Ruminants	Calves	5 - 8 kg

6. Handling & Mixing Guidelines

1. **Mixing:** MDCP is a fine powder. For best results, pre-mix with a small amount of carrier (e.g., corn meal) before adding to the main batch to ensure homogeneous distribution.
2. **Pelleting:** Excellent stability during feed pelleting processes (temperatures up to 85°C).
3. **Compatibility:** Compatible with all common feed ingredients, vitamins, and trace minerals. Avoid direct mixing with strong alkaline products in concentrated form.

7. Packaging & Storage

7.1 Packaging

- **Small Pack:** 1 kg, 5 kg, 20 kg sealed bags (for trials).
- **Standard Pack:** 25 kg multi-ply paper bags with inner PE liner (moisture-proof).
- **Bulk Pack:** 500 kg / 1000 kg FIBC bulk bags (for large users).

7.2 Storage

- **Conditions:** Store in a cool, dry, well-ventilated warehouse. Protect from rain, snow, and excessive humidity.
- **Shelf Life:** 24 months from the date of manufacture when stored in the original unopened packaging.
- **After Opening:** Close the bag tightly after each use to prevent moisture absorption and caking.

8. Regulatory Compliance

- **China:** GB/T 22549-2008 (Feed Grade MDCP), GB 13078-2017.
- **EU:** Regulation (EC) No 1831/2003, REACH Registered.
- **USA:** FDA 21 CFR Part 573.380.
- **Note:** This product is intended for animal feed use only. Not for human consumption.