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TECHNICAL DATA SHEET

25-Hydroxyvitamin D3 1.25%

Plant-derived microencapsulated powder for animal feed

Product Description

25-Hydroxyvitamin D3 1.25% is a feed-grade powder with a plant-derived microcapsule wall. It supplies 25-hydroxycholecalciferol to support calcium and phosphorus utilization, skeletal development and eggshell formation. The product is intended for incorporation into premixes, concentrates and complete feeds as part of a balanced vitamin and mineral program.

1 Product Identification

Product name	25-Hydroxyvitamin D3 1.25%
Active ingredient	25-Hydroxycholecalciferol (25-OH-D3; calcifediol)
Product form	Free-flowing microencapsulated powder
Origin	Plant-derived fermentation route
Capsule wall	Plant-based; gelatin-free
Nominal potency	12.5 mg of 25-OH-D3 per gram of product
Grade and application	Feed grade; premixes, concentrates and complete feeds

2 Typical Specification

Item	Specification
Appearance	Off-white to light yellow powder
25-Hydroxyvitamin D3 content	≥ 1.25% (≥ 12,500 mg/kg)
Particle size	≥ 95% passing an 80-mesh sieve
Loss on drying	≤ 13.0%
Heavy metals as Pb	≤ 5 mg/kg
Total arsenic as As	≤ 3 mg/kg

3 Product Advantages and Applications

Direct provision of the circulating vitamin D metabolite

25-OH-D3 is the principal circulating form of vitamin D3. Supplying this form bypasses the initial liver hydroxylation step and provides a precursor for further conversion to the active vitamin D hormone. It supports vitamin D nutrition when mineral demand is high.

Plant-based microencapsulation

The plant-based capsule wall contains no animal gelatin. The enclosed microcapsule structure helps protect the active ingredient from exposure to oxygen, light and moisture, while supporting practical handling and distribution during feed mixing.

Calcium and phosphorus utilization

Use within balanced diets to support mineral absorption and deposition, bone integrity and eggshell formation. In layer programs, the main nutritional objectives are stronger shells, fewer downgraded eggs and maintenance of laying performance, particularly in older flocks.

4 Layer Feeding and Performance Evaluation

Review the vitamin and mineral program from mid lay, around 40 weeks of age, with particular attention to late lay after 60 weeks. Adjust the feeding program alongside calcium supply, available phosphorus, feed intake and environmental management.

Evaluation area	Practical measures
Eggshell quality	Cracked and soft-shelled eggs; shell strength and thickness
Laying performance	Hen-day laying rate; saleable egg number and egg mass
Flock condition	Feed intake; bone and leg condition; mortality and culling

Illustrative value of reducing cracked eggs

Assume 10,000 hens, a constant 75% laying rate, 62.5 g per egg and a 30-day period. A hypothetical decrease in cracked eggs from 8% to 7% gives the following result at an egg price of RMB 7.30/kg.

Measure	Calculated gain over 30 days
Additional saleable eggs	2,250 eggs
Additional saleable egg mass	140.625 kg
Additional gross egg sales	RMB 1,026.56

This calculation illustrates the value of shell quality. It is not a prediction of product response or net profit; product cost and any changes in feed, labor and other operating costs must be assessed separately.

5 Recommended Use and Inclusion Guide

The following formulation guide applies to the 1.25% powder. Rates are expressed as grams of product per metric ton (1,000 kg) of complete feed. Final inclusion must account for species, production stage, total dietary vitamin D supply and applicable local requirements.

Animal or production stage	Product g/t feed	25-OH-D3 µg/kg feed
Layer pullets up to 18 weeks	3.0 - 4.5	37.5 - 56.25
Layers 19 to 60 weeks	4.5 - 6.0	56.25 - 75.0
Layers after 60 weeks	6.0 - 7.5	75.0 - 93.75
Broiler chicks	4.5 - 6.0	56.25 - 75.0
Sows during gestation or lactation	4.5	56.25
Nursery piglets	4.5 - 6.0	56.25 - 75.0
Pacific white shrimp	1.8 - 2.4	22.5 - 30.0
Salmon and trout	4.5 - 6.0	56.25 - 75.0

Potency conversion

At the nominal 1.25% assay, 1 g of product supplies 12.5 mg of 25-OH-D3; 1 g/t feed contributes 12.5 µg/kg feed. For example, 6 g/t supplies 75 µg/kg feed. These values describe active-ingredient mass and do not imply a fixed vitamin D3 replacement ratio.

Mixing and formulation

Weigh accurately and preblend with a suitable feed carrier before incorporation into the main batch. Ensure homogeneous mixing. For premixes and concentrates, calculate the product inclusion back to the final complete-feed level. Ruminant diets require a separate formulation based on daily intake and total vitamin D supply.

6 Packaging Storage and Shelf Life

Packaging: 20 kg net bag, or according to customer requirement.

Storage: Keep tightly closed in a cool, dry, clean and well-ventilated place. Protect from sunlight, moisture, high temperature and contamination. Reseal immediately after opening and use promptly.

Shelf life: 24 months from production date in original unopened packaging under recommended storage conditions.

7 Handling and Safety

For animal feed use only. Avoid inhalation of dust and contact with eyes. Use suitable ventilation, gloves, eye protection and a dust mask where needed. Wash hands after handling and follow good feed manufacturing practices.