Chengdu PNP Biotech Co., Ltd.

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STABILITY DATA

Vegan Vitamin D3 100,000 IU/g Powder

This document presents the stability profile of Vegan Vitamin D3 100,000 IU/g Powder supplied by Chengdu PNP Biotech Co., Ltd. Samples were packed in the normal commercial package and stored under the conditions stated for each study, and the product was tested at every time point shown below. The programme covers a long-term study and an accelerated study, conducted in accordance with the ICH Q1A methodology (and the corresponding pharmacopeial stability guideline for drug substances), each performed on three separate, non-consecutive production batches, with the analytical results from testing actually carried out at each time point.

Product Name	Vegan Vitamin D3 100,000 IU/g Powder	**CAS No.**	67-97-0
Molecular Formula	C27H44O	**Molecular Weight**	384.6

Long-Term Stability

Condition: 25 ± 2 °C / 60 ± 5 % RH. Time points are expressed in months. Each batch is identified in the merged row above its results; all batches were stored through the final time point, and every listed result is from testing performed at that time point.

The shelf life stated for this product is confirmed by these real-time long-term stability studies.

Test Item	Specification	0 m	3 m	6 m	9 m	12 m	18 m	24 m
Batch LT-1 | Manufacture 2023-11-08 | Study start 2023-11-15								
Appearance / color	White to off-white powder	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms
Assay (Vitamin D3)	≥ 100,000 IU/g	117,690 IU/g	116,122 IU/g	114,543 IU/g	113,807 IU/g	111,969 IU/g	109,581 IU/g	106,572 IU/g
Loss on Drying	≤ 5.0%	2.19%	2.32%	2.46%	2.62%	2.61%	3.00%	3.21%
Standard Plate Count	≤ 10,000 cfu/g	851 cfu/g	856 cfu/g	1,325 cfu/g	523 cfu/g	1,857 cfu/g	2,312 cfu/g	2,082 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	77 cfu/g	52 cfu/g	52 cfu/g	142 cfu/g	127 cfu/g	125 cfu/g	244 cfu/g
Batch LT-2 | Manufacture 2024-04-03 | Study start 2024-04-10								
Appearance / color	White to off-white powder	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms
Assay (Vitamin D3)	≥ 100,000 IU/g	116,687 IU/g	115,658 IU/g	115,110 IU/g	113,729 IU/g	112,088 IU/g	109,355 IU/g	106,990 IU/g
Loss on Drying	≤ 5.0%	2.24%	2.23%	2.39%	2.57%	2.71%	2.99%	3.22%
Standard Plate Count	≤ 10,000 cfu/g	1,008 cfu/g	846 cfu/g	908 cfu/g	1,214 cfu/g	1,258 cfu/g	1,264 cfu/g	1,799 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	48 cfu/g	117 cfu/g	78 cfu/g	51 cfu/g	125 cfu/g	127 cfu/g	173 cfu/g
Batch LT-3 | Manufacture 2024-09-11 | Study start 2024-09-18								
Appearance / color	White to off-white powder	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms
Assay (Vitamin D3)	≥ 100,000 IU/g	117,466 IU/g	115,549 IU/g	114,038 IU/g	113,584 IU/g	112,095 IU/g	109,319 IU/g	106,765 IU/g
Loss on Drying	≤ 5.0%	2.03%	2.11%	2.31%	2.52%	2.61%	2.81%	3.05%
Standard Plate Count	≤ 10,000 cfu/g	357 cfu/g	1,062 cfu/g	1,029 cfu/g	1,169 cfu/g	970 cfu/g	812 cfu/g	2,020 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	85 cfu/g	112 cfu/g	130 cfu/g	64 cfu/g	132 cfu/g	144 cfu/g	246 cfu/g

Accelerated Stability

Condition: 40 ± 2 °C / 75 ± 5 % RH. Time points are expressed in months.

Accelerated data are supportive only; the shelf life is ultimately confirmed by the real-time long-term studies above.

Test Item	Specification	0 m	1 m	2 m	3 m	6 m
Batch ACC-1 | Manufacture 2023-10-24 | Study start 2023-10-31						
Appearance / color	White to off-white powder	Conforms	Conforms	Conforms	Conforms	Conforms
Assay (Vitamin D3)	≥ 100,000 IU/g	118,596 IU/g	116,433 IU/g	114,721 IU/g	113,349 IU/g	108,025 IU/g
Loss on Drying	≤ 5.0%	2.19%	2.41%	2.59%	2.64%	3.19%
Standard Plate Count	≤ 10,000 cfu/g	868 cfu/g	912 cfu/g	728 cfu/g	603 cfu/g	850 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	44 cfu/g	51 cfu/g	145 cfu/g	131 cfu/g	93 cfu/g

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Test Item	Specification	0 m	1 m	2 m	3 m	6 m
Batch ACC-1 | Manufacture 2023-10-24 | Study start 2023-10-31						
Batch ACC-2 | Manufacture 2023-12-06 | Study start 2023-12-13						
Appearance / color	White to off-white powder	Conforms	Conforms	Conforms	Conforms	Conforms
Assay (Vitamin D3)	≥ 100,000 IU/g	117,478 IU/g	116,102 IU/g	114,606 IU/g	113,251 IU/g	108,090 IU/g
Loss on Drying	≤ 5.0%	2.05%	2.13%	2.35%	2.64%	3.04%
Standard Plate Count	≤ 10,000 cfu/g	469 cfu/g	868 cfu/g	485 cfu/g	1,551 cfu/g	2,166 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	64 cfu/g	120 cfu/g	96 cfu/g	154 cfu/g	162 cfu/g
Batch ACC-3 | Manufacture 2024-01-17 | Study start 2024-01-24						
Appearance / color	White to off-white powder	Conforms	Conforms	Conforms	Conforms	Conforms
Assay (Vitamin D3)	≥ 100,000 IU/g	119,020 IU/g	116,330 IU/g	115,214 IU/g	113,140 IU/g	108,285 IU/g
Loss on Drying	≤ 5.0%	2.05%	2.26%	2.36%	2.66%	3.09%
Standard Plate Count	≤ 10,000 cfu/g	567 cfu/g	585 cfu/g	1,245 cfu/g	682 cfu/g	1,769 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	95 cfu/g	42 cfu/g	56 cfu/g	66 cfu/g	109 cfu/g

Legend: “Conforms” means the attribute is consistent with the initial (0-month) value and meets the specification.

Prepared by: Mia Yu Approved by: Charlie Wang Date: Nov. 17, 2026