



TECHNICAL DATA SHEET NANO HYDROXYAPATITE (POWDER)

COMPOSITION, INFORMATION OF INGREDIENTS

Formula	Ca ₁₀ (PO ₄) ₆ (OH) ₂ with substitution of (Mg, Na and Carbonate)
Formula Weight	980-1020 g/mole
Density	2.75-3.3 g/cm ³
Biomimetic Hydroxyapatite Purity:	> 96%
Contains	
Mg + Na	< 4%
Carbonate	< 3%
Total Heavy Metals (like Pb)	< 3 ppm
Arsenic	< 2 ppm
Zeta Potential	(-15) - (+15) mv
Color	White

PHYSICAL AND CHEMICAL PROPERTIES

Form	Powder
Color	White
Nanoparticle Morphology	Nano Rod
Nanoparticle Size	Mean~50 nm
Melting Point	Above 12000 C
Boiling point	N/A
Specific gravity	2.75-3.30 gr.cm ⁻³
Solubility in Water	Insoluble
Odor	Odorless

APPLICATIONS

Oral care	Grade Code: PO
Food and Additives	Grade Code: PF
Drug and Supplement	Grade Code: PD
Medical	Grade Code: PM
3D Print	Grade Code: PP

Hydroxyapatite powders are a micrometric agglomeration of hydroxyapatite nanoparticles with multiple applications.

1- Hydroxyapatite powders are a micrometric agglomeration of hydroxyapatite nanoparticles.

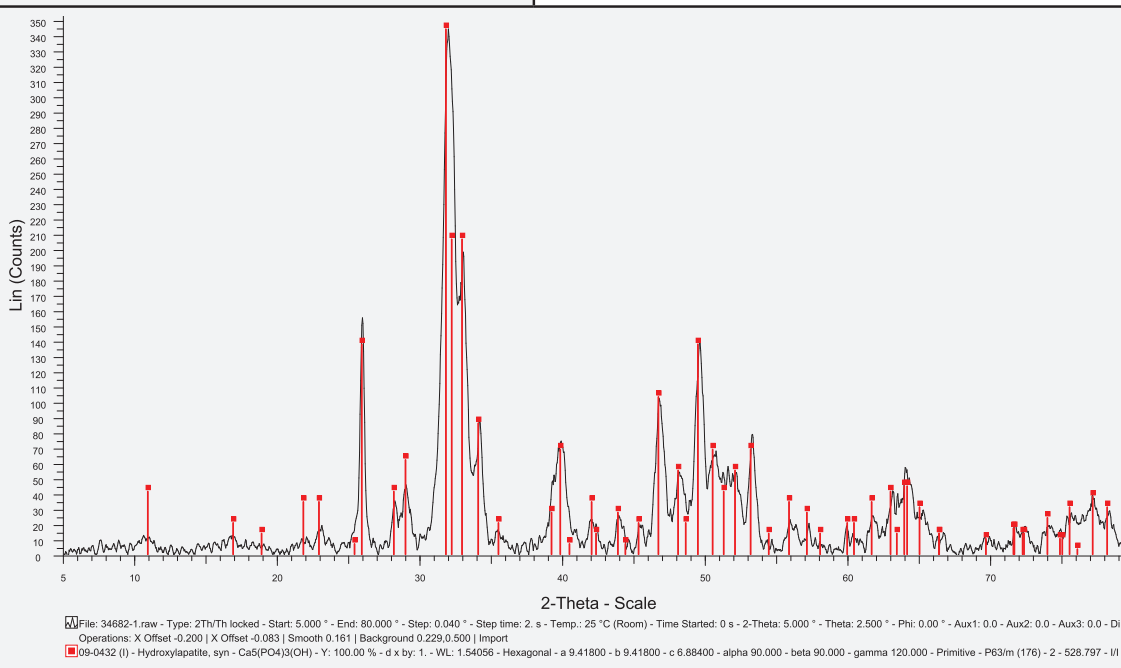
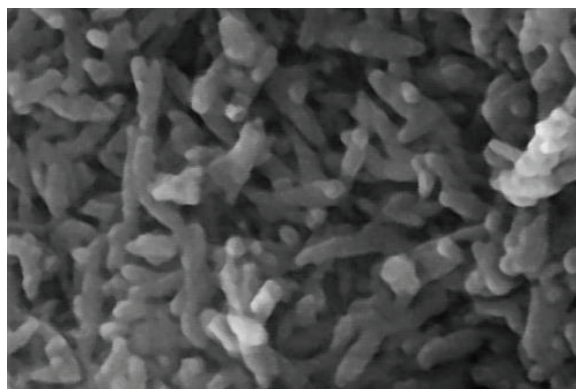
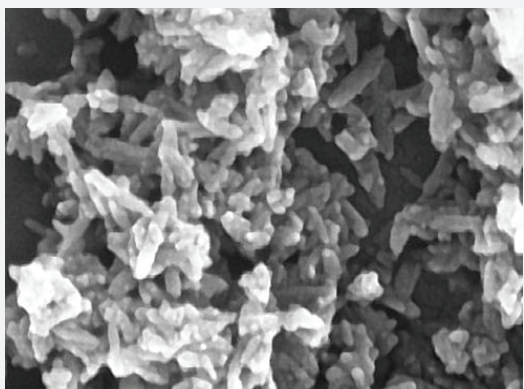
2- These powders are recommended in toothpaste, tooth tablets, dental varnishes, and whitening.

3- The white and odourless properties of powders make them suitable for applications in food and supplements to enhance bone strength.

They can also be applied in coating implants to improve their bio performance, manufacturing biocompatible bone graft substitutes and 3D printed implants.

TECHNICAL DATA SHEET NANO HYDROXYAPATITE (POWDER)

CHARACTERIZATION



SAFETY & HANDLING

You can download Material Safety Data Sheet (MSDS) from our website. We strongly recommend reading MSDS before using our product.

PACKAGING & STORAGE

Information for the safe handling

Keep the container tightly sealed.

Store in dry place.

Ensure good ventilation.

Storage temperature < 50 °C



THECNICAL DATA SHEET ZINC OXIDE NANO (POWDER)

Document Code: QC.FP.TIN.001/COA.02	Ref: USP 46	Rev: 01
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Certificate Of Analysis

Name of Product: HYDROXYAPATITE POWDER		
Batch Size: 100.0 kg		
Batch No.: 012.03.072.03.B4/08	Mfg. Date: 2024.05.20	Sampling Date: 2024.05.20
Q.C. No.: 012.03.072.03.B4/08	Retest Date: 2027.05.20	Analysis Date: 2024.05.20

Test Item	Specification	Results	Reference
1 Appearance	White Solid Powder	Conform	USP43
2 Solubility	Soluble in 1 M Hydrochloric acid.	Conform	USP43
3 Soluble Matter in Water	N.M.T 0.5%	Conform	USP43
4 Acid-Insoluble Substances	N.M.T 0.2%	0.1% >	USP43
5 Assay	N.L.T 34.0% & N.M.T 40.0% of Ca	Conform	USP43
6 pH	N.L.T 6.5 & N.M.T 7.5	7.1	In House
7 Chloride	N.M.T 0.14%	Conform	USP43
8 Sulfate	N.M.T 8000 ppm	Conform	USP43
9 Arsenic	N.M.T 3 ppm	ppm 2 >	USP43
10 Barium	No turbidity appears within 15 min.	Conform	USP43
11 Heavy Metals	N.M.T 15 ppm	ppm 3 >	In House
12 Cd	N.M.T 2 ppm	ppm 1 >	In House
13 Hg	N.M.T 2 ppm	ppm 1 >	In House
14 Pb	N.M.T 5 ppm	ppm 1 >	In House
15 Co	N.M.T 1 ppm	Conform	In House
16 Cr	N.M.T 1 ppm	Conform	In House
17 Ni	N.M.T 1 ppm	Conform	In House
18 Sb	N.M.T 3 ppm	Conform	In House
19 Storage Temperature	N.M.T 50	Conform	In House
20 Shelf-life Total Days	N.M.T 1092 Days	Conform	In House
21 Shelf-life Total Months	N.M.T 36 Months	Conform	In House
22 Aerobic Plate Count	N.M.T 100 cfu/g	30>	USP43
23 Yeasts and Molds	N.M.T 100 cfu/g	10>	USP43
24 Dibasic Salt & Calcium Oxide	13.0-14.3 ml of 1N HCl is consumed for each g of salt	ml 13.6	USP43
25 Limit of Fluoride	NMT 75 ppm	ppm 50	USP43
26 Limit of Nitrate	The blue color persists for NLT 5 min	Conform	USP43
27 Water-Soluble Substances	NMT 0.5%	0.5% >	USP43
28 Loss on Ignition	NMT 8.0 %	4.2%	USP43
29 Particle Size	Mean Average Size ~ 50 nm	Conform	ISO 80004
30 Phase Identification	Hydroxyapatite (By XRD)	Conform	JCPDS PDF4.0

NOTE: N.L.T: Not Less Than (Min) | N.M.T: Not More Than (Max)

Analyst:	☒ Approved by: ☐ Rejected by: Q. C. Manager: Farhad Bakhshi Date: 2024.05.20	Authorized Person: Parto Tahay Moghadam Date: 2024.05.20
Checked by:		