




www.matexcel.com



Hydroxyapatite

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Hydroxyapatite

Hydroxyapatite (HAp) is a naturally occurring mineral of biological and agricultural importance. It is a member of calcium phosphate, and it has a Ca/P ratio of 1.67 which is identical to bone apatite. The common mineral apatite has formula $\text{Ca}_5(\text{PO}_4)_3\text{X}$, where X is F, Cl, OH, or a mixture; it is hydroxyapatite if the extra ion is mainly hydroxide. Up to 50% by volume and 70% by weight of human bone is a modified form of HAp, known as bone mineral. The main substance of our teeth is HAp (97 % of enamel and 70 % of dentin). Due to its similarity in size, crystallography and chemical composition with human hard tissue, HAp is one of the most widely studied materials for orthopedic and dental implants. HAp could be prepared from natural or synthesized sources via several processes, and can be made as a powder.

Applications

- In oral applications such as toothpaste: Nano-hydroxyapatite (nano-HAp) can effectively remineralize and repair tooth surface, also improves the antimicrobial properties and tooth sensitivity.
- It is attracting interest in prosthetic applications. For example, HAp coating has been used in uncemented knee prostheses.
- In bone-healing applications such as bone fillers: Restoration of periodontal bone defects and edentulous ridge augmentation.
- It is a valuable resource that serves as an important agrochemical fertilizer.
- It is used in the chromatographic separation of biomolecules, such as protein and peptide separations.
- Porous HAp can be used as drug and gene delivery systems due to their biocompatibility, bioactivity and osteoconductivity.

Matexcel provides HAp in different dimensions, from nano to micro sizes, as well as different grades such as research, medical and food grades.

Products List

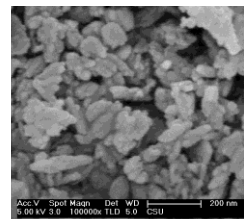
Hydroxyapatite (HAp) (acicular) Powder

Cat.No.: CER-0001

Particle Size: 60nm

Purity: 96%

Application: Food and toothpaste additive

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4


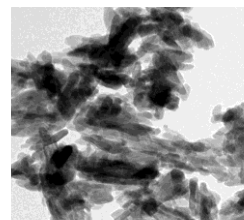
Hydroxyapatite (HAp) (acicular) Powder

Cat.No.: CER-0002

Particle Size: 40nm

Purity: 96%

Application: Protein separation

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4


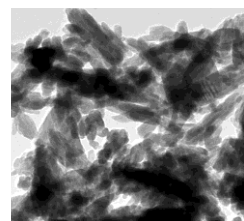
Hydroxyapatite (HAp) (acicular) Powder

Cat.No.: CER-0003

Particle Size: 20nm

Purity: 97.5%

Application: Low-purity artificial bone

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4


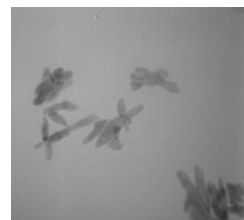
Hydroxyapatite (HAp) (acicular) Powder

Cat.No.: CER-0004

Particle Size: 20nm wide and 150nm long

Purity: 99.5%

Application: High-purity artificial bone

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4


Hydroxyapatite (HAp) (Short bar) Powder

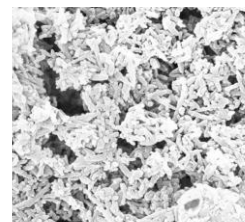
Cat.No.: CER-0005

Particle Size: 30nm wide and 100nm long

Purity: 99%

Application: Artificial bone, artificial joint

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4



Hydroxyapatite (HAp) (Fibrous) Powder

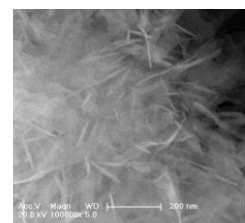
Cat.No.: CER-0006

Particle Size: 10nm wide and 500nm long

Purity: 99%

Application: Artificial bone, artificial joint

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4



Hydroxyapatite (HAp) (Spherical) Powder

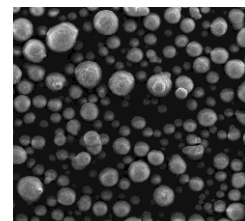
Cat.No.: CER-0007

Particle Size: 12-100 μm

Purity: 99%

Application: Artificial bone coating

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4



HAP (Spherical) Powder

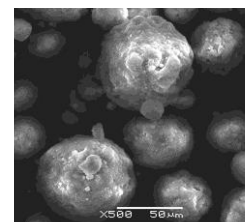
Cat.No.: CER-0008

Particle Size: 12-100 μm

Purity: 96%

Application: Food and toothpaste additive

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 \geq 99.5\%$; heavy metal $\leq 8\text{ppm}$; As $\leq 1\text{ppm}$; pH 7.4



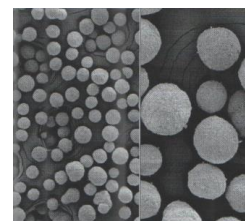
Hydroxyapatite (HAp) Microspheres

Cat.No.: CER-0009

Particle Size: 10 μm ; 20 μm ; 40 μm ; 80 μm

Application: Drug release carrier, bone defect filling material

Chemical Composition %: $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$



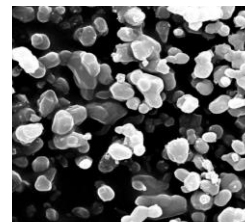
beta-Tricalcium phosphate (TCP) Powder

Cat.No.: CER-0010

Particle Size: 0.5 μ m; 3 μ m; 600-900 mesh; 325 mesh

Purity: 96%

Application: Research and medical grade (ASTM F1088-04a standard)

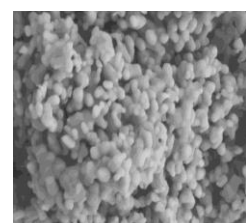
Chemical Composition %: β -Ca₃(PO₄)₂**alfa-Tricalcium phosphate (TCP) Powder**

Cat.No.: CER-0011

Particle Size: 0.2-500 μ m

Purity: >98%

Application: Clinical orthopedics, orthopedics and cosmetic surgery, dentistry, repair of bone defects and bone fusion caused by trauma, tumors, inflammation, bone diseases, etc.

Chemical Composition %: α -Ca₃(PO₄)₂**Tetracalcium phosphate (TTCP) Powder**

Cat.No.: CER-0016

Particle Size: 0 μ m -150 μ m

Purity: >98%

Application: Calcium phosphate cement

Chemical Composition %: Ca₄(PO₄)₂O