



PLASMA BIOTAL LIMITED

TECHNICAL DATA SHEET

CAPTAL® SPRAY-GRADE HYDROXYLAPATITE

CAPTAL® spray-grade hydroxylapatite is a medical-grade, synthetic, high-purity, highly crystalline bio-resorbable bone substitute material designed to closely mimic the properties and composition of natural bone. It is manufactured specifically for use in thermal spray systems and provided in 5 standard sizes with a median particle size, D(50), in the range 20 - 90 µm (custom sizes are available on request). All CAPTAL® spray-grade HA meets the requirements of the ISO 13779-6 international standard.

Chemical Specification (Typical values in parentheses)

Phase Purity (%)	Ca ₁₀ (PO ₄) ₆ (OH) ₂	> 95	(99)
Crystallinity (%)		> 95	(99)
Ca:P Ratio		1.66-1.72	(1.67)
Heavy Metals (ppm)	Arsenic (As)	< 3	(< 1)
	Cadmium (Cd)	< 5	(< 1)
	Mercury (Hg)	< 5	(< 1)
	Lead (Pb)	< 30	(< 3)
Other Impurities (%) (Typical Values)	Silicon (SiO ₂)	< 0.02	
	Magnesium (MgO)	< 0.5	
	Iron (Fe ₂ O ₃)	< 0.05	
	Manganese (Mn ₃ O ₄)	< 0.01	
	Aluminium (Al ₂ O ₃)	< 0.05	
	Strontium (SrO)	< 0.05	
	Sodium (Na ₂ O)	< 0.03	

Physical Properties (Typical Values for Captal 30)

Morphology	Angular or Spherical
Colour	Pale Blue
Surface Area (BET) (cm²/g)	Size Dependent
Bulk Density (g/cm³)	0.55-0.90
Tapped Density (g/cm³)	0.75-1.20

Particle Size Specification (µm)

Product	D(10)	D(50)	D(90)
Captal 20	12 ± 2	20 ± 5	25 ± 5
Captal 30	15 ± 5	30 ± 5	50 ± 5
Captal 60-1	20 ± 5	45 ± 5	80 ± 10
Captal 60	35 ± 10	60 ± 10	100 ± 15
Captal 90	50 ± 15	90 ± 15	120 ± 20

Custom Particle Size distributions available on request – please contact us.

Storage and Handling

CAPTAL® ‘Spray-Grade’ Hydroxylapatite is stable if stored under the correct conditions. Ensure the container is correctly sealed and store in a cool, dry environment. CAPTAL® spray-grade HA is sold as non-sterile material. Please refer to the Safety Data Sheet for more information on the storage & handling of CAPTAL® HA materials.

Further Information

For more information on this or any other Plasma Biototal products, please either go to the website: www.plasma-biototal.com or contact us via email: biototal@plasma-group.co.uk

