



# PLASMA BIOTAL LIMITED

## TECHNICAL DATA SHEET

### CAPTAL® SINTERED HYDROXYLAPATITE

CAPTAL® sintered 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 provided in 5 standard sizes with an average particle size, d(50), in the range 20 - 90 µm (custom sizes are available on request). CAPTAL® 'S' (except fines) is spray grade material, and can be used in coating applications. All CAPTAL® HA meets the requirements of the ISO 13779-6 international standard.

#### Chemical Specification (Typical values in parentheses)

<b>Phase Purity</b>	Ca <sub>10</sub> (PO <sub>4</sub> ) <sub>6</sub> (OH) <sub>2</sub>	> 95 %	(99)
<b>Crystallinity</b>		> 95 %	(99)
<b>Ca:P Ratio</b>		1.66-1.72	(1.67)
<b>Heavy Metals</b>	Arsenic (As)	< 3 ppm	(< 1)
	Cadmium (Cd)	< 5 ppm	(< 1)
	Mercury (Hg)	< 5 ppm	(< 1)
	Lead (Pb)	< 30 ppm	(< 3)
<b>Other Impurities (Typical Values)</b>	Silicon (SiO <sub>2</sub> )	0.02 %	
	Magnesium (MgO)	< 3000 ppm	
	Iron (Fe <sub>2</sub> O <sub>3</sub> )	< 500 ppm	
	Manganese (Mn <sub>3</sub> O <sub>4</sub> )	< 100 ppm	
	Aluminium (Al <sub>2</sub> O <sub>3</sub> )	< 500 ppm	
	Strontium (SrO)	< 500 ppm	
	Sodium (Na <sub>2</sub> O)	< 300 ppm	

#### Physical Properties (Typical Values)

<b>Morphology</b>	Angular or Spherical
<b>Colour</b>	Pale Blue
<b>Surface Area (BET)</b>	Size Dependent
<b>Bulk Density</b>	0.55-0.90
<b>Tapped Density</b>	0.75-1.20

#### Particle Size Specification (µm)

Product	D(10)	D(50)	D(90)
<b>Fines</b>	< 10	< 15	< 20
<b>Capтал 20</b>	12 ± 2	20 ± 5	25 ± 5
<b>Capтал 30</b>	15 ± 5	30 ± 5	50 ± 5
<b>Capтал 60-1</b>	20 ± 5	45 ± 5	80 ± 10
<b>Capтал 60</b>	35 ± 10	60 ± 10	100 ± 15
<b>Capтал 90</b>	50 ± 15	90 ± 15	120 ± 20

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

#### Storage and Handling

CAPTAL® 'S' Hydroxylapatite is stable if stored under the correct conditions. Ensure the container is correctly sealed and store in a cool, dry environment. CAPTAL® 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](http://www.plasma-biototal.com) or contact us via email: [biototal@plasma-group.co.uk](mailto:biototal@plasma-group.co.uk)

