



P L A S M A B I O T A L L I M I T E D

## TECHNICAL DATA SHEET

### CAPTAL® 'R' UNSINTERED HYDROXYAPATITE

Captal® 'R' reactor grade powder is a medical grade synthetic high-purity, unsintered bio-resorbable bone substitute material. When heat treated and sintered under the correct conditions it will form a highly crystalline hydroxylapatite material. Typically, Captal® 'R' is sold with an average particle size, d(50), of 2-6 µm (custom sizes are available on request). All Captal® 'R' hydroxylapatite is sold as non-sterile.

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

<b>Phase Purity</b>	$\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$	> 95 %	(99)
<b>Crystallinity</b>	(By XRD)	70-90 %	(85)
<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)
	Silicon ( $\text{SiO}_2$ )	0.02 %	
<b>Other Impurities (Typical Values)</b>	Magnesium ( $\text{MgO}$ )	< 3000 ppm	
	Iron ( $\text{Fe}_2\text{O}_3$ )	< 500 ppm	
	Manganese ( $\text{Mn}_3\text{O}_4$ )	< 100 ppm	
	Aluminium ( $\text{Al}_2\text{O}_3$ )	< 500 ppm	
	Strontium (SrO)	< 500 ppm	
	Sodium ( $\text{Na}_2\text{O}$ )	< 300 ppm	

#### Physical Properties (Typical Values)

<b>Morphology</b>	Angular
<b>Colour</b>	White
<b>Particle Size Distribution</b>	d(10) = $2 \pm 2$ µm
	d(50) = $4 \pm 2$ µm
	d(90) = $6 \pm 3$ µm
<b>Surface Area (BET)</b>	> 5 m <sup>2</sup> /g

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

#### Storage and Handling

Captal® 'R' is stable if stored under the correct conditions. Ensure the container is correctly sealed and store in a cool, dry environment. Captal® 'R' is sold as non-sterile material and is not packaged in a clean room environment. Please refer to the safety data sheet for more information on the storage & handling of Captal® 'R' 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: [info@plasma-group.co.uk](mailto:info@plasma-group.co.uk)

