

# Zirconia Block User Instruction

Zirconia Blocks can be used for overlay coping, full contour and bridge, anterior restorations and etc. The following instructions provide general guidelines for designing, milling, coloring, sintering, procelain, polishing&glazing, and should be followed very carefully to avoid any loss of aesthetics, fit, durability or overall quality.

## Chemical composition

Components	HT-Plus	ST	ST-C	ST-ML	SHT	SHT-C	SHT-ML	3D-Pro-ML	UT	UT-C	UT-ML
ZrO <sub>2</sub> +HfO <sub>2</sub> +Y <sub>2</sub> O <sub>3</sub>	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%	≥99%
Y <sub>2</sub> O <sub>3</sub>	4.5%-6.0%	4.5%-6.0%	4.5%-6.0%	4.5%-6.0%	7.0%-7.8%	7.0%-7.8%	7.0%-7.8%	4.5%-10%	9%-10%	9%-10%	9%-10%
Al <sub>2</sub> O <sub>3</sub>	<0.25%	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%	<0.15%	<0.05%	<0.05%	<0.05%
Other Oxides	<0.15%	<0.15%	<0.5%	<0.5%	<0.15%	<0.5%	<0.5%	<0.5%	<0.05%	<0.5%	<0.5%

## Physical characteristics

Properties	HT-Plus	ST	ST-C	ST-ML	SHT	SHT-C	SHT-ML	3D-Pro-ML	UT	UT-C	UT-ML
Density before sintering(g.cm <sup>-3</sup> )	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05	3.15±0.05
Density after sintering(g.cm <sup>-3</sup> )	6.08±0.01	6.08±0.01	6.08±0.01	6.08±0.01	6.07±0.01	6.07±0.01	6.07±0.01	6.07±0.01	6.06±0.01	6.06±0.01	6.06±0.01
CTE(25-500°C)(K <sup>-1</sup> )	10.5±0.5	10.5±0.5	10.5±0.5	10.5±0.5	10.5±0.5	10.5±0.5	10.5±0.5	10.5±0.5	10.0±0.5	10.0±0.5	10.0±0.5
Flexural strength after sintering(Mpa)	1350	1200	1100	1100	1000	900	900	800-1200	650	600	600
Accelerated aging surface monoclinic phase content	<15%	<15%	<15%	<15%	<15%	<15%	<15%	<15%	<15%	<15%	<15%
Light transmittance (1.0±0.02mm)	37%	41%-43%	<43%	<43%	46%	<46%	<46%	<49%	49%	<49%	<49%
Chemical solubility after sintering(μg.cm <sup>-2</sup> )	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Cytotoxicity	0 Level	0 Level	0 Level	0 Level	0 Level	0 Level	0 Level	0 Level	0 Level	0 Level	0 Level
Radioactivity(Bq.g <sup>-1</sup> )	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sintering temperature(°C)	1500-1550 Recommend 1530	1500-1550 Recommend 1530	1500-1550 Recommend 1530	1500-1550 Recommend 1530	1480-1550 Recommend 1530	1480-1550 Recommend 1530	1480-1550 Recommend 1530	1450-1510 Recommend 1480	1435-1470 Recommend 1450	1435-1470 Recommend 1450	1435-1470 Recommend 1450

**Range of application**

Zirconia Type	HT-Plus	ST	ST-C	ST-ML	SHT	SHT-C	SHT-ML	3D-Pro-ML	UT	UT-C	UT-ML
Recommended application	Coping	Full contour	Full contour	Full contour	Full contour	Full contour	Full contour	All in one	Full contour of anterior	Full contour of anterior	Full contour of anterior
Matched coloring liquid	HT-Plus 16 shade liquid	ST 16 shade liquid	Magic yellow & Bleach blue	/	SHT 16 shade liquid	/	/	/	UT-A1,A2,A3,A3.5 B1,B2,B3,B4	/	/

**Sintering curve**

Material		Initial Temperature (C)	Heating Time(Min)	Final Temperature (C)	Holding Time(Min)	Heating Time(Min)	Final Temperature (C)	Holding Time(Min)	Cooling
3D-Pro-ML	1-3 Units	RT	150	900	0	116	1480	120	Cool to 200 C in furnace
	3-8 Units	RT	150	900	20	145	1480	120	Cool to 200 C in furnace
	More than 9 Units	RT	150	900	20	190	1480	120	Cool to 200 C in furnace
UT/UT-C/ UT-ML	1-3 Units	RT	150	900	20	110	1450	120	Cool to 200 C in furnace
HT-Plus/ST /SHT/ST-C /ST-ML/SHT -C/SHT-ML	1-3 Units	RT	150	900	0	126	1530	120	Cool to 200 C in furnace
	3-8 Units	RT	150	900	20	157	1530	120	Cool to 200 C in furnace
	More than 9 Units	RT	150	900	20	210	1530	120	Cool to 200 C in furnace

**Manufacturer:**Bloomden Bioceramics (HuNan)Co.,Ltd

**Address:** No.301,5th Building, Hi-tech Int'l Enterprise Port, LianDong U Valley, Linyu Rd, Dongfanghong Street, Hi-tech Development Zone, Changsha, HuNan,China

Tel: +86 0731-84210831 Fax: +86 731 84862982 E-mail:info@bloomden.com Web:http://www.bloomden.com