VIBRANTZ TECHNOLOGIES™

Technical data sheet

Ceramic powders and formulations for passive components

Barium strontium titanate – family of dielectric additive powders

Application:

Barium Strontium Titanate (BST) is a multi-component, single phase material having a Curie peak that can be moved by adjusting the Ba:Sr mole ratio. To achieve paraelectric properties, ratios of ≤ 60:40 are generally required. Otherwise, BST is observed to trend toward ferroelectric characteristics. Common applications can include capacitors, filled-polymer composites, microwave components, implanted medical devices and aerospace components. As this is a compositional family of products, Vibrantz can build BST formulations customized to fit your specific performance requirements.

Barium Strontium Titanate - Examples Data

Ba:Sr Mole Ratio			55:45	60:40	70:30	80:20	90:10
Fired Disc Data							
Dielectric Constant (25°C)			2862	5240	4979	2159	1888
Dielectric Constant at Curie Peak			8605	10,818	12,211	12,829	13,152
Curie Peak Temperature		°C	-10	5	35	70	100
Fired Density		g/cc	5.56	5.81	5.80	5.84	5.93
Peak Firing Temperature		°C	1360	1360	1360	1360	1360
Time at Peak Temperature		Hours	2.0	2.0	2.0	2.0	2.0
Particle Size Distribution	D90	µm	1.1	1.1	1.1	1.1	1.1
	D50	µm	0.7	0.7	0.7	0.7	0.7
	D10	µm	0.4	0.4	0.4	0.4	0.4
Surface Area		m^2/g	7.0	6.6	6.7	6.8	6.5
True Density[1]		g/cc	5.50	5.55	5.64	5.71	5.80

1 Per helium pycnometer

RoHS EU RoHS directive 2011/65/EU