

Technical Data Sheet

Ceramic Powders and Formulations for Passive Components Functional Additive Powder Products

Application

Ferro is a preferred source for electronic ceramic formulators due to our wide range of titanate, metal oxide, zirconate and stannate chemistries that can be used in the manufacture of

dielectric products for single & multilayer ceramic capacitors, piezoelectrics, embedded capacitors, filters, thick film devices, composite polymer films and a multitude of other applications.

Titanate-based Products

Product Code	216	217	218	Ticon 55	220-2	220-2A	222-2	Ticon 75
Product Name	Magnesium Titanate	Calcium Titanate	Strontium Titanate	Strontium Titanate	Bismuth Titanate	Bismuth Titanate	Neodymium Titanate	Magnesium Aluminosilicate Titanate
Chemical Formula	MgTiO ₃	CaTiO ₃	SrTiO ₃	SrTiO ₃	Bi ₄ Ti ₃ O ₁₂	Bi ₄ Ti ₃ O ₁₂	Nd ₂ Ti ₂ O ₇	Single Phase MgTiO ₃ +SiO ₂ +Al ₂ O ₃
Particle Size D50	μm	2.9	1.7	2.2	1.5	3.2	1.6	4.3
Surface Area	m ² /g	2.6	5.4	1.9	3.2	0.9	1.5	1.4
Loss on Ignition	wt-%	< 0.4	< 0.9	< 0.5	< 0.9	< 0.2	< 0.4	< 0.3
True Density ¹	g/cc	-	4.00	-	5.05	-	-	-
Typical Total Impurities	wt-%	< 0.4	< 0.9	< 0.9	< 0.7	< 0.1	< 0.1	< 0.3

¹ Per Helium Pycnometer

Metal Oxide Products

Product Code	320	320A	203-4	Ticon HG	Ticon CBG ²
Product Name	Bismuth Trioxide	Bismuth Trioxide	Titanium Dioxide (Rutile)	Titanium Dioxide (Rutile)	Titanium Dioxide (Rutile)
Chemical Formula	Bi ₂ O ₃	Bi ₂ O ₃	TiO ₂	TiO ₂	TiO ₂
Particle Size D50	μm	6.4	3.4	1.2	2.5
Surface Area	m ² /g	0.2	1.1	4.0	2.3
Loss on Ignition	wt-%	< 0.4	< 0.4	< 0.6	< 0.3
True Density ¹	g/cc	9.4	9.4	4.3	4.3
Typical Total Impurities	wt-%	< 0.3	< 0.3	< 0.1	< 0.1

¹ Per Helium Pycnometer

² Designed for filled-polymer prepreps in circuit board applications

Zirconia-based Products

Product Code	104-2	117	119
Product Name	Zirconium Oxide	Calcium Zirconate	Barium Zirconate
Chemical Formula	ZrO ₂	CaZrO ₃	BaZrO ₃
Particle Size D50	μm	0.8	3.3
Surface Area	m ² /g	8.3	1.4
Loss on Ignition	wt-%	< 0.7	< 0.7
True Density ¹	g/cc	5.6	4.8
Typical Total Impurities ²	wt-%	< 0.51	< 0.8

¹ Per Helium Pycnometer.

² Values do not include HfO₂.

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