

MG21F-02 Green Version Introduction

Product Development Dept.
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Formulation Comparison

	MG21F-02	GR21F-02F4	GR21F-02F4A	GR21F-02F4B
Flame Retardant	TBBP-A+ antimony trioxide	Green flame retardant A	Green flame retardant A	Green flame retardant A
Ion catcher	No	No	Type A+B	Type A
Resin	High viscosity resin	Add low viscosity resin	Add low viscosity resin	Add low viscosity resin
Filler	Angular Fused Silica	Add spherical silica	Add spherical silica	Add spherical silica

Property Data

Item	Unit	MG21F-02	GR21F-02F4	GR21F-02F4A	GR21F-02F4B
Gel Time	s	24	24	25	27
Spiral Flow	inch	29	29	32	38
Hot Hardness (Shore-D)	-	81	78	80	79
Viscosity	Pa.S	27	24	22	17
Flexural Modulus at RT	MPa	12582	15640	15306	14424
Flexural Strength at RT	MPa	112	126	121	116
Flammability Rating	1/8UL	V-0	V-0	V-0	V-0
glass transition temperature	°C	201	176	179	178
CTE1/CTE2	ppm	21/68	22/60	20/66	20/66
Dielectric Constant(ϵ)	1MHz	3.66	3.88	3.88	3.92
Dissipation Factor	1MHz	0.014	0.008	0.006	0.007
Volume Resistivity	E+15 Ω .cm	64	63	48	42
Dielectric Strength	alternating current (Kv/mm)	12	12	13	14
	direct current(Kv/mm)	39	44	44	41
Cl-	ppm	7	9	8	8
Na+	ppm	4	6	4	4
pH	-	4.4	4.9	5.5	6.2
Conductivity	μ s/cm	45	23	38	44
K+	ppm	1	1	1	1
Br-	ppm	0	0	0	0
Fe3+	ppm	5	0	0	0
SO42-	ppm	0	0	0	0

Notice: The data in the table above are measured with pilot line samples.

Thank you!

