Technical Data Sheet

BADAMID® | PA12 M20 FR V5

PA12-MD20 FR(17)

Mineral filled, flame retardant PA12 injection moulding grade with adjusted shrinkage properties

Properties	Test conditions	Test method	Unit	dry as molded	conditioned 23 °C, 50 % r.F.
Mechanical Properties					
Tensile Modulus	23°C, 1 mm/Min	ISO 527-1/2	MPa	1600	-
Tensile Strength at yield	23°C, 50 mm/Min	ISO 527-1/2	MPa	40	-
Tensile strain at yield	23°C, 50 mm/Min	ISO 527-1/2	%	5.5	-
Nominal strain at break	23°C, 50 mm/Min	ISO 527-1/2	%	-	-
Tensile stress at break	23°C, 5 mm/Min	ISO 527-1/2	MPa	-	-
Tensile strain at break	23°C, 5 mm/Min	ISO 527-1/2	%	-	-
Flexural Modulus	23°C	ISO 178	MPa	-	-
Flexural Strength	23°C	ISO 178	MPa	-	-
Charpy Impact Strength	23°C -30°C	ISO 179/1eU ISO 179/1eU	kJ/m² kJ/m²	- -	-
Charpy Notched Impact Strength	23°C -30°C	ISO 179/1eA ISO 179/1eA	kJ/m² kJ/m²	4 -	-
Izod Notched Impact Strength	23°C -30°C	ISO 180/1A ISO 180/1A	kJ/m² kJ/m²	- -	-
Ball indentation hardness	358 N	ISO 2039-1	MPa	-	-
Thermal Properties					
Melting temperature	10 K/min	ISO 3146	°C	178	
Temperature of deflection under load	0,45 MPa 1,8 MPa 8 MPa	ISO 75-1/2 ISO 75-1/2 ISO 75-1/2	°C °C °C	- 150 -	
Coefficient of linear thermal expansion	parallel across	ISO 11359-2 ISO 11359-2	E-4/K E-4/K	- -	
Thermal conductivity	Test plate 2 mm	DIN 52612-1	W/(m*K)	-	
Maximum service temperature (50% decrease in tensile strength)	some hours 20.000 h	IEC-60216 IEC-60216	°C °C	140 110	
Flammability		UL94 UL94 UL94 UL94	Wall thickness mm Rating Wall thickness mm Rating	0.4 V-0 3.0 V-0	
Glow wire test GWIT		IEC-60695-2-13 IEC-60695-2-13 IEC-60695-2-13 IEC-60695-2-13	Wall thickness mm Temperature °C Wall thickness mm Temperature °C	1.5 775 - -	
Glow wire test GWFI		IEC-60695-2-12 IEC-60695-2-12 IEC-60695-2-12 IEC-60695-2-12	Wall thickness mm Temperature °C Wall thickness mm Temperature °C	1.5 960 - -	
Electrical Properties					
Relative Permittivity	1 MHz	IEC-62631-2-1	-	-	-
Dissipation Factor	1 MHz	IEC-62631-2-1	E-4	-	-
Spec. Volume Resistivity	-	IEC-62631-3-1	Ohm*cm	-	-

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Properties	Test conditions	Test method	Unit	dry as molded	conditioned 23 ° C, 50 % r.F.
Spec. Surface Resistivity	-	IEC-62631-3-2	Ohm	-	-
Dielectric Strength	-	IEC-60243-1	kV/mm	-	-
Comparative Tracking Index (CTI)	-	IEC-60112	V	-	-
Other Data					
Water absorption	23°C, Saturation	ISO 62	%	1	
Moisture absorption	23°C, 50% r.h.	ISO 62	%	0.4	
Density	23°C	ISO 1183	g/cm³	-	
Melt Volume Rate (MVR) 	Value Temperature Test Load	ISO 1133 ISO 1133 ISO 1133	cm³/10min °C kg	40 235 2.16	
Viscosity number	0,5% in 96% H2SO4	ISO 307	cm³/g	-	
Processing injection molding					
Melt temperature			°C	220 - 260	
Mold temperature			°C	40 - 60	
Guide Value Moisture			%	< 0.05	
Drying temperature			°C	80 - 100	
Guide Value Drying time			h	2 - 4	

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