



*get the difference*

# BADAMID® | UL A703 GF20 FR HF

PA66-GF20-FR

Non halogenated, (red phosphorus and antimony free) flame retardant, 20% glass fibre reinforced injection moulding grade, UL94 listed

Properties	Test conditions	Test method	Unit	dry as molded	conditioned 23 °C, 50 % r.F.
<b>Mechanical Properties</b>					
Tensile Modulus	23°C, 1 mm/Min	ISO 527-1/2	MPa	8200	5500
Tensile Strength at yield	23°C, 50 mm/Min	ISO 527-1/2	MPa	-	-
Tensile strain at yield	23°C, 50 mm/Min	ISO 527-1/2	%	-	-
Nominal strain at yield	23°C, 50 mm/Min	ISO 527-1/2	%	-	-
Tensile stress at break	23°C, 5 mm/Min	ISO 527-1/2	MPa	110	80
Tensile strain at break	23°C, 5 mm/Min	ISO 527-1/2	%	2.7	3.8
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/m <sup>2</sup> kJ/m <sup>2</sup>	45 -	60
Charpy Notched Impact Strength	23°C -30°C	ISO 179/1eA ISO 179/1eA	kJ/m <sup>2</sup> kJ/m <sup>2</sup>	6 -	8
Izod Notched Impact Strength	23°C -30°C	ISO 180/1A ISO 180/1A	kJ/m <sup>2</sup> kJ/m <sup>2</sup>	- -	-
Ball indentation hardness	358 N	ISO 2039-1	MPa	-	-
<b>Thermal Properties</b>					
Melting temperature	10 K/min	ISO 3146	°C	262	
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	260 245 -	
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	240 130	
Flammability		UL94 UL94 UL94 UL94	Wall thickness mm Rating Wall thickness mm Rating	0.4 - 0.75 V-0 1.5 - 3.0 V-0, 5VA	
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 GWF1		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	0.4 960 3.0 960	
<b>Electrical Properties</b>					
Relative Permittivity	1 MHz	IEC-62631-2-1	-	3.5	4.6
Dissipation Factor	1 MHz	IEC-62631-2-1	E-4	170	1000
Spec. Volume Resistivity	-	IEC-62631-3-1	Ohm*cm	1.0E14	1.0E11



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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	-	1.0E12
Dielectric Strength	-	IEC-60243-1	kV/mm	45	35
Comparative Tracking Index (CTI)	-	IEC-60112	V	600	-

## Other Data

Water absorption	23°C, Saturation	ISO 62	%	6	
Moisture absorption	23°C, 50% r.h.	ISO 62	%	2.2	
Density	23°C	ISO 1183	g/cm <sup>3</sup>	1.38	
Melt Volume Rate (MVR)	Value Temperature Test Load	ISO 1133 ISO 1133 ISO 1133	cm <sup>3</sup> /10min °C kg	- - -	
Viscosity number	0,5% in 96% H2SO4	ISO 307	cm <sup>3</sup> /g	-	

## Processing injection molding

Melt temperature			°C	280 - 300	
Mold temperature			°C	80 - 100	
Guide Value Moisture			%	< 0.05	
Drying temperature			°C	80	
Guide Value Drying time			h	4 - 6	

Issue date 27.01.2021

### Legend

- = not tested  
NB = No break

Based on our current state of knowledge, this data represents reference values and, unless otherwise stated, stands for uncoloured material. Therefore, it does not constitute a warranty of certain properties, more particularly it is no material specification. It is the responsibility of the processors to check the suitability of the material for a particular application as well as compliance with statutory regulations and intellectual property rights. The data stated above may be modified at any time without prior notice. The information does not imply any contractual obligation on our part, any liability is expressly excluded.