

Ultramid® B3WG7

Polyamide 6

BASF Corporation

Message:

Glass fibre reinforced and heat ageing resistance injection moulding grade, used e.g. for automobile manifolds and pedals.

General Information				
UL YellowCard	E36632-531662	E41871-233704		
Filler / Reinforcement	Glass fiber reinforced material, 35% filler by weight			
Features	Good heat aging resistance			
	Oil resistance			
Uses	Application in Automobile Field			
Agency Ratings	EC 1907/2006 (REACH)			
RoHS Compliance	RoHS compliance			
Forms	Particle			
Processing Method	Injection molding			
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)			
	Secant Modulus vs. Strain (ISO 11403-1)			
	Shear Modulus vs. Temperature (ISO 11403-1)			
	Viscosity vs. Shear Rate (ISO 11403-2)			

Physical	Dry	Conditioned	Unit	Test Method
Density	1.41	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	45.0	--	cm ³ /10min	ISO 1133
Molding Shrinkage				ISO 294-4
Vertical flow direction	0.75	--	%	ISO 294-4
Flow direction	0.25	--	%	ISO 294-4
Water Absorption				ISO 62
Saturated, 23°C	5.9 - 6.5	--	%	ISO 62
Equilibrium, 23°C, 50% RH	1.8 - 2.2	--	%	ISO 62
Viscosity Number (96% H ₂ SO ₄)	140	--	cm ³ /g	ISO 307
Mold Shrinkage - constrained ¹	0.35	--	%	
Temperature index-at 50% loss of tensile strength				IEC 60216
-- ²	145	--	°C	IEC 60216
-- ³	175	--	°C	IEC 60216

Maximum operating temperature-short cycle operation	200	--	°C	
Automotive Materials (> 1.00 mm)	Pass	--		FMVSS 302
Screw Speed			mm/sec	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	11000	7200	MPa	ISO 527-2
Tensile Stress (Break)	195	130	MPa	ISO 527-2
Tensile Strain (Break)	3.5	7.0	%	ISO 527-2
Tensile Creep Modulus ⁴ (1000 hr)	--	3300	MPa	ISO 899-1
Flexural Modulus	10000	6300	MPa	ISO 178
Flexural Stress	280	200	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	13	--	kJ/m ²	ISO 179/1eA
23°C	18	33	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	90	--	kJ/m ²	ISO 179/1eU
23°C	100	110	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	19	27	kJ/m ²	ISO 180/A
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	220	--	°C	ISO 75-2/B
1.8 MPa, not annealed	215	--	°C	ISO 75-2/A
Melting Temperature	220	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow: 23 to 80°C	1.5E-5 - 2.0E-5	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 80°C	6.0E-5 - 7.0E-5	--	cm/cm/°C	ISO 11359-2
Specific Heat	1400	--	J/kg/°C	
Thermal Conductivity	0.36	--	W/m/K	DIN 52612
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+10	--	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Relative Permittivity (1 MHz)	3.90	6.20		IEC 60250
Dissipation Factor (1 MHz)	0.021	0.19		IEC 60250
Comparative Tracking Index (Solution A)	450	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method

Flame Rating (1.60 mm)	HB	--	UL 94
Injection	Dry	Unit	
Drying Temperature	80.0		°C
Drying Time	4.0		hr
Suggested Max Moisture	0.15		%
Hopper Temperature	80.0		°C
Rear Temperature	260		°C
Middle Temperature	270		°C
Front Temperature	280		°C
Nozzle Temperature	280		°C
Processing (Melt) Temp	270 - 290		°C
Mold Temperature	80.0 - 90.0		°C
Injection instructions			
Residence Time: <10 min.			
NOTE			

- | | |
|----|---|
| 1. | Test box with central gating, dimensions of base (107*47*1,5) mm, processing condition: TM = 280°C, TW = 80°C |
| 2. | 20000 h |
| 3. | 5000 h |
| 4. | strain <= 0.5%, 23°C |

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