

Ultramid® B3S

Polyamide 6

BASF Corporation

Message:

An easy flowing, finely crystalline injection moulding grade for very fast processing. Parts produced include thin-walled technical parts (eg housing, fittings, grips, small parts and fixing clamps).

General Information				
UL YellowCard		E36632-531654	E41871-233696	E333174-100976888
Features	Crystallization			
	Fast molding cycle			
	Good liquidity			
	Oil resistance			
Uses	Thin wall parts			
	Accessories			
	Shell			
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS compliance		
Forms		Particle		
Processing Method		Injection molding		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.13	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	160	--	cm ³ /10min	ISO 1133
Molding Shrinkage				ISO 294-4
Vertical flow direction	1.0	--	%	ISO 294-4
Flow direction	0.87	--	%	ISO 294-4
Water Absorption				ISO 62
Saturated, 23°C	9.0 - 10	--	%	ISO 62
Equilibrium, 23°C, 50% RH	2.6 - 3.4	--	%	ISO 62
Viscosity Number (96% H ₂ SO ₄)	145	--	cm ³ /g	ISO 307
Mold Shrinkage - constrained ¹	0.55	--	%	
Temperature index-at 50% loss of tensile strength				IEC 60216
-- ²	97	--	°C	IEC 60216
-- ³	87	--	°C	IEC 60216

Maximum operating temperature-short cycle operation	180	--	°C	
Screw Speed			mm/sec	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	3500	1200	MPa	ISO 527-2
Tensile Stress (Yield)	90.0	45.0	MPa	ISO 527-2/50
Tensile Strain (Yield)	4.0	20	%	ISO 527-2/50
Nominal Tensile Strain at Break	10	> 50	%	ISO 527-2/50
Tensile Creep Modulus ⁴ (1000 hr)	--	1100	MPa	ISO 899-1
Flexural Modulus	3000	--	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	3.0	--	kJ/m ²	ISO 179/1eA
23°C	4.0	50	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	200	--	kJ/m ²	ISO 179/1eU
23°C	250 kJ/m ²	No Break		ISO 179/1eU
Notched Izod Impact				ISO 180/A
-30°C	5.0	--	kJ/m ²	ISO 180/A
23°C	5.0 kJ/m ²	No Break		ISO 180/A
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	180	--	°C	ISO 75-2/B
1.8 MPa, not annealed	65.0	--	°C	ISO 75-2/A
Melting Temperature	220	--	°C	ISO 11357-3
CLTE - Flow (23 to 80°C)	7.0E-5 - 1.0E-4	--	cm/cm/°C	ISO 11359-2
Specific Heat	1700	--	J/kg/°C	
Thermal Conductivity	0.33	--	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)	3.30	7.00		IEC 60250
Dissipation Factor (1 MHz)	0.030	0.30		IEC 60250
Comparative Tracking Index (Solution A)	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating (1.60 mm)	V-2	--		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	240	°C
Middle Temperature	250	°C
Front Temperature	260	°C
Nozzle Temperature	260	°C
Processing (Melt) Temp	250 - 270	°C
Mold Temperature	40.0 - 60.0	°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 = 260°C, TW = 60°C
2. 5000 h
3. 20000 h
4. strain <= 0.5%, 23°C

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

