

Ultramid® B3S R03

PA6

BASF

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).

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	190 / *	cm ³ /10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.9 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	3500 / 1200	MPa	ISO 527
Yield stress	90 / 45	MPa	ISO 527
Yield strain	4 / 20	%	ISO 527
Nominal strain at break	10 / >50	%	ISO 527
Tensile Creep Modulus, 1h	* / 1300	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	* / 1100	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	250 / no break	kJ/m ²	ISO 179/1eU
Impact Strength (Charpy), -30°C	200 / -	kJ/m ²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	4 / 50	kJ/m ²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	3 / -	kJ/m ²	ISO 179/1eA
Flexural Modulus (23°C)	3000 / -	MPa	ISO 178

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220 / *	°C	ISO 11357-1/-3
Glass Transition Temperature (10°C/min)	60 / *	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	65 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	180 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	102 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-2 / *	class	UL 94
Thickness tested	1.6 / *	mm	-
UL recognition	yes / *	-	-
Burning Behav. at thickness h	V-2 / *	class	UL 94
Thickness tested	0.8 / *	mm	-
UL recognition	yes / *	-	-

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	4.1 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.3 / 7	-	IEC 62631-2-1
Dissipation Factor, 100Hz	100 / -	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	300 / 3000	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E9	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E12	Ohm	IEC 62631-3-2
Electric Strength	40 / 29	kV/mm	IEC 60243-1
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	9.5 / *	%	Sim. to ISO 62
Humidity absorption	3 / *	%	Sim. to ISO 62
Density	1130 / -	kg/m ³	ISO 1183
Bulk density	700	kg/m ³	-

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	145 / *	cm ³ /g	ISO 307, 1157, 1628

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Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Ejection temperature	145	°C	-

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	260	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.15	%	-
Melt temperature	250 - 270	°C	-
Mold temperature	40 - 60	°C	-

Characteristics

Processing

Injection Molding

Features

Low Odor

Delivery form

Pellets

Applications

Encapsulation

Additives

Lubricants, Release agent

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

Pre/Post-processing, Pre-drying, Temperature: 80 °C

Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING

injection molding, Melt temperature, range: 250 - 270 °C

injection molding, Melt temperature, recommended: 260 °C

injection molding, Mold temperature, range: 40 - 60 °C

injection molding, Mold temperature, recommended: 60 °C

injection molding, Dwell time, thermoplastics: 10 min