



Ultramid® B3U Q721

BASF Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

Ultramid B3U Q721 is an injection molding grade, flame-retardant, free from halogen and phosphorus, and UL94 V0 approved. Technical molded parts are used for electrical engineering.

General

Material Status	• Commercial: Active	
Availability	• Asia Pacific	• North America
Features	• Flame Retardant	• Low (to None) Phosphorus Content
	• Halogen Free	• Oil Resistant
Uses	• Engineering Parts	
Agency Ratings	• EC 1907/2006 (REACH)	
RoHS Compliance	• RoHS Compliant	
Forms	• Pellets	
Processing Method	• Injection Molding	

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density / Specific Gravity	1.17	--		ASTM D792
Density	1.17	--	g/cm ³	ISO 1183
Molding Shrinkage - Flow (0.125 in)	8.0E-3	--	in/in	
Water Absorption (Saturation)	0.10	--	%	ASTM D570
Water Absorption				ISO 62
Saturation, 73°F	0.10	--	%	
Water Absorption				ASTM D570
Equilibrium, 50% RH	2.5	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.5	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	537000	160000	psi	ISO 527-2
Tensile Strength (Yield, 73°F)	12000	--	psi	ASTM D638
Tensile Stress (Yield, 73°F)	11600	6530	psi	ISO 527-2
Tensile Stress (Break, 73°F)	10700	--	psi	ISO 527-2
Tensile Elongation (Yield, 73°F)	5.0	--	%	ASTM D638
Tensile Strain (Yield, 73°F)	4.0	15	%	ISO 527-2
Tensile Elongation (Break, 73°F)	50	--	%	ASTM D638
Flexural Modulus (73°F)	435000	--	psi	ASTM D790
Flexural Modulus (73°F)	435000	--	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-22°F	1.4	--	ft·lb/in ²	
73°F	1.4	--	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
73°F	No Break	No Break		

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Impact	Dry	Conditioned	Unit	Test Method
Notched Izod Impact				ASTM D256
-40°F	0.60	--	ft-lb/in	
73°F	0.81	--	ft-lb/in	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				ASTM D648
66 psi, Unannealed	435	--	°F	
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	374	--	°F	
Deflection Temperature Under Load				ASTM D648
264 psi, Unannealed	196	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	149	--	°F	
Peak Melting Temperature	428	--	°F	ASTM D3418
Melting Temperature (DSC)	428	--	°F	ISO 3146
CLTE - Flow	2.2E-5	--	in/in/°F	ASTM E831
RTI Elec				UL 746
0.030 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
RTI Imp				UL 746
0.030 in	167	--	°F	
0.06 in	167	--	°F	
0.12 in	176	--	°F	
RTI Str				UL 746
0.030 in	203	--	°F	
0.06 in	203	--	°F	
0.12 in	203	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0591 in)	1.0E+15	1.0E+12	ohms·cm	ASTM D257
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Dielectric Constant (1 MHz)	3.40	6.00		IEC 60250
Dissipation Factor (1 MHz)	0.015	0.25		IEC 60250
Comparative Tracking Index	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.030 in	V-0	--		
0.06 in	V-0	--		
0.12 in	V-0	--		

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.15	%
Processing (Melt) Temp	464 to 545	°F
Mold Temperature	149 to 176	°F
Injection Pressure	508 to 1810	psi
Injection Rate	Fast	

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Notes

¹ Typical properties: these are not to be construed as specifications.