Ultramid® C3U

Polyamide 66/6 Copolymer

BASF Corporation

Message:

Ultramid C3U is an injection molding, general purpose PA6/66 grade with improved flame retardance. The product is UL recognized as 94V0 at 0.4 mm minimum thickness.
Applications
It is used for impact resistant electrical insulating parts such as contact bases and plug connector strips.

General Information			
UL YellowCard	E36632-531680	E41871-233722	E333174-100976889
Features	E333174-101180750 Flame Retardant General Purpose Good Impact Resistance		
Uses	Electrical Parts Electronic Insulation General Purpose		
Agency Ratings	EC 1907/2006 (REACH)		
RoHS Compliance	RoHS Compliant		
Forms	Pellets		
Processing Method	Injection Molding		
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1) Isochronous Stress vs. Strain (ISO 11403-1) 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
Specific Gravity	1.16	--	g/cm³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	140	--	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.18 mm)	0.80	--	%	
Water Absorption				
Saturation	8.5	--	%	ASTM D570
Saturation, 23°C	8.5	--	%	ISO 62
Equilibrium, 50% RH	2.9	--	%	ASTM D570

Equilibrium, 23°C, 50% RH	2.9	--	%	ISO 62
Hardness	**Dry**	**Conditioned**	**Unit**	**Test Method**
Ball Indentation Hardness	100	--	MPa	ISO 2039-1
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (23°C)	3500	1500	MPa	ISO 527-2
Tensile Strength				
Yield, 23°C	83.0	--	MPa	ASTM D638
Yield, 23°C	75.0	45.0	MPa	ISO 527-2
Tensile Elongation				
Yield, 23°C	5.0	--	%	ASTM D638
Yield, 23°C	4.0	18	%	ISO 527-2
Break, 23°C	50	--	%	ASTM D638
Nominal Tensile Strain at Break (23°C)	6.0	> 50	%	ISO 527-2
Flexural Modulus (23°C)	3000	--	MPa	ASTM D790, ISO 178
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179
-30°C	4.0	--	kJ/m^2	
23°C	9.0	35	kJ/m^2	
Charpy Unnotched Impact Strength (23°C)	80 kJ/m^2	No Break		ISO 179
Notched Izod Impact				
-40°C	32	--	J/m	ASTM D256
23°C	43	--	J/m	ASTM D256
23°C	4.5	--	kJ/m^2	ISO 180
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load				
0.45 MPa, Unannealed	224	--	°C	ASTM D648
1.8 MPa, Unannealed	91.0	--	°C	ASTM D648
1.8 MPa, Unannealed	70.0	--	°C	ISO 75-2/A
Peak Melting Temperature	243	--	°C	ASTM D3418, ISO 3146
CLTE				
Flow	4.0E-5	--	cm/cm/°C	ASTM E831
Flow	8.0E-5	--	cm/cm/°C	
Transverse	9.0E-5	--	cm/cm/°C	
RTI Elec				UL 746
0.380 mm	110	--	°C	
0.750 mm	120	--	°C	
1.50 mm	120	--	°C	
3.00 mm	120	--	°C	
RTI Imp				UL 746

0.380 mm	65.0	--	°C	
0.750 mm	105	--	°C	
1.50 mm	105	--	°C	
3.00 mm	105	--	°C	
RTI Str				UL 746
0.380 mm	65.0	--	°C	
0.750 mm	115	--	°C	
1.50 mm	120	--	°C	
3.00 mm	120	--	°C	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity				
1.50 mm	1.0E+13	1.0E+9	ohms·cm	ASTM D257
--	1.0E+13	1.0E+9	ohms·cm	IEC 60093
Electric Strength	32	28	kV/mm	IEC 60243-1
Dielectric Constant (1 MHz)	3.60	6.00		IEC 60250
Dissipation Factor (1 MHz)	0.020	0.30		IEC 60250
Comparative Tracking Index	600	600	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.380 mm	V-0	--		
0.750 mm	V-0	--		
1.50 mm	V-0	--		
3.00 mm	V-0	--		
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	2.0 to 4.0		hr	
Suggested Max Moisture	0.15		%	
Processing (Melt) Temp	240 to 285		°C	
Mold Temperature	65.0 to 80.0		°C	
Injection Pressure	3.50 to 12.5		MPa	
Injection Rate	Fast			

Recommended distributors for this material

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