

Ultramid® C3U

Polyamide 66/6



Product Description

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.

PHYSICAL	ISO Test Method	Property Value	
Density, g/cm ³	1183	1.16	
Moisture, %	62		
(50% RH)		2.9	
(Saturation)		8.5	
RHEOLOGICAL	ISO Test Method	Dry	Conditioned
Melt Volume Rate (275 C/5 Kg), cc/10min.	1133	140	-
MECHANICAL	ISO Test Method	Dry	Conditioned
Tensile Modulus, MPa	527		
23C		3,500	1,500
Tensile stress at yield, MPa	527		
23C		75	45
Tensile stress at break, MPa	527		
Tensile strain at yield, %	527		
23C		4	18
Nominal strain at break, %	527		
-40C		4.4	5.7
23C		6	>50
Flexural Modulus, MPa	178		
23C		3,000	-
Ball Indentation, MPa	2039-1	100	-
IMPACT	ISO Test Method	Dry	Conditioned
Izod Notched Impact, kJ/m ²	180		
23C		4.5	-
Charpy Notched, kJ/m ²	179		
-30C		4	-
23C		9	35
Charpy Unnotched, kJ/m ²	179		
23C		80	N
THERMAL	ISO Test Method	Dry	Conditioned
Melting Point, C	3146	243	-
HDT A, C	75	70	-
HDT B, C	75	210	-
Coef. of Linear Thermal Expansion, Parallel, mm/mm C		0.8 X10 ⁻⁴	-

Coef. of Linear Thermal Expansion, Normal,
mm/mm C

0.9 X10-4

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ELECTRICAL	ISO Test Method	Dry	Conditioned
Comparative Tracking Index	IEC 60112	600	600
Volume Resistivity (Ohm-m)	IEC 60093	1E13	1E9
Dielectric Constant (1 MHz)	IEC 60250	3.6	6
Dissipation Factor (1 MHz), E-4	IEC 60250	200	3,000
Dielectric Strength, KV/mm	IEC 60243-1	32	28

UL RATINGS	UL Test Method	Property Value
Flammability Rating, 0.38mm	UL94	V-0
Relative Temperature Index, 0.38mm	UL746B	
Mechanical w/o Impact, C		65
Mechanical w/ Impact, C		65
Electrical, C		110
Flammability Rating, 0.75mm	UL94	V-0
Relative Temperature Index, 0.75mm	UL746B	
Mechanical w/o Impact, C		115
Mechanical w/ Impact, C		105
Electrical, C		120
Flammability Rating, 1.5mm	UL94	V-0
Relative Temperature Index, 1.5mm	UL746B	
Mechanical w/o Impact, C		120
Mechanical w/ Impact, C		105
Electrical, C		120
Flammability Rating, 3.0mm	UL94	V-0
Relative Temperature Index, 3.0mm	UL746B	
Mechanical w/o Impact, C		120
Mechanical w/ Impact, C		105
Electrical, C		120

Processing Guidelines

Material Handling

Max. Water content: 0.15%

Product is supplied in sealed containers and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80C (176F) is recommended. Drying time is dependent on moisture level, however 2-4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 250-270C (482-518F)

Mold Temperature 65-80C (149-176F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

A mold temperature of 65-80C (149-176F) is recommended, however temperatures of as low as 10C (50F) can be used where applicable.

Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing.

Note

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