

## Ultraform® N 2320 003 UNC Q600

### Polyoxymethylene (POM)

Ultraform N 2320 003 UNC Q600 is a rapidly freezing general-purpose injection-molding POM grade. It contains a mold release agent.

### Applications

Typical applications include spring elements, clips, gas filler caps, gear wheels, small motor parts, curtain hooks and release buttons for safety belts.

PHYSICAL	ISO Test Method	Property Value
Density, g/cm <sup>3</sup>	1183	1.40
Mold Shrinkage, parallel, %	294-4	2.1
Mold Shrinkage, normal, %	294-4	2.1
<b>Moisture, %</b>	62	
(50% RH)		0.2
(Saturation)		0.8
RHEOLOGICAL	ISO Test Method	Property Value
Melt Volume Rate (190 °C/2.16 Kg), cc/10min.	1133	7.5
MECHANICAL	ISO Test Method	Property Value
<b>Tensile Modulus, MPa</b>	527	
23 °C		2,700
<b>Tensile stress at yield, MPa</b>	527	
-40 °C		93
23 °C		65
80 °C		33
<b>Tensile strain at yield, %</b>	527	
23 °C		9.4

Nominal strain at break, %	527	
23°C		27
Tensile Creep Modulus (1000h), MPa	899	1,400
Tensile Creep Modulus (1h), MPa	899	1,800
IMPACT	ISO Test Method	Property Value
Charpy Notched, kJ/m <sup>2</sup>	179	
-30°C		5.5
23°C		6
Charpy Unnotched, kJ/m <sup>2</sup>	179	
-30°C		190
23°C		210
THERMAL	ISO Test Method	Property Value
Melting Point, °C	3146	167
HDT A, ° C	75	100
HDT B, ° C	75	156
Coef. of Linear Thermal Expansion, Parallel, mm/mm °C		1.1 X10-4
ELECTRICAL	ISO Test Method	Property Value
Comparative Tracking Index	IEC 60112	600
Volume Resistivity (Ohm-m)	IEC 60093	1E13
Surface Resistivity (Ohm)	IEC 60093	1E13
Dielectric Constant (100 Hz)	IEC 60250	3.8
Dielectric Constant (1 MHz)	IEC 60250	3.8
Dissipation Factor (100 Hz), E-4	IEC 60250	10
Dissipation Factor (1 MHz), E-4	IEC 60250	50
Dielectric Strength, KV/mm	IEC 60243-1	40
UL RATINGS	UL Test Method	Property Value

Flammability Rating, 1.5mm	UL94	HB
<b>Relative Temperature Index, 1.5mm</b>	UL746B	
Mechanical w/o Impact, °C		90
Mechanical w/ Impact, °C		90
Electrical, °C		105
Flammability Rating, 3.0mm	UL94	HB
<b>Relative Temperature Index, 3.0mm</b>	UL746B	
Mechanical w/o Impact, °C		105
Mechanical w/ Impact, °C		90
Electrical, °C		105

## Processing Guidelines

### Material Handling

Max. Water content: 0.15%

Product is supplied in polyethylene bags and drying prior to molding is not required. However, after relatively long storage or when handling material from previously opened containers, preliminary drying is recommended in order to remove any moisture which has been absorbed. If drying is required, a dehumidifying or desiccant dryer operating at 80 - 110°C (176 - 230°F) 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 190-230°C (375-446°F)

Mold Temperature 60-120°C (140-248°F)

Injection and Packing Pressure 35-70 bar (500-1000psi)

### Mold Temperatures

A mold temperature of 60-120°C (140-248°F) is recommended, however temperatures of as low as 45°C (113°F) can be used where applicable.

### Pressures

Injection speed must be optimized. A filling rate which is too high results in anisotropic mechanical properties, while a filling rate which is too low yields parts with poor surface finish. The tool must be vented to avoid burn marks and prevent mold deposits. 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.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas.

### Fill Rate

Injection speed must be optimized. A filling rate which is too high results in anisotropic mechanical properties, while a filling rate which is too low yields parts with poor surface finish. The tool must be vented to avoid burn marks and prevent mold deposits.

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## Note

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#### **General Information**

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#### **Technical Assistance**

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#### **Web address**

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