

# Ultraform® H 4320 UNC Q600

## Polyoxymethylene



### Product Description

Ultraform H 4320 UNC Q600 is an extrusion POM high molecular weight grade. This grade enables high extrusion rates with thick-walled product. It also exhibits high thermal stability and a low tendency to discolor.

### Applications

Typical applications include pipe and semi-finished parts for gear wheels, bearings and other mechanical elements.

PHYSICAL	ISO Test Method	Property Value
Density, g/cm	1183	1.39
Mold Shrinkage, parallel, %	294-4	2.2
Mold Shrinkage, normal, %	294-4	2.1
Moisture, %	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	2.2
MECHANICAL	ISO Test Method	Property Value
Tensile Modulus, MPa	527	
23C		2,600
Tensile stress at yield, MPa	527	
-40C		93
23C		63
80C		32
Tensile strain at yield, %	527	
23C		10
Nominal strain at break, %	527	
23C		31
Flexural Modulus, MPa	178	
23C		2,700
Tensile Creep Modulus (1000h), MPa	899	1,300
IMPACT	ISO Test Method	Property Value
Izod Notched Impact, kJ/m <sup>2</sup>	180	
23C		5
-40C		4
Charpy Notched, kJ/m <sup>2</sup>	179	
23C		6
-30C		5.5
Charpy Unnotched, kJ/m <sup>2</sup>	179	
23C		250
-30C		180
THERMAL	ISO Test Method	Property Value



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Melting Point, C	3146	166
HDT A, C	75	95
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	IEC 60093	1E13
Surface Resistivity	IEC 60093	1E13
Dielectric Constant (100 Hz)	IEC 60250	3.8
Dielectric Constant (1 MHz)	IEC 60250	3.8
Dissipation Factor (100 Hz)	IEC 60250	10
Dissipation Factor (1 MHz)	IEC 60250	50
Dielectric Strength, KV/mm	IEC 60243-1	40

## 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 degC (176 - 230 degF) is recommended. Drying time is dependent on moisture level, but 2-4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

### Typical Profile

Melt Temperature 175-200 degC (347-392 degF)

Typical Barrel Profile (degC):

Rear 170 degC (338 degF)  
Middle 180 degC (356 degF)  
Front 200 degC (392 degF)

Adaptor 175 degC (347 degF)  
Die 175 degC (347 degF)

### Screw Parameters

Metering Section	40%
Transition Section	3 to 5 flights
Feed Section	balance of screw length
Compression Ratio	3:1
L/D Ratio	20:1 to 25:1

### Tooling & Sizing

Die to Finished Tube dia. 2.0-4.0:1

Selection of pin and die size will be dependent on the material viscosity. In general, the ratio of die size to finished tube diameter is about 2.0-4.0:1. The mandrel (pin) size is determined the same way in relation to the inner tube diameter.

