

Quadrant EPP CESTIDUR® PE-UHMW

Ultra High Molecular Weight Polyethylene

Quadrant Engineering Plastic Products

Message:

Quadrant EPP CESTIDUR® PE-UHMW is an Ultra High Molecular Weight Polyethylene product. It is available in Europe. Typical application: Engineering/Industrial Parts.

Characteristics include:

- Flame Rated
- Wear Resistant
- Good Toughness
- High Molecular Weight

General Information			
Features	Good Abrasion Resistance		
	Good Toughness		
	Good Wear Resistance		
	Ultra High Molecular Weight		
Uses	Bearings		
	General Purpose		
Appearance	Blue		
	Grey		
Forms	Disc		
	Rod		
	Sheet		
Physical	Nominal Value	Unit	Test Method
Density	0.930	g/cm ³	ISO 1183
Water Absorption (Saturation, 23°C, 1.00 mm)	0.010	%	ISO 62
Molecular Weight	6000000	g/mol	
Service Temperature - Minimum	-200	°C	
Relative Weight Loss			Internal Method
-- 1	90.0		
-- 2	90.0		
Hardness	Nominal Value	Unit	Test Method
Shore Hardness			ISO 868
Shore D, 3 sec	62		
Shore D, 15 sec	60		
Ball Indentation Hardness	35.0	MPa	ISO 2039-1

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	710	MPa	ISO 527-2/1B/1
Tensile Stress (Yield)	19.0	MPa	ISO 527-2/1B/50
Tensile Strain (Yield)	15	%	ISO 527-2/1B/50
Nominal Tensile Strain at Break	> 50	%	ISO 527-2/1B/50
Compressive Stress			ISO 604/1
1% Strain	4.00	MPa	
2% Strain	7.50	MPa	
5% Strain	13.5	MPa	
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
-- ³	> 120	kJ/m ²	Internal Method
Partial Break	110	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength	No Break		ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	42.0	°C	ISO 75-2/A
Continuous Use Temperature			
-- ⁴	80.0	°C	
-- ⁵	120	°C	
Vicat Softening Temperature	80.0	°C	ISO 306/B
Melting Temperature	130 to 135	°C	ISO 11357-3
CLTE - Flow (23 to 100°C)	2.0E-4	cm/cm/°C	
Thermal Conductivity (23°C)	0.40	W/m/K	
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+13	ohms	IEC 60093
Volume Resistivity	> 1.0E+14	ohms·cm	IEC 60093
Electric Strength (1.00 mm, in Oil)	45	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	2.10		
1 MHz	3.00		
Dissipation Factor			IEC 60250
100 Hz	4.0E-4		
1 MHz	1.0E-3		
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.60 mm)	HB		UL 94
Oxygen Index	< 20	%	ISO 4589-2
NOTE			
1.	Wear test on plastics pin on rotating steel disk-tribo system		
2.	Wear test in sand/water slurry		
3.	Double 15° notch, DIS 11542-2		

4.	20000 hrs
5.	Short periods

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