

UTEC 6541

Ultra High Molecular Weight Polyethylene

Braskem

Message:

Description:
UTEC6541 is an Ultra High Molecular Weight Polyethylene with a molecular weight about 10 times higher than High Density Polyethylene (HDPE) resins. This extremely high molecular weight yields several unique properties to this polymer such as high abrasion resistance and impact strength and low coefficient of friction, what makes it a self-lubricating material.

Applications:
Applications which require highest wear resistance and the use of pigments and/or additives - technical parts RAM extruded and compression molded sheets, rods and profiles.

General Information	
Features	Food Contact Acceptable
	Good Abrasion Resistance
	Good Impact Resistance
	High Molecular Weight
	Low Friction
	Self Lubricating
Uses	Profiles
	Rods
	Sheet
Agency Ratings	FDA 21 CFR 177.1520
Forms	Pellets
Processing Method	Compression Molding
	Profile Extrusion
	Ram Extrusion
	Sheet Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.922	g/cm ³	ASTM D792
Apparent Density	0.45	g/cm ³	ASTM D1895
Water Absorption (Saturation)	0.010	%	ASTM D570
Intrinsic Viscosity	28	dl/g	ASTM D4020
Molecular Weight - Average	8000000	g/mol	Internal Method
Particle Size - Average	130	µm	ASTM D1921
Abrasion			Internal Method
-- 1	20		
-- 2	76		
Specific Heat Enthalpy	34.0	cal/g	ASTM D3418

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240, ISO 868
Shore D	64		
Shore D, 15 sec	59		
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638, ISO 527-2
Yield	> 17.0	MPa	
Break	> 30.0	MPa	
Tensile Elongation			
Break	> 300	%	ASTM D638
Break	> 350	%	ISO 527-2
Coefficient of Friction			ASTM D1894
vs. Itself - Dynamic	0.090		
vs. Itself - Static	0.10		
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength	> 100	kJ/m ²	ISO 11542-2
Notched Izod Impact	No Break		ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	79.0	°C	
1.8 MPa, Unannealed	48.0	°C	
Vicat Softening Temperature	128	°C	ISO 306/A, ASTM D1525 ³
Peak Melting Temperature	133	°C	ASTM D3418
CLTE - Flow (-30 to 100°C)	1.5E-4	cm/cm/°C	ASTM D696
Specific Heat (23°C)	2010	J/kg/°C	ASTM E1269
Thermal Conductivity (23°C)	0.40	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+12	ohms	ASTM D257
Volume Resistivity	> 1.0E+14	ohms·cm	ASTM D257
Dielectric Strength	90	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	2.30		ASTM D150
NOTE			
1.	Reference Stainless Steel SAE1020		
2.	Reference ISO 15527		
3.	Loading 1 (10 N)		

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