

# UTEC 3040

Ultra High Molecular Weight Polyethylene

Braskem

## Message:

Description:  
UTEC3040 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 high impact resistance - technical and porous parts, filters, compression molded sheets.

General Information			
Features	Ultra high molecular weight		
	Low friction coefficient		
	Impact resistance, good		
	Good wear resistance		
	Good wear resistance		
	Self-lubricating		
Uses	Engineering accessories		
	Filter		
	Sheet		
Agency Ratings	FDA 21 CFR 177.1520		
Processing Method	Compression molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.925	g/cm <sup>3</sup>	ASTM D792
Apparent Density	0.45	g/cm <sup>3</sup>	ASTM D1895
Water Absorption (24 hr)	0.010	%	ASTM D570
Intrinsic Viscosity	14	dl/g	ASTM D4020
Average Molecular Weight	3000000	g/mol	Internal method
Average Particle Size <sup>1</sup>	190	µm	ASTM D1921
Specific Melt Enthalpy	34.0	cal/g	ASTM D3418
Abrasion Index			Internal method
-- <sup>2</sup>	100		Internal method
-- <sup>3</sup>	25		Internal method
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240, ISO 868
Shaw D	64		ASTM D2240, ISO 868
Shaw D, 15 seconds	57		ASTM D2240, ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638, ISO 527-2

Yield	> 17.0	MPa	ASTM D638, ISO 527-2
Fracture	> 30.0	MPa	ASTM D638, ISO 527-2
Tensile Elongation			
Fracture	> 350	%	ASTM D638
Fracture	> 400	%	ISO 527-2
Coefficient of Friction			
Dynamic	0.090		ASTM D1894
Static	0.10		ASTM D1894
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength <sup>4</sup>	> 180	kJ/m <sup>2</sup>	ISO 11542-2
Notched Izod Impact	No Break		ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	79.0	°C	ASTM D648
1.8 MPa, not annealed	48.0	°C	ASTM D648
Vicat Softening Temperature	128	°C	ISO 306/A, ASTM D1525 <sup>5</sup>
Peak Melting Temperature	133	°C	ASTM D3418
CLTE - Flow (-30 to 100°C)	1.5E-4	cm/cm/°C	ASTM D696
Specific Heat	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.	Dp50		
2.	reference ISO 15527 = 100		
3.	reference Stainless Steel SAE1020 = 100		
4.	Determined with double-notched specimens (14° v-notch on both sides) in accordance with ISO 11542-2.		
5.	压力1 (10N)		

The information and data on this page are provided by manufacturers and document providers. SHANGHAI SUSHENG assumes no legal liability. It is strongly recommended to verify all technical data with material suppliers before final material selection. All rights belong to the original authors. If any infringement occurs, please contact us immediately.

Recommended distributors for this material

**Susheng Import & Export Trading Co.,Ltd.**

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: [sales@su-jiao.com](mailto:sales@su-jiao.com)

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

