

Ultra High Molecular Weight Polyethylene UTEC4040

Description:

UTEC4040 is an Ultra High Molecular Weight Polyethylene with a molecular weight greater than 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, impact strength, and because it is a self-lubricating material, a low coefficient of friction.

Applications:

Applications which require highest wear resistance, Technical and porous parts, filters, compression molded sheets

Physical Properties

Characteristics	Method	Units	Values
Intrinsic Viscosity	ASTM D4020	dL/g	18
Average Molecular Weight	Internal	g/mol	4.0×10^6
Density	ASTM D792	g/cm ³	0.925
Bulk Density	ASTM D1895	g/cm ³	0.45
Average Particle Size Dp50	LaserLightScattering	µm	225
Melt Temperature	ASTM D3418	°C	133

Mechanical Properties

Characteristics	Method	Units	Values
Tensile Strength at Yield	ASTM D638 ISO 527	MPa	≥ 17
Tensile Strength at Break	ASTM D638 ISO 527	MPa	> 30
Ultimate Elongation	ASTM D638 ISO 527	%	> 350
Charpy Impact Strength*	ISO 11542-2	KJ/m ²	> 130
Double Notch Charpy Impact Strength	ISO 11542-2	KJ/m ²	> 130
Shore D Hardness (15 sec)	ASTM D2240, ISO 868	-	> 58

* Determined with double-notched specimens (14° v-notch on both sides) in accordance with ISO 11542-2.

Electrical Properties

Characteristics	Method	Units	Values
Volume Resistivity	ASTM D257	ohm.cm	$> 10^{14}$
Surface Resistivity	ASTM D257	ohm	$> 10^{12}$

Final Remarks

1. It is the sole responsibility of the Client/Purchaser of this Product to verify the suitability of this Product and its use for the intended use and to ensure compliance with legal and regulatory requirements applicable to the final product.
2. The technical guidance eventually rendered to the Client/Purchaser of the Product by Braskem about the Product does not characterize a performance guarantee for the intended application, nor does it exempt the Client/Purchaser from the responsibilities described in item 1 above.
3. Any application information about the Product does not mean that Braskem knows or has validated the productive process of the Client/Purchaser or the adequacy of the Product for the intended application. All warranties of merchantability or fitness for a particular purpose, express or implied, are expressly excluded.
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