


Datasheet
 Revision 8 (Oct/19)

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

Feature	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

Feature	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

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

Final Remarks:

- The information presented in this Data Sheet reflects typical values obtained in our laboratories, but should not be considered as absolute or as warranted values. Only the properties and values set forth on the Certificate of Analysis should be considered as a guarantee of product properties.
- Values set forth in this report may be changed without notification.
- For some applications, Braskem has developed resins to meet specific requirements. Please consult the Braskem Technical Service Team for questions regarding the use of such resins.
- For information about safety, handling, individual protection, first aid, and waste disposal, please consult the SDS.
- Braskem does not recommend this grade for packaging, parts, or any other types of products that will be used in broad based medical applications or those where such products will have internal contact with the human body.
- The content of this Data Sheet supersedes and replaces all previous versions.