

## Ultra High Molecular Weight Polyethylene UTEC5542F

### Description:

UTEC5542F is an Ultra High Molecular Weight Polyethylene designed to achieve a unique particle size distribution. It is specifically intended for the battery separator markets, but is also useful for any application requiring either a low percentage of "large" particles or a higher percentage of "fine" particles.

### Applications:

Lead acid battery separators, Synthetic Paper, Porous plastics

### Physical Properties

Characteristics	Method	Units	Values
Intrinsic Viscosity	ASTM D4020	dL/g	26
Average Molecular Weight	Margolies	g/mol	$7.0 \times 10^6$
Density	ASTM D792	g/cm <sup>3</sup>	0.925
Bulk Density	ASTM D1895	g/cm <sup>3</sup>	0.45
Average Particle Size Dp50	Laser Light Scattering	µm	120
Particle Size Dp10	Laser Light Scattering	µm	< 100
Particle Size Dp90	Laser Light Scattering	µm	< 250
Particles > 250 µm	Laser Light Scattering	%	< 4.0
Particles > 300 µm	Laser Light Scattering	%	< 1.0
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	%	> 350

\* 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:

- 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.