



GUR® 5113

Celanese Corporation - Ultra High Molecular Weight Polyethylene

Tuesday, November 5, 2019

General Information

Product Description

Melt processable UHMW-PE pellet grade

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Forms	• Pellets		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	0.930	g/cm ³	ISO 1183
Apparent (Bulk) Density	0.50	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (190°C/21.6 kg)	< 0.10	g/10 min	ISO 1133
Viscosity Number (Reduced Viscosity)			ISO 1628
--	1700.0	ml/g	
-- ²	1900.0	ml/g	
Average Molecular Weight ³	3700000	g/mol	
Average Particle Size - d50 ⁴	Pellet		
Elongational Stress F - 150/10	17	psi	ISO 11542-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	116000	psi	ISO 527-2/1B
Tensile Stress (Yield)	3190	psi	ISO 527-2/1B
Tensile Stress (Break)	5370	psi	ISO 527-2/1B
Tensile Stress (50% Strain)	2760	psi	ISO 527-2/1B
Tensile Strain (Yield)	12	%	ISO 527-2/1B
Nominal Tensile Strain at Break	430	%	ISO 527-2/1B
Wear by Sandslurry Method ⁵	130		Internal Method
Impact	Nominal Value	Unit	Test Method
Charpy Double 14°V-Notch Strength (73°F)	90.4	ft·lb/in ²	ISO 11542-2
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 15 sec)	62		ISO 868
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	176	°F	ISO 306/B50
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+12	ohms	IEC 60093
Volume Resistivity	> 1.0E+14	ohms·cm	IEC 60093

Notes

¹ Typical properties: these are not to be construed as specifications.

² PE and PP

³ Margolies' Equation

⁴ Laser scattering

⁵ based on GUR 4120=100