



Rynite® 935 NC010

Celanese Corporation - THERMOPLASTIC POLYESTER RESIN

Thursday, December 21, 2023

General Information

Product Description

35% Glass/Mica Reinforced Polyethylene Terephthalate

General

Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass Fiber/Mineral, 35% Filler by Weight		
Additive	• Mold Release		
RoHS Compliance	• Contact Manufacturer		
Automotive Specifications	• FORD WSK-M4D779-A2	• GM GMP.PET.003	
Part Marking Code (ISO 11469)	• >PET-(MD+GF)35<		
Resin ID (ISO 1043)	• PET-(MD+GF)35		

ASTM & ISO Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	1.58 g/cm ³	1.58 g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.70 %	0.70 %	
Flow	0.30 %	0.30 %	
Water Absorption			ISO 62
Saturation, 73°F (23°C), 0.0787 in (2.00 mm)	0.83 %	0.83 %	
Equilibrium, 73°F (23°C), 0.0787 in (2.00 mm), 50% RH	0.13 %	0.13 %	
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Modulus	1.45E+6 psi	10000 MPa	ISO 527-1
Tensile Stress (Break)	12300 psi	85.0 MPa	ISO 527-2/5
Tensile Strain (Break)	2.0 %	2.0 %	ISO 527-2/5
Tensile Creep Modulus			ISO 899-1
1 hr	1.36E+6 psi	9350 MPa	
1000 hr	1.12E+6 psi	7690 MPa	
Flexural Modulus	1.32E+6 psi	9100 MPa	ISO 178
Compressive Stress	20300 psi	140 MPa	ISO 604
Shear Strength	7980 psi	55.0 MPa	ASTM D732
Poisson's Ratio	0.34	0.34	

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Impact	Typical Value (English)	Typical Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	1.9 ft·lb/in ²	4.0 kJ/m ²	
73°F (23°C)	2.9 ft·lb/in ²	6.0 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	9.5 ft·lb/in ²	20 kJ/m ²	
73°F (23°C)	12 ft·lb/in ²	25 kJ/m ²	
Hardness	Typical Value (English)	Typical Value (SI)	Test Method
Rockwell Hardness			ISO 2039-2
M-Scale	75	75	
R-Scale	115	115	
Thermal	Typical Value (English)	Typical Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	464 °F	240 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	392 °F	200 °C	ISO 75-2/A
Vicat Softening Temperature	392 °F	200 °C	ISO 306/B50
Melting Temperature ²	486 °F	252 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow	8.9E-6 in/in/°F	1.6E-5 cm/cm/°C	
Flow : -40 to 73°F (-40 to 23°C)	1.4E-5 in/in/°F	2.6E-5 cm/cm/°C	
Transverse	2.9E-5 in/in/°F	5.2E-5 cm/cm/°C	
Transverse : -40 to 73°F (-40 to 23°C)	2.9E-5 in/in/°F	5.3E-5 cm/cm/°C	
Thermal Conductivity ³	1.8 Btu·in/hr/ft ² /°F	0.26 W/m/K	ISO 22007-2
Effective Thermal Diffusivity - Flow	2.17E-10 in ² /s	2.17E-10 in ² /s	ISO 22007-4
Electrical	Typical Value (English)	Typical Value (SI)	Test Method
Surface Resistivity	1.0E+14 ohms	1.0E+14 ohms	IEC 62631-3-2
Volume Resistivity	1.0E+13 ohms·m	1.0E+13 ohms·m	IEC 62631-3-1
Electric Strength	990 V/mil	39 kV/mm	IEC 60243-1
Relative Permittivity			IEC 62631-2-1
100 Hz	4.50	4.50	
1 MHz	4.10	4.10	
Dissipation Factor			IEC 62631-2-1
100 Hz	0.030	0.030	
1 MHz	0.014	0.014	
Comparative Tracking Index	300 V	300 V	IEC 60112
Flammability	Typical Value (English)	Typical Value (SI)	Test Method
Burning Rate ⁴ (0.0394 in (1.00 mm))	< 3.1 in/min	< 80 mm/min	ISO 3795
Flame Rating			UL 94
0.030 in (0.75 mm)	HB	HB	IEC 60695-11-10,
0.06 in (1.5 mm)	HB	HB	-20
Glow Wire Ignition Temperature			IEC 60695-2-13
0.030 in (0.75 mm)	1470 °F	800 °C	
0.06 in (1.5 mm)	1470 °F	800 °C	
0.12 in (3.0 mm)	1560 °F	850 °C	
Oxygen Index	21 %	21 %	ISO 4589-2

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Flammability	Typical Value (English)	Typical Value (SI)	Test Method
FMVSS Flammability	B	B	FMVSS 302
Glow Wire Temperature - No Flame			IEC 60335-1
29.5 mil (750.0 µm)	1382 °F	750 °C	
39.4 mil (1.00 mm)	1382 °F	750 °C	
59.1 mil (1.50 mm)	1382 °F	750 °C	
0.12 in (3.00 mm)	1562 °F	850 °C	
Fill Analysis	Typical Value (English)	Typical Value (SI)	Test Method
Melt Density	1.32 g/cm ³	1.32 g/cm ³	
Ejection Temperature	338 °F	170 °C	
Specific Heat Capacity of Melt	0.428 Btu/lb/°F	1790 J/kg/°C	ISO 22007-4
Thermal Conductivity of Melt	2.2 Btu·in/hr/ft ² /°F	0.32 W/m/K	ISO 22007-2
Additional Information	Typical Value (English)	Typical Value (SI)	Test Method
Fogging - G-value (condensate)	0.10 mg	0.10 mg	ISO 6452

Processing Information

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	248 °F	120 °C
Drying Time - Desiccant Dryer	4.0 to 6.0 hr	4.0 to 6.0 hr
Suggested Max Moisture	< 0.020 %	< 0.020 %
Processing (Melt) Temp	536 to 572 °F	280 to 300 °C
Melt Temperature, Optimum	545 °F	285 °C
Mold Temperature	212 to 248 °F	100 to 120 °C
Mold Temperature, Optimum	230 °F	110 °C
Holding Pressure	> 11600 psi	> 80.0 MPa
Back Pressure	As low as possible	As low as possible
Drying Recommended	yes	yes
Hold Pressure Time	4.00 s/mm	4.00 s/mm
Screw Tangential Speed	< 472 in/min	< 12 m/min

Notes

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

² 10°C/min

³ Flow

⁴ FMVSS 302

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