

## Polyamides (PA, glass filled)

### SPECIFICATIONS

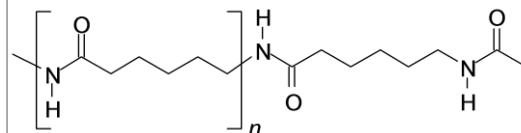
Property	Spec	Value
Density	ASTM D792	0.0488lbs/in <sup>3</sup>
Specific Gravity	ASTM D792	1.35g/cc
Water Absorption @24hrs. 73F @Saturation, 73F	ASTM D570	0.7% 5.4%

### PHYSICAL

Tensile Strength @ yield, 73F	ASTM D638	12,000psi
Tensile Modulus	ASTM D639	400,000psi
Elongation @ break, 73F	ASTM D638	10%
Flexural Strength, 73F	ASTM D790	18,500psi
Flexural Modulus, 73F	ASTM D790	550,000psi
Izod Impact Strength	ASTM D256	1.0 ft-lbs/in
Rockwell Hardness, 73F	M Scale	90

### THERMAL

Heat Deflection Temp @66psi @264psi	ASTM D648	490F 482F
Coefficient of linear Thermal Expansion	ASTM D696	1.2 x 10 <sup>-5</sup> in/in/°F
Max Serv. Temp Intermittent Long Term	UL746B UL746B	465F 230F
Melting Point	D2133	491F



### DESCRIPTION

ML04 is polyamide material with hardness of 90 Rockwell M, specially compounded with glass fillers. Polyamides (PA) have amide functional group linkages -CO-NH-. The amide group has strong affinity for hydrogen bonding with other amide groups and with water from the external environment. The two major commercial polyamide materials used in seal industries are PA 6 and PA 6,6. They differ by whether one or two raw material components are used in producing nylon. In many aspects, they are interchangeable in applications. Both polyamide thermoplastics are flexible and allowing for easy crystallization. This capability is even enhanced by the strong affinity for polar amide groups of adjacent chain sections. Less amide content in the polymer means less tendency for polyamides to bind water. PA's lubrication can be further improved by incorporating molybdenum disulfide (MoS<sub>2</sub>). The mechanical strength of PA can be increased by reinforcement with glass fiber. PA articles are normally molded by injection, extrusion or compression processes.