

Material Data Sheet

Nylon 645

Nylon 6/9

Nylon 645 is a nylon 6/9, or a variant of nylon 6 with a crystallinity optimization process. 645 is a 50% transparent white color. 645 will dye with acid based dyes, and it maintains the slippery surface feature of nylons.

645 is a preferred polymer when parts to be printed will be subject to high stresses and temperatures. It handles stress at elevated temperatures as high as 160°C with a high degree of chemical resistance.

As with all nylons, warp can be a problem, our N1 support helps to control it, often brim is also required, depending on the geometry of the part.

Mechanical Properties*

Type	Test Method	Imperial	Metric
Tensile Modulus	ISO 527	30,845 psi	212.6688Mpa
Tensile Stress	ISO 527	5,188 psi	35.77Mpa
Elongation at break	ISO 527	186%	186%

Thermal Properties

	Test Method	Imperial	Metric
Pyrolysis - Thermal degradation		644°F	340°C
UL Flammability	UL 94 HB	Yes	
UL Flammability - 1.5mm thickness	UL 94 V2	Yes	

Physical Characteristics & Features

Type	Imperial	Metric
Density		1.09 gr/cm ³
Shrink	0.0062%	0.0062%
CNC Finishing & hole tapping	Excellent	

*Test parts have been 3D printed according to XZ orientation, using 100% infill, 0.2mm layer thickness

The information supplied is supplied as informative: user should use it as material selection tool and/or comparison with available materials.

Printed part performance may differ from published value, depending on part orientation, printing parameters & environmental conditions.

User must validate suitability of the printed part and its lawful to be used as desired: no warranty can be made (express or implied) to any use of Plural materials.

We reserve the right to improve our polymer formulations and/or revise our technical data.