



## Nylon 66 Polyamide

<b>Description</b>	
A semi crystalline material with very high strength and stiffness. Material is low viscosity and therefore flows very easily.	
<b>Typical Applications</b>	
Automotive parts such as fans, grilles, door handles, kitchen appliances, castors, bearings	
<b>Types of grade available</b>	
Impact modified Glass fibre and bead filled Flame retardant Mineral filled High viscosity (extrusion) Heat stabilised	
<b>General Processing</b>	
Drying Time	4 to 6 hours
Drying Temperature	80C
Type of Drier	Hot Air
Purging	More viscous polymer such as HDPE or PP
Moisture Absorption	1.5%
Other Considerations	Mouldings will need conditioning to achieve full mechanical properties. The moisture needs to be absorbed either by boiling for 4 hrs in 60c water or leaving in humid environment for 6 - 8 weeks.
<b>Processing Injection Moulding</b>	
Barrel Settings	260C to 290C
Injection speed	Fast
Injection Pressure	Medium
Back Pressure	Low
Screw Speed	Low to Medium
Tool Temperature	80C
Melt Temperature	255C
Processing Stability	Maximum residence time is 5 minutes at 280C
Gate Considerations	Gate in area with largest wall section
Sprue & Runner Considerations	Sprues to be as short as possible with radiused corners. Runners to be full round with large gates

<b>Processing Extrusion</b>	
Barrel Settings	260C to 290C
Screw Speed	Polyolefin Screw with equal feed, transition and metering section, 25-30 L/D or Nylon screw
Screen Packs	Recommended
Haul-off / Cooling	Bath 5 -10c
Calibration	Sizing plates
<b>Mechanical Properties</b>	
Shrinkages	0.2% to 2.2%
Flexural Strength	105 MPA (based on unfilled PA66)
Tensile strength at Yield	75 MPa(based on unfilled PA66)
<b>Physical Properties</b>	
Density	1.13 to 1.51
Cold Bend	N/A
Cold Flex	N/A
Elongation at Break	30%
Flexural Modulus	1 3.4 GPa
General Impact Strength	Good to High
Material Finish	High Gloss
<b>Thermal Properties</b>	
Vicat Softening Temperature	245c
Heat Deflection Temperature	200c
<b>Flammability</b>	
Flammability Rating	Flame retardant grades available
<b>Weatherability</b>	
Suitability for outdoor use	Suitable for outdoor use when UV stabilised
<b>Fillers &amp; Additives</b>	Glass fibre, glass bead, impact modifiers, heat stabilisers, flame retardants, MoS 2
<b>Chemical Resistance</b>	
Resistant to	Esters, Ketones, aromatic hydrocarbons, most organic acids
Not resistant to	Formic acid, phenol, strong acids, oxidising agents
<b>Food Contact Status</b>	

<b>Colouring</b>	Masterbatches are regularly used and are often preferred to dry colourants, as their addition is relatively simple and clean. Surface dyeing is possible but, to achieve colour consistency and reproducibility, it is essential to critically control the percentage of dye concentration to the weight of nylon to be dyed.
<b>WEEE &amp; ROHS Compliance</b>	Yes
<b>Bonding</b>	PA66 surfaces can be bonded together using a two component epoxy or cyanoacrylate adhesive, to ensure a more effective bond is achieved, the surfaces should be roughened prior to the adhesive being applied
<b>Welding</b>	PA66 components can be successfully welded using the ultrasonic technique

*This information has been provided as a general guide and we suggest that you carry out your own specific tests to be sure that this material is suitable for your application.*