

## Duramid N6 HS

### Description:

Duramid N6 HS is a utility grade heat stabilised, low to medium viscosity, general-purpose nylon 6 injection moulding homopolymer.

### Properties:

Duramid N6 HS possesses the combination of strength, stiffness and toughness properties associated with nylon 6 as well as excellent chemical, thermal and abrasion resistance. The incorporation of the heat stabiliser system extends its retention of properties at elevated temperatures.

## Processing Guidelines

### Melt Temperature:

Duramid N6 HS exhibits a crystalline melting point of 215°C and a melt temperature range of 240°C-270°C is recommended for most applications.

### Typical Temperature Profile:

Zone	°C
Rear	220-245
Middle	225-260
Front	240-270
Nozzle	240-270

### Mould Temperature:

Mould temperatures of 82°C are generally recommended. However, surface temperatures of 10-95°C can be used where applicable.

### Pressures:

Injection and packing pressures are generally within the limits of 500-1800 psi. Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final dimensions and can be effectively used in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

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## Fill Rate:

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Injection speeds of one inch ram travel per second serves as a guide.

## Regrind:

Duramid N6 HS possesses excellent melt stability. Typical regrind levels are 25-30%. However, levels as high as 50% are not uncommon.

## Material Handling:

Duramid N6 HS is supplied in sealed containers and drying prior to moulding is generally not required. If drying becomes necessary a dehumidifying or desiccant drier operating at 85°C is recommended. Drying time is dependent on moisture level and resin should be dried to less than 0.2% moisture. Further information on safe handling procedures can be obtained from the Product Material Safety Data Sheet.

Typical Physical Properties	DAM	ASTM Test
Tensile Strength	78 MPa	D-638
Flexural Strength	108 MPa	D-790
Flexural Modulus	2500 MPa	D-790
Notched Izod Impact Strength	42 J/m	D-256

These values for natural colour resins only. Colourants or other additives may alter some or all of these properties. The data listed here fall within the normal range of product properties, but they should not be used to establish specification limits nor used alone as the basis of design.

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