

DuPont™ Zytel® High Glass Reinforced Engineering Thermoplastic

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Abstract :

The Advantage technology has been implemented in our **High Glass Reinforced range of DuPont™ Zytel®**.

The High Glass reinforced Zytel® contains superior flow properties without sacrificing the mechanical properties like elongation or impact. It offers significant advantages to the user, as demonstrated in the article below.



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The superior flow properties enable parts to fill more easily, at lower temperatures and pressures, resulting in:

- Shorter cycle times
- Use of smaller size machines
- Better surface aspect & gloss

When substituting a standard glass reinforced resin with its high flow equivalent, please note that:

- Shrinkage remains unchanged
- Mechanical properties remain similar

Products and properties

It is important for the designer to realize, that DuPont nylon resins have strength and stiffness properties considerably different from some of the older engineering materials, particularly most metals. In general the strength and stiffness properties of nylon resins are more sensitive to environmental changes of moisture and temperature.

However with adequate knowledge of the effects of the environment the designer is better able to get the best out of the potentials of DuPont nylon resins.

MINLON® is DuPont's registered trademark for its range of mineral and mineral/ glass reinforced nylon resins. These compositions are reinforced – not filled. The chemical bond between the nylon and the mineral reinforcement enhances the tensile properties and stiffness of the resins. Due to their excellent balance of properties, components of MINLON® (produced by injection moulding) find extensive use in many applications including: automotive, electrical, electronic, domestic appliances and construction.

ZYTEL® is DuPont's registered trademark for its comprehensive range of nylon resins. Since the invention of nylon by DuPont in the 1930s, it has become the most widely used of all engineering polymers. Due to their excellent balance of properties, nylon components (produced by injection moulding, extrusion or blow moulding) find extensive use in many applications including: automotive, electrical/electronic, domestic appliances, furniture and construction.

Please consult the Zytel® / Minlon® Product & Property Guide

Processing

Despite the fact that MINLON® and ZYTEL® nylon resins have been injection moulded for over 50 years, it is still as important as ever to optimise conditions in order to be able to benefit from the material properties available when using these resins. Basically, the process involves heating the solid moulding granules to melt them, then transferring this molten material to a mould and holding it under pressure until it crystallises.

Each type of nylon has its own specific processing characteristics which must be considered and understood before it can be successfully moulded to produce parts that achieve the expected quality level.

The moulding conditions considerably affect the part quality of characteristics such as weld line strength, surface appearance, and dimensional stability. The optimum processing conditions for any given grade are determined by combination of the nature of the polymers used as well as modifiers and additives which have their own melt properties.

Please consult the Zytel® / Minlon® Processing Guide

Designation	PA66	PA6	Description
Glass Reinforced			
Zytel® 70G43HSLA BK099	X		43% glass reinforced, heat stabilised, lubricated PA66 with improved flow characteristics
Zytel® 70G50HSLA BK039B	X		50% glass reinforced, heat stabilised, hydrolysis resistant PA66 with improved flow characteristics
Zytel® 73G50HSLA BK416		X	50% glass reinforced, heat stabilised and lubricated PA6 with improved flow characteristics



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New High Glass Reinforced Zytel® flows better. Parts fill much easier and at lower temperatures, therefore allowing the use of smaller moulding machine and/or decreased cycle

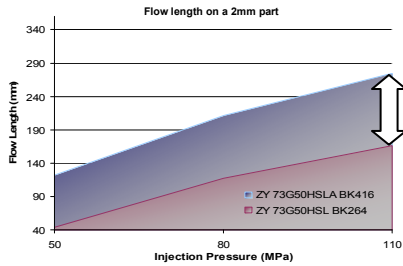
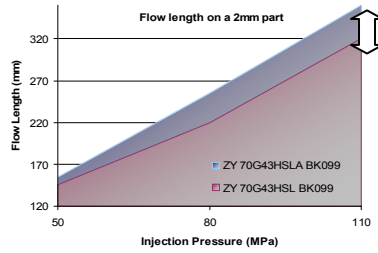
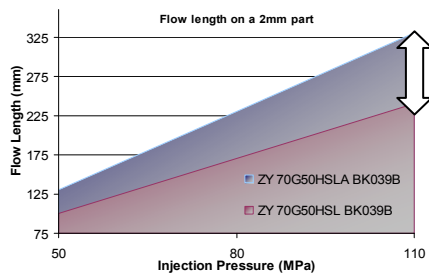


Fig.1 AUTO/Oil system application of a structural cover moulded in Zytel® 70G50HSLA BK039B featuring very high stiffness and excellent surface finish integrating a fast curing thermoset gasket in DuPont™ VAMAC®.

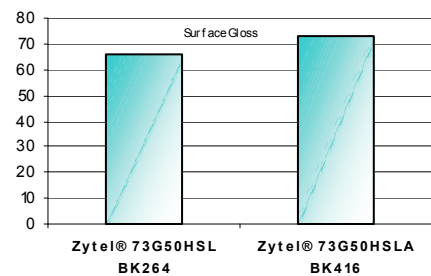
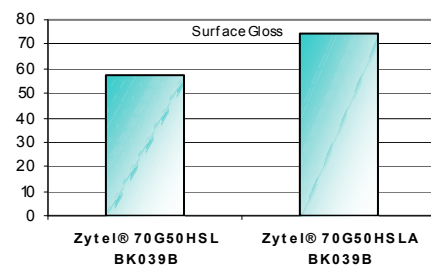
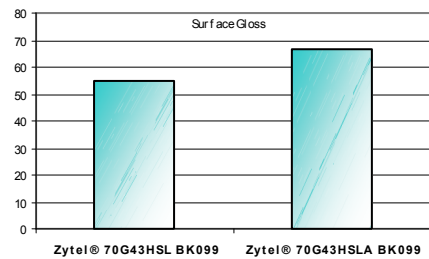
Realized in a 2 components moulding process in collaboration with Billion, Injection Moulding Machine Manufacturer, REP for Rubber Injection Unit and MASSACRIER for the Mould design & realization.



New High Glass Reinforced Zytel® shows higher gloss. Parts have a nicer surface appearance and shows better quality.



Fig. 2 Water box application in-house design for gloss measuring



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Let's talk
We have the right materials, technology
and technical resources to help you design
and manufacture superior parts and
systems. Please contact the nearest
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