### Special Control® Grades
- Manufacturing according to GMP principles
- Food contact statements (EU/USDA) **
- Testing against selected parts of USP Class VI
- Testing against relevant parts of ISO 10993
- Sterilisation data
- Global availability

### Premium Control® Grades
- Manufacturing according to GMP principles
- Extended batch to batch quality control
- Food contact statements (EU/USDA) **
- Testing against selected parts of USP Class VI
- Testing against relevant parts of ISO 10993
- Sterilisation data
- Global availability
- FDA drug master files available (DMF)

### Products

#### USA
- Hytrel® SC938 NC010, 30 Shore D hardness
- Hytrel® SC948 NC010, 40 Shore D hardness
- Hytrel® SC958 NC010, 55 Shore D hardness
- Hytrel® SC968 NC010, 63 Shore D hardness
- Hytrel® SC978 NC010, 72 Shore D hardness
- Hytrel® SC988 NC010, 82 Shore D hardness
- Delrin® SC101 NC10, medium flow, nucleated, POM homopolymer
- Delrin® SC205 NC10, medium flow, lubricated, POM homopolymer
- Delrin® SC306 NC10, high flow, POM homopolymer
- Delrin® SC410 NC10, high flow lubricated***, POM homopolymer
- Zytel® SC310 NC10, high flow PA66
- Zytel® SC315 NC10, high flow PA6/12
- Crastin® SC164 NC010, high flow PBT

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DuPont Performance Polymers
A broad range of advanced solutions for healthcare components
DuPont Performance Polymers delivers science-based, high quality thermoplastic to the healthcare industry. These thermoplastics are used in the manufacture of demanding components across many different segments.
DuPont draws on its long experience in materials research, application development, technology, safety and regulatory compliance to provide expert support to healthcare product manufacturers, backed by its global manufacturing and supply strength.

Depending on the specific application, DuPont can deliver an appropriate solution from its broad range of standard products, or from its portfolio of “Special Control” (SC) and “Premium Control” (PC) grades, which are differentiated by a greater degree of testing, manufacturing control and regulatory support.

THE KEY PROPERTIES OUR MATERIALS CAN OFFER YOUR PRODUCTS

**High Strength**
First and foremost, designers are looking for high strength, stiffness and toughness in materials. The right balance of these properties is the key to designing components successfully with the maximum reliability and safety. DuPont® Delrin® POM, having the most metal-like behaviour of any unreinforced plastic, is often the first choice for designers. DuPont also offers a wide range of reinforced engineering plastics for applications requiring even higher stiffness, strength and creep resistance.

**Low Friction**
The selection of appropriate materials in a tribological system (wherever two surfaces slide, roll or rub against each other) is vital in ensuring predictable performance and avoiding excessive friction, slip stick effects, squeaking or even total failure. Lubricants tend to be avoided by medical device manufacturers as they require added controls for potential contamination, quality and regulatory requirements.
DuPont Performance Polymers has long experience in product development and testing of low wear/no-friction applications across many industry segments.

**Flexibility**
For applications requiring maximum flexibility, DuPont™ Hytrel®, a plasticizer-free thermoplastic polyester elastomer (TPE) – is an innovative solution. Hytrel® is super-resilient, providing excellent flex fatigue resistance and spring-like properties, and can be used at a wide range of temperatures while still retaining its flexibility and mechanical properties. It enables the design of a variety of parts and products that combine the best features of both high-performance rubbers and flexible plastic materials.
Available in the range of shore D30 to D82, Hytrel® is also economical to process, using a variety of molding or extruding techniques.

**Chemical Inertness & Resistance**
One of the outstanding properties of semi-crystalline polymers versus amorphous plastics is their resistance to many chemicals, which provides a major benefit in today’s healthcare industry where a wide range of substances is used for analysis, cleaning and disinfection, or as a drug carrier or conserving agent.
Since factors such as temperature, chemical concentration, exposure time, part surface-to-weight ratio and the plastic component’s stress level can all affect performance, it is highly recommended that a realistic end-use test is run to determine the suitability of a polymer grade in a particular application.

**Barrier Properties**
The ability of a package to protect its content (whether in liquid, powder or gel form) against intrusion or loss of O2, H2O or any other relevant molecule, directly affects the product’s shelf life. A common way of packaging products to obtain the right barrier behaviour balance is to use a multi-layer structure. However this solution is not always an option for injection moulded products.
DuPont® Performance Polymers resins offer excellent barrier properties, demonstrating a unique combination of very low water vapour transmission and O2 permeation.
Customers have sought solutions which protect healthcare personnel from patients’ viruses and projections of bodily fluids (blood). They require materials that provide protection, but should not prevent the evaporation and evacuation of sweat moisture. Unlike microporous structures, polymeric monolithic membranes made in Hytrel® specially resins have no pores that can become clogged, and provide excellent water vapour transmission for increased comfort.

**Sterilisation Resistance**
Sterilisation is a vital day-to-day procedure in the healthcare sector, both for single-use and multiple use devices, so it is vital that materials used in medical components are not affected by this process.
The broad range of materials offered by DuPont Performance Polymers provides a suitable solution for nearly every sterilisation approach as noted in the table below. This allows manufacturers to select the best material for their specific application requirements.

<table>
<thead>
<tr>
<th>Sterilisation Process*</th>
<th>Autoclave</th>
<th>Gamma</th>
<th>Ethylene Oxide</th>
<th>Iodine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2yl™ PA68</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2yl™ PA12</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Bioplex® POM</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Hytrel® TPC-ET</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Crysta® PBT</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

* The sterilisation properties depend on the operating conditions applied. Follow your local DuPont representative for detailed information.