DESIGNED FOR PERFORMANCE.
DERIVED FROM NATURE.

Apparel made with DuPont™ Sorona®
renewably sourced fiber

DuPont™ Sorona®

*DuPont™ Sorona® is made, in part, with annually renewable plant based ingredients.*
DESIGNED FOR PERFORMANCE. DERIVED FROM NATURE.

DuPont® Sorona®
DuPont™ Sorona®
renewably sourced fiber

DuPont continues its legacy in fiber technology creating a breakthrough renewably sourced polymer for fiber and fabric – DuPont™ Sorona®.

Designed for performance
Sorona® offers what designers look for to meet consumer needs – in a variety of applications
- Softness
- Comfort Stretch with Excellent Recovery
- UV/Chlorine Resistance
- Easy Care –Wrinkle Release
- Versatile/Adaptable to meet fashion trends

Derived from nature
- Sorona® is made, in part, with bio-based ingredients instead of petrochemicals, thereby, reducing dependence on petroleum / fossil fuels – a finite resource.

Sorona® Performance PLUS
- The production of Sorona® has life cycle benefits over the production of Nylon6 :
  - 30% less non-renewable energy used.
  - 63% reduction in greenhouse gas emissions.
What is DuPont™ Sorona®?

**High Performance Polymer**
The unique molecular structure and crystalline morphology of Sorona® gives unique properties in fibers. Strain deformation occurs in crystalline regions, allowing full recovery.

![Chemical structure of Bio-PDO and PTA reacting to form Sorona® polymer](image)

- Unique polymer with versatile properties
- Partially renewably sourced ingredients by weight

**Key attribute of Sorona® branded PTT**
- Super Softness
- Comfort Stretch with Excellent Recovery
- Easy Dye with good color-fastness
- Chlorine/UV Resistant

**DuPont™ Sorona® in Apparel Value Chain**

![Diagram of the DuPont™ Sorona® value chain](image)
Fiber Types made with DuPont™ Sorona®

DuPont™ Sorona® polymer

Texturizer (ATY)

Homo Filament Fibers (FDY, DTY, MM)

Homo Staple Fibers

Spun yarn blends w/other fibers, e.g. cotton, rayon

Comfort Stretch Filament Fibers

Spun yarn blends w/other fibers, e.g. cotton, wool (stretch)

Comfort Stretch Staple Fibers

Fabric
Homo Filament Fibers Made With Sorona®

Attribute for consumer:
- Soft & rich hand feel
- Rich color performance
- Superior UV resistance
- Outstanding chlorine resistance
- Dries quickly
- Wrinkle release – shape memory fabric

Value in use: at mills
- Dyeing efficiency

Ideal end uses:
- Sportswear
- Jacket, Outer wear
- Yoga wear
- Swimwear
- Intimate apparel
- Seamless

Fiber specification
- Type: FDY, DTY, ATY
- Luster: semi dull, full dull
- Cross section: round and odd cross section
- Denier range: 30d – 150d
Homo Staple Fibers Made With Sorona®

Attribute for consumer
- Soft and rich hand
- Shape retention
- Improved pilling performance
- Dries quicker

Value in use at mills
- Versatile/Adaptable to be spun with most staple fibers

Fabric Drapability with & without Sorona®

Pilling Properties under Different Testing Method

Drying Properties

- Pilling, Martindale, 100 cycles
- Pilling, pilling box, 21600 cycles
- Pilling, Tumble pilling, 0.5 hour
Homo Staple Fibers
Made With Sorona®

Ideal end uses
- Intimate apparel
- Sportswear
- Sweaters
- Trousers
- Insulation for padding items
- Socks

Fiber types
- Standard
- Moisture Management
- Hollow (thermal)
- Insulation, fiber-fill

<table>
<thead>
<tr>
<th>Strength</th>
<th>2.8-3.2cN/dtex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elongation</td>
<td>60-70%</td>
</tr>
<tr>
<td>Shrinkage (dry)</td>
<td>6-7%</td>
</tr>
<tr>
<td>Moisture</td>
<td>0.2-0.3%</td>
</tr>
</tbody>
</table>
Comfort Stretch Filament with Sorona®

Attribution for consumer
- Comfort stretch with excellent recovery
- Volume draping hand feel
- Less wrinkle after hours wearing

Value in use at mills
- Easy processing, no core spun yarn process
- Anti-chlorine during industrial laundering
- Less color migration for polyester stretch fabric
- Versatile/Adaptable to meet fashion trends

Ideal end uses
- Jeans, all denim apparel
- Woven and Knit Bottoms
- Outer wear
- Shirting
- Knit tops –double knit, single knit
- Loungewear
Comfort Stretch Staple with Sorona®

Attribution for consumer
- Comfort stretch with outstanding recovery
- Excellent dimensional stability
- Soft hand feel with smooth fabric appearance
- Natural volume touch

Value in use at mills
- Easy processing without core spun elastic fiber processing
- Reduce puckering, avoid grin-through of elastic fiber on fabric surface
- No need for high temperature heat setting
- Good dimensional stability in fabric stage
- Versatile/Adaptable for stretch fabric designs

Applications
- Jeans
- Trousers
- Suiting
- Casual shirts
- Jackets, Outer wear
- Knit tops, polo shirt
- Sportswear
DuPont™ Sorona® Sustainability Credentials

- Sorona® is made in part, with annually renewable plant based ingredients, that helps reduce dependency on oil and petrochemicals

- The production of Sorona® has life cycle benefits over the production of Nylon6*:  
  - 30% less non-renewable energy used.
  - 63% reduction in greenhouse gas emissions.

DuPont™ Sorona® fiber/polymer is a USDA certified biobased product

DuPont™ Sorona® renewably sourced fiber is one of the first 11 products approved to use the United States Department of Agriculture (USDA) new product label on certified bio-based products.

Oeko-Tex® Certified

DuPont™ Sorona® received Oeko-Tex® Standard 100 Certification, the most stringent Class 1 certification.

* Based on ISO 14040 Life Cycle Analysis. For more information, please visit www.renewable.dupont.com
Guidelines for labeling fabrics made with Sorona®

Fabric composition label in garments with homo fiber made with Sorona®

To be imported and sold in:

<table>
<thead>
<tr>
<th>United States</th>
<th>European Union</th>
<th>Asia Pacific</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ % Sorona® triexta*</td>
<td>□ % Sorona® polyester</td>
<td>□ % Sorona® polyester</td>
</tr>
<tr>
<td>□ % triexta*</td>
<td>□ % polyester</td>
<td>□ % polyester</td>
</tr>
</tbody>
</table>

**EXAMPLES:**

- 50% Sorona® triexta*
- 50% triexta*

Fabric composition label in garments with comfort stretch fiber made with Sorona®

To be imported and sold in:

<table>
<thead>
<tr>
<th>United States</th>
<th>European Union</th>
<th>Asia Pacific</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ % elasterell-p with Sorona®</td>
<td>□ % elastomultiester with Sorona®</td>
<td>□ % polyester with Sorona®</td>
</tr>
<tr>
<td>□ % elasterell-p</td>
<td>□ % elastomultiester</td>
<td>□ % polyester</td>
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</tbody>
</table>

**EXAMPLES:**

- 50% elasterell-p with Sorona®
- 50% elasterell-p

DuPont™ Sorona® branding criteria:

- Fabrics must contain a minimum of 20% of fiber made with Sorona® (Regular filament, Regular staple, Comfort stretch filament fiber) except for:
- Comfort stretch staple fiber - fabrics must contain a minimum of 10% of Comfort stretch staple fiber for one way stretch.
- Insulation: Insulation must contain a minimum of 30% Sorona® polymer.

* Triexta has been approved as a new generic subclass name by FTC, USA in March 2009.
**DuPont™ Sorona®**

renewably sourced fiber

Typical End Uses and Suggested Fiber application – Apparel

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>Homo Filament (FDY, DTY)</th>
<th>Homo Filament (ATY)</th>
<th>Homo Filament (M.M.)</th>
<th>Staple (Regular)</th>
<th>Staple (M.M.)</th>
<th>Comfort Stretch Filament</th>
<th>Comfort Stretch Staple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackts / Outerwear</td>
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<tr>
<td>Swimwear</td>
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<tr>
<td>Intimate Apparel</td>
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<tr>
<td>Seamless Wear</td>
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<tr>
<td>Lounge wear</td>
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<tr>
<td>Trousers</td>
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<td>Jeans / Denim</td>
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<tr>
<td>Suiting</td>
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<td>Shirting</td>
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<tr>
<td>Knit Tops</td>
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<tr>
<td>Sportswear</td>
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<tr>
<td>Yoga wear</td>
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<tr>
<td>Sweaters</td>
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<tr>
<td>Saree / chiffon / georgette</td>
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<tr>
<td>Insulation/Padding</td>
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</tbody>
</table>

Remarks: *** highly recommend; ** ideal application, * recommend.
Support You Can Count On, From An Ingredient Brand Partner You Can Trust

- Innovation: With the versatility of Sorona®, a variety of fiber types are available to enable you to achieve a wide range of fabrics that are designed for function and performance. Please contact a local Sorona® representative to find the spinners and fabric mills that can support you with new, exciting fabric developments with Sorona®.

- Sustainability: Sorona® is the only PTT fiber that is renewably sourced. Use renewably sourced fibers to differentiate your offerings from other competitors and achieve your sustainability goals.

- Global Reach: Leverage the power of the DuPont™ Sorona® global marketing and technical network.
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