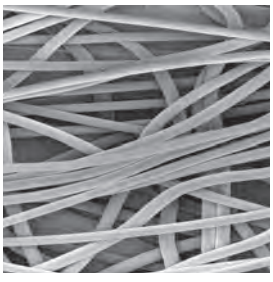
# Cerex ADVANCED FABRICS

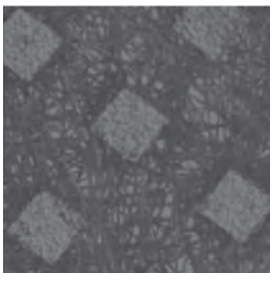
## The Nylon Advantage®



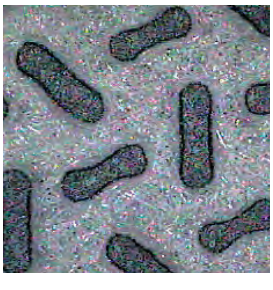
SPECTRAMAX®

CEREX®

PBN-II®



ORION®



SPECTRALON®

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# CEREX Advanced Fabrics

CEREX Advanced Fabrics is an ISO 9001 certified producer of a wide range of specialty spunbond nylon fabrics that have served customers worldwide for over 30 years. The company is located near Pensacola, Florida, U.S.A., and operates three spunbond manufacturing lines based on CEREX's proprietary technology.

All of our fabrics exhibit excellent uniformity, plus high tensile and tear strength even at low fabric weights. Because the fabrics are made of nylon (PA66), one of the toughest and most durable man-made polymers, our fabrics have high sewn seam strength when fabricated into finished articles, and the edges of the fabrics are not subject to raveling. In addition, nylon bonds well with all adhesive systems making these fabrics excellent materials for manufacturing laminate and composite systems.

The thermal stability of our nylon fabrics is outstanding: all six fabrics have melt points in the neighborhood of 500°F (260°C), with dimensional stability up to 400°F (200°C). They can be processed at temperatures as high as 425°F (215°C) for limited periods of time. These fabrics resist attack by many solvents, alkalis, and dilute acids used in manufacturing processes.

*CEREX Advanced Fabrics offers six product lines to meet your needs:*

## Cerex®

products are nonwoven fabrics made by spinning and autogenously bonding continuous filaments of nylon into a flat, smooth, strong, crisp fabric. Autogenous bonding is achieved by exposing the nylon web to a chemically activating gas phase that is later removed from the web. This fabric is available in weights ranging from 0.3 osy (10 gsm) to 2.0 osy (68 gsm) and in widths up to 120 inches (3 meters).

## VIBRAtex®

products are chemically bonded nonwoven nylon fabrics available in custom colors. The coloring of the fabrics is achieved by encapsulating the colors in the fibres and therefore, is less likely to bleach, fade or wash out of the fabric.
VIBRAtex® is available in weights ranging from 0.3 osy (10 gsm) to 2.0 osy (68 gsm) and in widths up to 120 inches (3 meters).

## PBN-II®

is a nonwoven product made by spinning and thermally bonding continuous filaments of nylon into drapable, conformable, textile-like fabric. Available weights range from 0.30 osy (10 gsm) to 4.0 osy (136 gsm) and in widths up to 120 inches (3 meters).

## Orion®

is a nylon fabric thermally bonded with a diamond bond pattern. These materials are available in the same basis weights and widths as our PBN-II® fabrics.

## Spectralon®

products are thermal bonded nonwoven nylon fabrics available in custom colors. The coloring of the fabrics is achieved by encapsulating the colors in the fibers and therefore, is less likely to bleach, fade or wash out of the fabric. Spectralon® fabrics are available in either a cross hatch or diamond pattern, in basis weights ranging from 0.30 osy (10 gsm) to 4.0 osy (136 gsm) and in widths up to 120 inches (3 meters).

## SpectraMax®

products are nonwoven fabrics made by spinning and thermally bonding continuous filaments of nylon (PA66) into a textile-like fabric with a soft and smooth surface. The fabrics have a "herringbone" bond pattern and are available in weights ranging from 0.4 osy (14 gsm) to 3.0 osy (102 gsm) and in widths up to 120 inches (3 meters). SpectraMax® has a superior uniformity, strength performance and comfort due to its fine denier (2 denier / 2.2 dtex).

# Specialty Fabrics

**Cerex Advanced Fabrics** also offers several engineered products using spunbond nylon as the base fabric. These fabrics can be customized based on your specific need. Call us to discuss our capabilities and your requirements.

**Secco™:** An abrasion resistant, hydrophobic yet breathable, dyeable fabric targeting the shoe & boot liner market.

**Stratym™:** A multi-layered, low lint composite fabric with high strength and absorbency targeting the technical wipe and filtration markets.

**Stirata™:** A stretchable "microcreped" product with elastic recovery in one direction, targeting filtration and apparel applications.

**Insulex™:** A metalized fabric that is light and heat reflective with good shielding properties. Targeting the wallcovering and insulation markets.

**Esynce™:** Topically treated fabrics with antimicrobial/antifungal properties; UV or IR light resistence targeting outdoor, military and home furnishings end uses.

**Nexsyn™:** Heavyweight SpectraMax® fabrics perforated for breathability & a uniform look.

# Typical Markets

**Filtration Media:** HVAC, Air, Liquid, Automotive Fuel, Hydraulic, Geotextiles.

**Rug Components:** Carpet Backing & Bindings.

**Automotive Construction:** Headliners, Airbag Packaging, Slip Sheet, Seating Components.

**Home Furnishings:** Mattress Pad Components, Wall Covering Components, Window Treatments.

**Medical:** Bandages, Wraps, Medical Device Components.

**Other:** Shoe Liners, Outdoor Recreation & Military Fabrics.

# The Nylon Advantage®

## Composition

Our SpectraMax®, Cerex®, PBN-II®, Orion®, Spectralon® and VIBRAtex® fabrics are made of nylon, one of the toughest and most durable man made polymers.

## Strength and Uniformity

Our fabrics have high tear and tensile strength even at low fabric weight, and outstanding uniformity providing an excellent coating substrate.

**Grab strength**

Grab strength is a measure of the "effective strength" of a fabric; that is, the strength of the fibers in a specific width together with the additional strength contributed by adjacent fibers. Typically the grab strength is determined on a four-inch-wide strip of fabric. The tensile load is applied at the midpoint of the width through one-inch-wide jaw faces that are used to clamp the fabric. The breaking loads are averaged to the nearest pound for each fabric direction.

Grab strength is particularly important when CEREX Advanced Fabrics products are used to reinforce components. High grab strength means that fabric containing product will better maintain its integrity during handling and positioning whether it is gripped mechanically or by hand.

**Tear strength**

Tear strength is a measure of the force necessary to tear a fabric, expressed in pounds. In the trapezoid tear test, notched specimens are clamped in jaws and load until the fabric rips apart.

Tear strength is an indication of the ability to resist propagation of accidental tears or snags or deliberately-imposed perforation.

**Burst strength**

Burst strength is a measure, expressed in pounds per square inch, of the ability of a fabric to resist rupture by pressure. Burst strength is important in filtration application, measuring the ability of the fabric to withstand various air or liquid pressures that load the fabric.

## Air Permeability

Our wide range of fabric weights allows the choice of fabric permeability. Air permeability is a measure of the ease with which air will pass through a fabric. It is measured in cubic feet of air passing through a square foot of fabric in a minute at a given pressure differential across the fabric. Air permeability is of primary importance in the construction and performance of air filters.

## Chemical Resistance

Our fabrics resist attack by many solvents, alkalis, and dilute acids found in manufacturing processes.

## Thermal Resistance

Our nylon fabrics have a melting point of approximately 500°F (260°C), with dimensional stability up to 400°F (200°C). They can be processed at temperatures as high as 425°F (215°C) for limited periods of time.

## Gamma Radiation Resistance

Nylon products are resistant to gamma radiation, maintaining significant physical properties after irradiation.

## Printability and Dyeability

SpectraMax®, Cerex®, PBN-II® and Orion® are easily dyed with dyes typically used for nylon fabrics. All fabrics are readily printed using the wide range of techniques, inks, dyes, and pigment formulations applicable to nylon.

## Quality

CEREX Advanced Fabrics is dedicated to providing high quality products and services and is proud to have attained ISO 9001 certification. In addition CEREX Advanced Fabrics has achieved the TS16949 certification which is needed in the automotive industry. Our testing lab is A2LA certified.

# Chemical Resistance of Nylon 6,6

| Chemical | Resistance |
|---|---|
| Aromatic Solvents | Excellent |
| Alipathic Solvents | Excellent |
| Hydrocarbons | Excellent |
| Gas & Oils | Excellent |
| Refrigerants | Excellent |
| Alkalis | Good |
| Weak Acids | Good |
| Chlorinated Solvents | Fair |
| Strong Acids | Weak |
| Oxidizing Agents | Weak |

# Properties of Nylon 6,6

| | |
|---|---|
| **Thermal** | |
| Melt Point | 260 deg C |
| Softening Point | 220 deg C |
| Specific Heat Capacity | 1.667 KJ/Kg/K |
| Energy to Melt | 589 KJ/Kg |
| Thermal Conductivity | 0.23 W/mK |
| **Physical** | |
| Specific Gravity | 1.14 |
| Moisture Regain | 4.5% |
| Water Absorption (equilibrium @ 50% RH) | 2.5% |
| **Electrical** | |
| Dielectric Constant | 4.0 @60 hz |
| | 3.9 @1Khz |
| | 3.6 @1 Mhz |
| Volume Resistivity | |
| @50% RH | 1012 (ohms/cm) |
| @100% RH | 109 (ohms/cm) |
| **Flamability** | |
| FMVSS 302 | DNI/SE |
| Limting Oxygen Index | 28 |

CEREX®

# Typical Physical Properties of CEREX® Fabrics

CEREX® products are nonwoven fabrics made by spinning and autogenously bonding continuous filaments of nylon (PA66) into a flat, strong and crisp fabric. Autogenous bonding is achieved by exposing the nylon web to a chemically activating gas phase that is later removed from the web. The fabric is available in weights ranging from 0.30 osy (10 g/m2) to 2.0 osy (68g/m2) in widths up to 120 inches (3 meters).

**English Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| osy | mils | lbs. | % elong. | lbs. | % elong. | lbs. | lbs. | psi | cfm/ft2 |
| 0.30 | 3.0 | 8 | 41 | 4 | 63 | 3 | 5 | 10 | 1974 |
| 0.40 | 3.0 | 12 | 44 | 7 | 56 | 4 | 7 | 13 | 1495 |
| 0.50 | 3.7 | 16 | 44 | 9 | 59 | 4 | 7 | 16 | 1179 |
| 0.60 | 3.9 | 20 | 47 | 12 | 57 | 5 | 8 | 20 | 981 |
| 0.70 | 3.8 | 24 | 47 | 15 | 56 | 6 | 9 | 24 | 800 |
| 0.85 | 4.0 | 31 | 48 | 20 | 59 | 7 | 10 | 29 | 632 |
| 1.00 | 5.4 | 37 | 50 | 24 | 58 | 8 | 11 | 35 | 511 |
| 1.50 | 6.9 | 59 | 55 | 39 | 63 | 10 | 15 | 53 | 292 |
| 2.00 | 8.3 | 85 | 62 | 58 | 70 | 13 | 22 | 71 | 189 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

**Metric Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| gsm | mm | N | % elong. | N | % elong. | N | N | kPa | m3/m2/s |
| 10 | 0.08 | 35.6 | 41 | 17.8 | 63 | 13.3 | 22.2 | 68.9 | 10.03 |
| 14 | 0.08 | 53.4 | 44 | 31.1 | 56 | 17.8 | 31.1 | 89.6 | 7.59 |
| 17 | 0.09 | 71.2 | 44 | 40.0 | 59 | 17.8 | 31.1 | 110.3 | 5.99 |
| 20 | 0.10 | 89.0 | 47 | 53.4 | 57 | 22.2 | 35.6 | 137.9 | 4.98 |
| 24 | 0.10 | 106.8 | 47 | 66.7 | 56 | 26.7 | 40.0 | 165.5 | 4.06 |
| 29 | 0.10 | 137.9 | 48 | 89.0 | 59 | 31.1 | 44.5 | 199.9 | 3.21 |
| 34 | 0.14 | 164.6 | 50 | 106.8 | 58 | 35.6 | 48.9 | 241.3 | 2.60 |
| 51 | 0.18 | 262..4 | 55 | 173.5 | 63 | 44.5 | 66.7 | 365.4 | 1.48 |
| 68 | 0.22 | 378.1 | 62 | 258.0 | 70 | 57.8 | 97.9 | 489.5 | 0.96 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

# Typical Roll Sizes and Weights of CEREX® Fabrics

| Fabric Weight | | Max. Roll Width | | Regular Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.30 | 10 | 117 | 2’972 | 3’000 | 2’743 | 15 | 381 | 183 | 83 |
| 0.40 | 14 | 120 | 3’048 | 3’000 | 2’743 | 17 | 432 | 250 | 113 |
| 0.50 | 17 | 120 | 3’048 | 3’000 | 2’743 | 19 | 483 | 313 | 142 |
| 0.60 | 20 | 120 | 3’048 | 3’000 | 2’743 | 20 | 508 | 375 | 170 |
| 0.70 | 24 | 121 | 3’073 | 3’000 | 2’743 | 21 | 533 | 441 | 200 |
| 0.85 | 29 | 122 | 3’099 | 3’000 | 2’743 | 23 | 584 | 540 | 245 |
| 1.00 | 34 | 122 | 3’099 | 2’000 | 1’829 | 20 | 508 | 424 | 192 |
| 1.50 | 51 | 122 | 3’099 | 2’000 | 1’829 | 25 | 635 | 641 | 291 |
| 2.00 | 68 | 124 | 3’150 | 1’000 | 914 | 20 | 508 | 431 | 196 |

| Fabric Weight | | Max. Roll Width | | Jumbo Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.30 | 10 | 117 | 2’972 | 10’000 | 9’144 | 27 | 686 | 609 | 276 |
| 0.40 | 14 | 120 | 3’048 | 7’000 | 6’401 | 25 | 635 | 583 | 264 |
| 0.50 | 17 | 120 | 3’048 | 7’000 | 6’401 | 28 | 711 | 729 | 331 |
| 0.60 | 20 | 120 | 3’048 | 6’000 | 5’486 | 28 | 711 | 750 | 340 |
| 0.70 | 24 | 121 | 3’073 | 6’000 | 5’486 | 30 | 762 | 882 | 400 |
| 0.85 | 29 | 122 | 3’099 | 5’000 | 4’572 | 30 | 762 | 900 | 408 |
| 1.00 | 34 | 122 | 3’099 | 3’000 | 2’743 | 25 | 635 | 635 | 288 |
| 1.50 | 51 | 122 | 3’099 | N/A | N/A | N/A | N/A | N/A | N/A |
| 2.00 | 68 | 124 | 3’150 | N/A | N/A | N/A | N/A | N/A | N/A |

PBN-II®

# Typical Physical Properties of PBN-II® Fabrics

PBN-II® products are nonwoven fabrics made by spinning and thermally bonding continuous filaments of nylon (PA66) into a drapable, conformable, textile-like fabric, PBN-II® fabrics have a cross hatch bond pattern. Available weights ranging from 0.30 osy (10 g/m2) to 4.0 osy (136 g/m2) in widths up to 120 inches (3 meters).

**English Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| osy | mils | lbs. | % elong. | lbs. | % elong. | lbs. | lbs. | psi | cfm/ft2 |
| 0.30 | 4.1 | 6 | 56 | 4 | 63 | 1 | 3 | 8 | 2364 |
| 0.40 | 4.5 | 11 | 54 | 7 | 60 | 2 | 3 | 10 | 1876 |
| 0.50 | 5.9 | 12 | 60 | 8 | 63 | 3 | 4 | 13 | 1516 |
| 0.70 | 7.0 | 21 | 63 | 13 | 67 | 4 | 6 | 19 | 1080 |
| 0.85 | 8.0 | 25 | 68 | 17 | 75 | 4 | 7 | 24 | 949 |
| 1.00 | 9.3 | 30 | 69 | 21 | 75 | 6 | 10 | 29 | 774 |
| 1.50 | 12.6 | 49 | 76 | 36 | 85 | 11 | 17 | 45 | 500 |
| 2.00 | 15.2 | 72 | 80 | 52 | 89 | 16 | 24 | 61 | 353 |
| 2.50 | 15.9 | 93 | 83 | 69 | 93 | 20 | 31 | 79 | 268 |
| 3.00 | 19.1 | 116 | 84 | 86 | 94 | 24 | 36 | 97 | 197 |
| 4.00 | 22.3 | 157 | 91 | 119 | 100 | 34 | 49 | 117 | 125 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

**Metric Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| gsm | mm | N | % elong. | N | % elong. | N | N | kPa | m3/m2/s |
| 10 | 0.10 | 26.7 | 56 | 17.8 | 63 | 4.4 | 13.3 | 55.2 | 12.01 |
| 14 | 0.11 | 48.9 | 54 | 31.1 | 60 | 8.9 | 13.3 | 68.9 | 9.53 |
| 17 | 0.15 | 53.4 | 60 | 35.6 | 63 | 13.3 | 17.8 | 89.6 | 7.70 |
| 24 | 0.18 | 93.4 | 63 | 57.8 | 67 | 17.8 | 26.7 | 131.0 | 5.49 |
| 29 | 0.20 | 111.2 | 68 | 75.6 | 75 | 17.8 | 31.1 | 165.5 | 4.82 |
| 34 | 0.24 | 133.4 | 69 | 93.4 | 75 | 26.7 | 44.5 | 199.9 | 3.93 |
| 51 | 0.32 | 218.0 | 76 | 160.1 | 85 | 48.9 | 75.6 | 310.3 | 2.54 |
| 68 | 0.39 | 320.3 | 80 | 231.3 | 89 | 71.2 | 106.8 | 420.6 | 1.79 |
| 85 | 0.40 | 413.7 | 83 | 306.9 | 93 | 89.0 | 137.9 | 544.7 | 1.36 |
| 102 | 0.49 | 516.0 | 84 | 382.5 | 94 | 106.8 | 160.1 | 668.8 | 1.00 |
| 136 | 0.57 | 698.4 | 91 | 529.3 | 100 | 151.2 | 218.0 | 806.7 | 0.64 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

# Typical Roll Sizes and Weights of PBN-II® Fabrics

| Fabric Weight | | Max. Roll Width | | Regular Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.30 | 10 | 110 | 2'794 | 3'000 | 2'743 | 16 | 406 | 173 | 79 |
| 0.40 | 14 | 117 | 2'972 | 3'000 | 2'743 | 18 | 457 | 244 | 111 |
| 0.50 | 17 | 120 | 3'048 | 3'000 | 2'743 | 19 | 483 | 313 | 142 |
| 0.70 | 24 | 121 | 3'073 | 3'000 | 2'743 | 22 | 559 | 441 | 200 |
| 0.85 | 29 | 122 | 3'099 | 3'000 | 2'743 | 25 | 635 | 540 | 245 |
| 1.00 | 34 | 122 | 3'099 | 2'000 | 1'829 | 22 | 559 | 424 | 192 |
| 1.50 | 51 | 122 | 3'099 | 2'000 | 1'829 | 19 | 483 | 635 | 288 |
| 2.00 | 68 | 123 | 3'124 | 1'000 | 914 | 21 | 533 | 427 | 194 |
| 2.50 | 85 | 123 | 3'124 | 1'000 | 914 | 24 | 610 | 534 | 242 |
| 3.00 | 102 | 123 | 3'124 | 500 | 457 | 20 | 508 | 320 | 145 |
| 4.00 | 136 | 123 | 3'124 | 500 | 457 | 22 | 559 | 427 | 194 |

| Fabric Weight | | Max. Roll Width | | Jumbo Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.30 | 10 | 110 | 2'794 | 10'000 | 9'144 | 27 | 686 | 583 | 264 |
| 0.40 | 14 | 117 | 2'972 | 7'000 | 6'401 | 25 | 635 | 569 | 258 |
| 0.50 | 17 | 120 | 3'048 | 7'000 | 6'401 | 28 | 711 | 729 | 331 |
| 0.70 | 24 | 121 | 3'073 | 6'000 | 5'486 | 30 | 762 | 882 | 400 |
| 0.85 | 29 | 122 | 3'099 | 5'000 | 4'572 | 30 | 762 | 900 | 408 |
| 1.00 | 34 | 122 | 3'099 | 3'000 | 2'743 | 25 | 635 | 635 | 288 |
| 1.50 | 51 | 122 | 3'099 | 2'000 | 1'829 | 27 | 686 | 635 | 288 |
| 2.00 | 68 | 123 | 3'124 | 2'000 | 1'829 | 30 | 762 | 854 | 387 |
| 2.50 | 85 | 123 | 3'124 | 1'500 | 1'372 | 29 | 737 | 800 | 363 |
| 3.00 | 102 | 123 | 3'124 | 1'000 | 914 | 26 | 660 | 641 | 291 |
| 4.00 | 136 | 123 | 3'124 | 1'000 | 914 | 30 | 762 | 854 | 387 |

ORION®

# Typical Physical Properties of ORION® Fabrics

ORION® fabrics, like PBN-II® fabrics, are nonwoven fabrics made by spinning and thermally bonding continuous filaments of nylon (PA66) into a drapable, conformable, textile-like fabric. ORION® fabrics are bonded with a diamond shaped pattern. ORION® comes in basis weights from 0.30 osy (10g/m2) to 4.0 osy (136 g/m2) in widths up to 120 inches (3 meters).

**English Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| osy | mils | lbs. | % elong. | lbs. | % elong. | lbs. | lbs. | psi | cfm/ft2 |
| 0.30 | 4.0 | 7 | 47 | 4 | 49 | 1 | 3 | 8 | 2232 |
| 0.35 | 5.0 | 7 | 51 | 5 | 52 | 2 | 3 | 11 | 1978 |
| 0.50 | 6.0 | 13 | 52 | 8 | 55 | 3 | 4 | 13 | 1416 |
| 0.70 | 7.2 | 20 | 55 | 13 | 58 | 4 | 6 | 19 | 1041 |
| 1.00 | 9.0 | 32 | 59 | 21 | 65 | 6 | 10 | 29 | 720 |
| 2.00 | 14.0 | 76 | 70 | 53 | 76 | 15 | 23 | 61 | 288 |
| 3.00 | 17.0 | 122 | 78 | 86 | 83 | 25 | 38 | 97 | 163 |
| 4.00 | 19.3 | 155 | 87 | 116 | 91 | 35 | 47 | 108 | 91 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

**Metric Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| gsm | mm | N | % elong. | N | % elong. | N | N | kPa | m3/m2/s |
| 10 | 0.10 | 31.1 | 47 | 17.8 | 49 | 4.4 | 13.3 | 55.2 | 11.34 |
| 12 | 0.13 | 31.1 | 51 | 22.2 | 52 | 8.9 | 13.3 | 75.8 | 10.05 |
| 17 | 0.15 | 57.8 | 52 | 35.6 | 55 | 13.3 | 17.8 | 89.6 | 7.19 |
| 24 | 0.18 | 89.0 | 55 | 57.8 | 58 | 17.8 | 26.7 | 131.0 | 5.29 |
| 34 | 0.23 | 142.3 | 59 | 93.4 | 65 | 26.7 | 44.5 | 199.9 | 3.66 |
| 68 | 0.36 | 338.1 | 70 | 235.8 | 76 | 66.7 | 102.3 | 420.6 | 1.46 |
| 102 | 0.43 | 542.7 | 78 | 382.5 | 83 | 111.2 | 169.0 | 668.8 | 0.83 |
| 136 | 0.49 | 689.5 | 87 | 516.0 | 91 | 155.7 | 209.1 | 744.6 | 0.46 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

# Typical Roll Sizes and Weights of ORION® Nylon Fabrics

| Fabric Weight | | Max. Roll Width | | Regular Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.30 | 10 | 112 | 2'845 | 3'000 | 2'743 | 16 | 406 | 173 | 79 |
| 0.40 | 14 | 117 | 2'972 | 3'000 | 2'743 | 18 | 457 | 244 | 111 |
| 0.50 | 17 | 120 | 3'048 | 3'000 | 2'743 | 19 | 483 | 313 | 142 |
| 0.70 | 24 | 121 | 3'073 | 3'000 | 2'743 | 22 | 559 | 441 | 200 |
| 0.85 | 29 | 122 | 3'099 | 3'000 | 2'743 | 25 | 635 | 540 | 245 |
| 1.00 | 34 | 122 | 3'099 | 2'000 | 1'829 | 22 | 559 | 424 | 192 |
| 1.50 | 51 | 122 | 3'099 | 1'000 | 914 | 19 | 483 | 318 | 144 |
| 2.00 | 68 | 123 | 3'124 | 1'000 | 914 | 21 | 533 | 627 | 284 |
| 2.50 | 85 | 123 | 3'124 | 1'000 | 914 | 24 | 610 | 534 | 242 |
| 3.00 | 102 | 123 | 3'124 | 500 | 457 | 20 | 508 | 320 | 145 |
| 4.00 | 136 | 123 | 3'124 | 500 | 457 | 22 | 559 | 427 | 194 |

| Fabric Weight | | Max. Roll Width | | Jumbo Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.30 | 10 | 112 | 2'845 | 10'000 | 9'144 | 28 | 711 | 578 | 262 |
| 0.40 | 14 | 117 | 2'972 | 7'000 | 6'401 | 27 | 686 | 569 | 258 |
| 0.50 | 17 | 120 | 3'048 | 7'000 | 6'401 | 30 | 762 | 729 | 331 |
| 0.70 | 24 | 121 | 3'073 | 6'000 | 5'486 | 30 | 762 | 882 | 400 |
| 0.85 | 29 | 122 | 3'099 | 5'000 | 4'572 | 30 | 762 | 900 | 408 |
| 1.00 | 34 | 122 | 3'099 | 3'000 | 2'743 | 26 | 660 | 635 | 288 |
| 1.50 | 51 | 122 | 3'099 | 2'000 | 1'829 | 27 | 686 | 635 | 288 |
| 2.00 | 68 | 123 | 3'124 | 2'000 | 1'829 | 30 | 762 | 854 | 387 |
| 2.50 | 85 | 123 | 3'124 | 1'500 | 1'372 | 29 | 737 | 800 | 363 |
| 3.00 | 102 | 123 | 3'124 | 1'000 | 914 | 26 | 660 | 641 | 291 |
| 4.00 | 136 | 123 | 3'124 | 1'000 | 914 | 30 | 762 | 854 | 387 |

SpectraMax®

# Typical Physical Properties of SpectraMax® Fabrics

SpectraMax® products are nonwoven fabrics made by spinning and thermally bonding 2 denier continuous filaments of nylon (PA66) into a drapable, conformable, textile-like fabric. SpectraMax® fabrics have a "herring bone" pattern. Available in weights range from 0.40 osy* (14g/m2) to 3.0 osy (102g/m2) in widths up to 120 inches (3 meters).

**English Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| osy | mils | lbs. | % elong. | lbs. | % elong. | lbs. | lbs. | psi | cfm/ft2 |
| 0.40 | 4.0 | 6 | 51 | 4 | 56 | 2 | 3 | 8 | 1171 |
| 0.50 | 5.0 | 10 | 61 | 7 | 66 | 3 | 4 | 15 | 1048 |
| 0.70 | 6.0 | 16 | 65 | 12 | 68 | 4 | 6 | 18 | 657 |
| 1.00 | 8.0 | 29 | 68 | 19 | 73 | 6 | 8 | 27 | 365 |
| 1.20 | 9.0 | 40 | 73 | 25 | 76 | 8 | 12 | 31 | 311 |
| 1.30 | 10.0 | 38 | 75 | 27 | 77 | 8 | 13 | 31 | 286 |
| 1.50 | 10.0 | 45 | 76 | 32 | 78 | 9 | 15 | 34 | 237 |
| 1.75 | 12.0 | 61 | 80 | 43 | 84 | 11 | 19 | 44 | 197 |
| 2.00 | 13.0 | 71 | 80 | 52 | 83 | 12 | 21 | 51 | 137 |
| 2.50 | 15.0 | 91 | 85 | 64 | 91 | 11 | 18 | 66 | 100 |
| 3.00 | 17.0 | 111 | 87 | 82 | 90 | 16 | 20 | 80 | 81 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

**Metric Units**

| Fabric Weight | Thickness (ProGage) | Grab Strength | | | | Trap Tear | | Burst Strength | Air Perm. (Tex Test) |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | | CD | | MD | CD | | |
| gsm | mm | N | % elong. | N | % elong. | N | N | kPa | m3/m2/s |
| 14 | 0.10 | 26.7 | 51 | 17.8 | 56 | 8.9 | 13.3 | 55.2 | 5.95 |
| 17 | 0.13 | 44.5 | 61 | 31.1 | 66 | 13.3 | 17.8 | 103.4 | 5.32 |
| 24 | 0.15 | 71.2 | 65 | 53.4 | 68 | 17.8 | 26.7 | 124.1 | 3.34 |
| 34 | 0.20 | 129.0 | 68 | 84.5 | 73 | 26.7 | 35.6 | 186.2 | 1.85 |
| 41 | 0.23 | 177.9 | 73 | 111.2 | 76 | 35.6 | 53.4 | 213.7 | 1.58 |
| 44 | 0.25 | 169.0 | 75 | 120.1 | 77 | 35.6 | 57.8 | 213.7 | 1.45 |
| 51 | 0.25 | 200.2 | 76 | 142.3 | 78 | 40.0 | 66.7 | 234.4 | 1.20 |
| 60 | 0.30 | 271.3 | 80 | 191.3 | 84 | 48.9 | 84.5 | 303.4 | 1.00 |
| 68 | 0.33 | 315.8 | 80 | 231.3 | 83 | 53.4 | 93.4 | 351.6 | 0.70 |
| 85 | 0.38 | 404.8 | 85 | 284.7 | 91 | 48.9 | 80.1 | 455.1 | 0.51 |
| 102 | 0.43 | 493.8 | 87 | 364.8 | 90 | 71.2 | 89.0 | 551.6 | 0.41 |
| ASTM D3776 | ASTM D5729 | ASTM D5034 | | | | ASTM D5733 | | ASTM D3786 | ASTM D737 |

# Typical Roll Sizes and Weights of SpectraMax® Fabrics

| Fabric Weight | | Max. Roll Width | | Regular Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.50 | 17 | 120 | 3'048 | 3'000 | 2'743 | 19 | 483 | 313 | 142 |
| 0.70 | 24 | 121 | 3'073 | 3'000 | 2'743 | 22 | 559 | 441 | 200 |
| 1.00 | 34 | 122 | 3'099 | 2'000 | 1'829 | 22 | 559 | 424 | 192 |
| 1.30 | 44 | 122 | 3'099 | 2'000 | 1'829 | 22 | 559 | 551 | 250 |
| 1.50 | 51 | 122 | 3'099 | 1'000 | 914 | 19 | 483 | 318 | 144 |
| 1.75 | 59 | 122 | 3'099 | 1'000 | 914 | 20 | 508 | 371 | 168 |
| 1.80 | 61 | 122 | 3'099 | 1'000 | 914 | 20 | 508 | 381 | 173 |
| 2.00 | 68 | 123 | 3'124 | 1'000 | 914 | 21 | 533 | 427 | 194 |
| 2.50 | 85 | 123 | 3'124 | 1'000 | 914 | 24 | 610 | 534 | 242 |
| 3.00 | 102 | 123 | 3'124 | 500 | 457 | 20 | 508 | 320 | 145 |

| Fabric Weight | | Max. Roll Width | | Jumbo Size | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Roll Length | | Approx. Roll Diameter | | Approx. Roll Weight | |
| osy | gsm | inches | mm | yards | m | inches | mm | lbs | kg |
| 0.50 | 17 | 120 | 3'048 | 7'000 | 6'401 | 30 | 762 | 729 | 331 |
| 0.70 | 24 | 121 | 3'073 | 5'000 | 4'572 | 29 | 737 | 735 | 333 |
| 1.00 | 34 | 122 | 3'099 | 3'000 | 2'743 | 26 | 660 | 635 | 288 |
| 1.30 | 44 | 122 | 3'099 | 3'000 | 2'743 | 26 | 660 | 826 | 375 |
| 1.50 | 51 | 122 | 3'099 | 2'000 | 1'829 | 27 | 686 | 635 | 288 |
| 1.75 | 59 | 122 | 3'099 | 2'000 | 1'829 | 28 | 711 | 741 | 336 |
| 1.80 | 61 | 122 | 3'099 | 2'000 | 1'829 | 29 | 737 | 763 | 346 |
| 2.00 | 68 | 123 | 3'124 | 2'000 | 1'829 | 30 | 762 | 854 | 387 |
| 2.50 | 85 | 123 | 3'124 | 1'500 | 1'372 | 29 | 737 | 801 | 363 |
| 3.00 | 102 | 123 | 3'124 | 1'000 | 914 | 26 | 660 | 641 | 291 |

*Please ask us for additional basis weights

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