

# Cotton Fact Sheet

As Fiber artists, choosing a favorite fiber is like trying to pick your favorite child. We love them all and we don't want to slight anyone, but often there is that one that stands out. And that favorite fiber is usually cotton.

Cotton is a cellulosic fiber and is made from the fluffy fibers that surround the seeds of plants in the genus *Gossypium*. There are 4 species of cotton, but *Gossypium barbadense* (extra-long staple cotton varieties like Sea Island and Pima) and *Gossypium hirsutum* (shorter staple varieties like Upland) are the most prevalent. Upland cotton makes up 90% of the global cotton production. Cotton grows throughout the warm, middle latitudes across the globe.

**Mercerized Cotton Yarns**  retain their beauty longer because of the structural changes to the cotton fiber. While towels made from mercerized yarn do not absorb the water as quickly as an unmercerized towel, a towel made of mercerized yarn will go through the whole sinkful of dishes without becoming overly saturated. They will also have brighter colors at the beginning of their life, and retain their bright colors for longer, and they will hold up through more trips through the washing machine. Use mercerized yarn if you want a durable, bright fabric that softens as it ages.

**Unmercerized Cotton Yarns**  can have a lovely hand and are very absorbent. Fabrics made from unmercerized yarns do absorb water quickly but become saturated quickly. Unmercerized yarns are typically softer. However, they will wear out more quickly because the cotton fibers have not undergone structural changes, and dye releases from the fibers more easily and the dyed colors are more muted. Use unmercerized yarns if you want a soft hand right off the loom with less durability and less dye saturation.

**Cotton Grows in Colors.**  Cotton species have naturally occurring color variations. The cotton lint is naturally colored, and no dye is needed. For centuries, commercial plant breeders selected white cotton varieties as the standard, and the term white refers to a creamy off-white color. Over the last 40 years, some plant breeders like Sally Fox have worked to reintroduce colored cotton varieties. Some of the colors are permanent, and some are transient and change over time. Those transient colors can be altered by the pH of wash water.

**Ring Spinning**  is a process that twists the fibers together continuously. This creates a fine, smooth and strong yarn.

**Open-end Spinning**  is a process of rotor spinning where the fibers are spun but not twisted together as tightly. This quicker method results in a bulkier and less smooth yarn.

## **Tips on weaving with cotton:**

1. Mercerized cotton yarns are stronger than unmercerized cotton yarns.
2. If using thin cotton yarns: minimize abrasion by managing your draw-in, warp back-to-front, if possible, and wind a couple extra warp threads to deal with breakage.

## **Tips on spinning cotton:**

1. Because cotton fibers are short, spin with high twist.
2. Spin from your own punis or commercially prepared EZ Spin cotton sliver.

## Common Cotton Yarns – Number of Yards per Cone

Cone Size (Ounces)	3/2	5/2	6/2	8/2	10/2	20/2	8/4
1	79	131	158	210	263	525	105
1.5	118	197	236	315	394	788	158
4	315	525	630	840	1,050	2,100	420
8	630	1,050	1,260	1,680	2,100	4,200	840
16	1,260	2,100	2,520	3,360	4,200	8,400	1,680

## Common Cotton Yarn Grist and Recommended Setts

Yarn Grist	Yards/lb	EPI Lace	EPI Plain Weave	EPI Twill	Suggested Uses
3/2	1260	10	12	14-16	Bath Towels, Blankets, Placemats
4/2	1680	12	15	18	Bath Towels, Blankets, Placemats
5/2	2100	16	18	20	Towels, Blankets, Placemats, Scarves, Heavy Weight Yardage
6/2	2520	16	18	20	Towels, Blankets, Placemats, Heavy Weight Yardage
8/4	1680	6	8-10	12	Rug Warp, Placemats
8/2	3360	16	20	24	Dishtowels, Scarves, Table Linens
10/2	4200	18	24	28	Scarves, Garments, Table Linens, Towels
12/2	5040	18	24	28	Scarves, Garments, Table Linens, Towels
16/2	6720	24	28	30	Garments, Table Linens
20/2	8400	26	30	36	Garments, Fine Table Linens
30/2	12600	36	40	45-48	Garments, Fine Table Linens
40/2	16800	54	52-56	60	Garments, Fine Table Linens

### Steps to Creating Cotton Yarn:

- **Harvesting:** Cotton is harvested in the fall.
- **Ginning:** The cotton fiber is separated from the seeds.
- **Combing or Carding:** Fibers are aligned and cleaned.
- **Slivering:** Creating a continuous bundle of the fibers.
- **Spinning:** Sliver is turned into singles yarn.
- **Plying:** Singles yarn is plied.
- **Mercerizing:** Tensioned yarn travels through a chemical bath that alters the cotton fiber creating a smooth shiny yarn.
- **Dyeing:** Make those pretty colors. Fiber Reactive Dyes.

### Yarn Count:

Size 1 yarn = 840 yards/lb

### Benefits of Cotton Yarn:

Highly Breathable  
Hypoallergenic  
Easy Maintenance  
Retains Shape Over Time