

Identifying Fibers and Fabrics

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If you shop the remnant racks or flat-fold tables, or you shop in a venue other than a full-service fabric store with labeled bolts, how do you know what fiber you're getting in that fabric you love? Without an inkling of fiber content, it's difficult to know how to sew, press and care for your finished project.

Testing 1, 2, 3...

Textile chemists and laboratory experts are able to identify certain fibers by their burning characteristics, and you can do the same tests to determine the content of your UFOs. The burn test works for both natural and man-made fibers, but it cannot be used with certainty to identify blended fibers within a fabric.

Ready, Set...

It's important to do a burn test in a well-ventilated area to avoid inhaling potentially toxic fumes. At minimum, open some windows, or better yet, do the test outside on a calm day and avoid inhaling the fumes from the burning fibers.

- Pre-wash the mystery fabric to remove any finishes that may affect the burn characteristics. Cut fabric swatches for testing approximately 2" square.
- Use long tweezers to hold the swatches you burn.
- Use a non-flammable container to place under the burning swatch—a large ashtray or glass dish will work, as will a metal baking pan.
- Use a lighter, an unscented candle or a fireplace starter to create a small flame.
- Keep water nearby in the event of a flare-up, or do the testing near a sink.
- If you have long hair, tie it back out of the way of the flame.

Finding Fire

Firmly grip the mystery swatch with the tweezers and gently ease one edge into the open flame. Avoid putting metal tweezers into the flame, as the heated metal can cause burns.

Move the swatch into the flame and quickly out of it. If the fabric is flaming, blow it out.

As you test, make note of the following for identification:

- While in the flame, does the fabric melt readily, smolder, or extinguish itself?
- When removed from the flame, what happens to the fabric?
- Does the fabric form a melted bead, or does it leave ash?
- Does the burnt fabric produce a distinct odor or smoke color?


The answers to these questions will help with the identification.

Fiber ID

The first narrowing process involves discerning animal, vegetable or synthetic fiber categories.

In general, animal fibers (wool, mohair, silk, etc.) burn and curl away from the flame and smell like burning hair. They're self-extinguishing when removed from the flame and leave a dull black hollow bead that's easily crushed.

Vegetable fibers, like cotton, rayon, linen, hemp, jute, etc., burn but don't pull away from the flame. They smell like burning paper, leaves or wood, and leave a fine gray ash. Some glow before they actually go out.

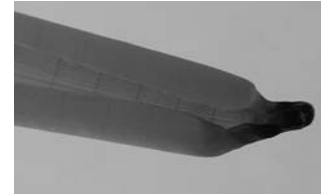
Synthetic fibers, like acetate, acrylic, nylon, polyester and spandex, melt and burn, curling away from the flame. All exude a chemical smell of some sort and leave various melted beads. See the chart for specific fiber characteristics. 

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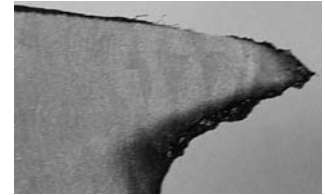
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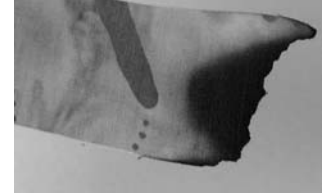
Fiber	Burn Character	Smoke/Smell	Residue	Notes
Acetate	melts and burns	vinegar	brittle dark bead	persistent flame; drips
Acrylic	melts and burns rapidly	burnt fish/acrid	hard black bead	black smoke
Cotton	steady flame/yellow flame	burning paper	soft dark ash	
Linen	slow to ignite	burning paper	fine gray ash	
Nylon	melts and burns	celery odor	hard black bead	melted fiber drips
Polyester	melts and burns	sweet chemical	hard black bead	melted fiber drips black smoke
Rayon	burns rapidly	burning leaves	soft gray ash	
Silk	burns slowly/self-extinguishing	burning hair	irregular soft bead	doesn't shrink from flame
Spandex	melts and burns	burning rubber	black ash	
Wool	self-extinguishing	burning hair/feathers	irregular hollow bead	shrinks from flame



Nylon



Silk



Cotton