

Burn Testing to Determine Fiber Content



Burn testing is not an exact science but can give you a “best guess” of the content of a mystery fabric.

What you need:

- A wide, nonflammable dish or pan (an aluminum, disposable pie pan or plate is ideal)
- A votive or other small candle
- Metal (nonflammable) tweezers or pliers. If you have locking tweezers or pliers, that is even better.
- Lighter
- Fabric to test – about a 1” square is often recommended. I find a triangular snippet of fabric about 2 ½” long and about ¾” wide at the widest end cut from the edge of yardage works well, or a small bundle of yarn scraps or raveled threads twisted together.
- Note: For further safety, have a dish of water nearby and do not use too large a sample

Process:

Threads Magazine has a short video clearly demonstrating the process:

<https://www.youtube.com/watch?v=xmKKvvpQujo>

Give it a try!

Gather fabric swatches in fabrications that you know. A good start are the following fibers which have distinct burn signatures:

- Cotton – plant fiber
- Wool – animal fiber
- Silk – animal fiber
- Polyester – synthetic

Try the burn test. Note how the swatch reacts to the flame, how it burns, if it smokes & color of smoke, how it extinguishes, how it smells, and what type of ash or residue is left behind. Consult the charts on the following pages to compare with your observations. Once you understand these basic fibers, try other fibers or a mystery fabric and see what you discover. Charts are similar but may have minor differences depending on author.

Other hints to fiber content:

When wet, rayon has a “boardy” feel, while cotton is more flexible. Linen & rayon normally have longer, smoother fibers making up the thread than cotton

Silk often has a “dry” feel while a silk-like synthetic is more likely to feel “slick.”

A drop of water generally absorbs very quickly on linen; on cotton it will usually bead briefly and more slowly absorb.

Wool dissolves in caustic soda.

The burn test

Burning a swatch is a simple way to test any fabric's fiber content. Here's how to burn and read the ashes for 10 common fiber types. You can usually immediately detect the presence of a synthetic in the ash of a fabric that appears to be all natural. Synthetic fibers, except rayon and Tencel (which are derived from cellulose), react differently from natural fibers: They melt, most turning into a hard bead. Natural fibers all leave a soft or crushable residue.

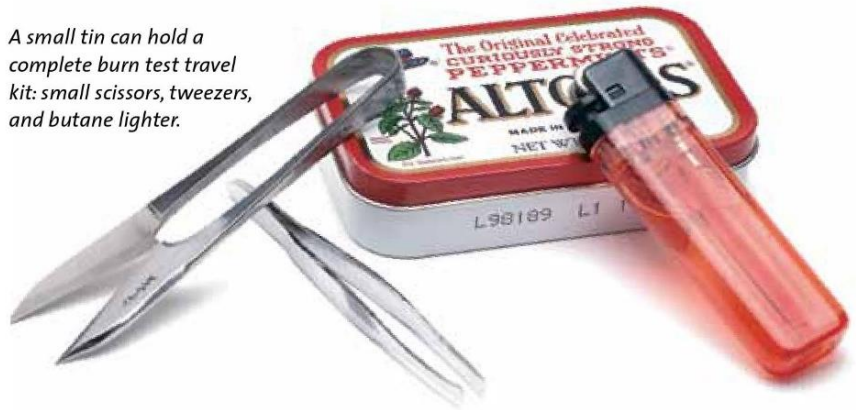
Adapted from Threads no. 81, "Fabric Lovers Always Carry a Flame," by Mary Elliott and Elaine Zarse.

FIBER	APPROACHING FLAME	IN FLAME	REMOVED FROM FLAME	ODOR	ASH
Cotton	Scorches; ignites quickly	Burns quickly; yellow flame	Continues to burn rapidly; has afterglow	Burning paper	Light and feathery gray ash; ash is black if mercerized
Linen	Scorches; ignites quickly	Burns less quickly than cotton; yellow flame	Continues to burn	Burning paper	Light and feathery gray ash
Rayon, Tencel	Scorches; ignites quickly	Burns more quickly than cotton; bright yellow flame	Continues to burn rapidly; has no afterglow	Burning paper	Light and feathery gray ash
Silk	Smolders and curls away from flame	Burns slowly; sputters	Burns with difficulty; ceases to flame	Burning hair	Round, shiny black bead; easy to crush
Wool	Smolders and curls away from flame; ignites slowly	Burns slowly with small flickering flame; sizzles and curls	Ceases to flame	Burning hair; stronger odor than silk	Crisp, dark ash; round, irregular bead; easy to crush
Nylon	Fuses (melts without burning) and shrinks away from flame	Melts, then burns slowly	Flame ceases and dies out	Celery	Round, hard, grayish bead; won't crush
Polyester, poly fleece	Fuses and shrinks away from flame	Melts and burns slowly	Burns with difficulty	Chemical	Round, hard, black bead; won't crush
Acetate	Fuses away from flame; turns black	Blazes and burns quickly; sputters, melts, and drips like burning tar	Continues to melt and burn	Vinegar	Hard, black ash; irregular bead; difficult to crush
Acrylic	Fuses and shrinks away from flame	Flames rapidly; sputters and melts	Continues to melt and burn	Chemical	Irregular, hard, black bead; won't crush
Spandex	Fuses and shrinks away from flame	Melts and burns	Continues to melt and burn	Sharp, bitter	Soft, sticky, gummy

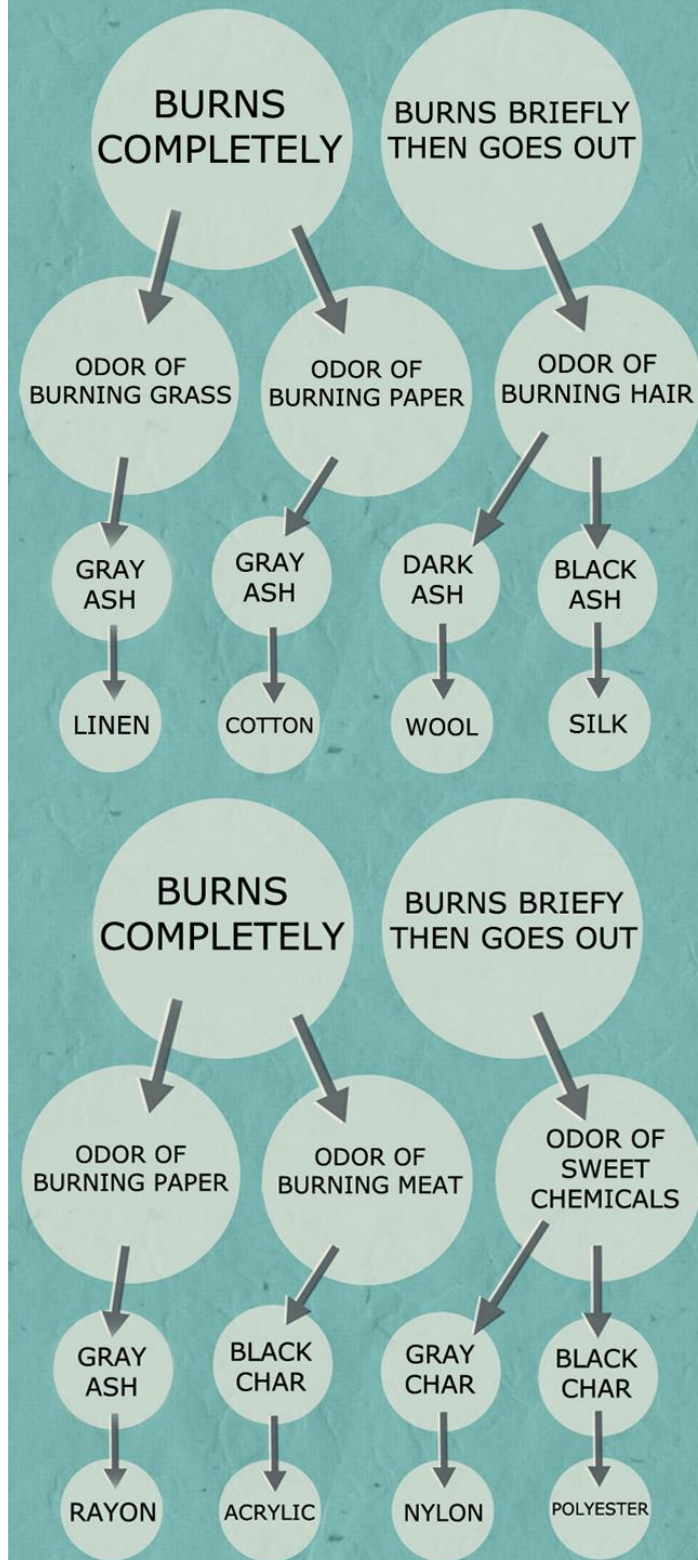
TEST FAMILIAR FABRICS FIRST

We suggest you make a copy of this chart for your sewing room. Start with some tests on fabrics that you know. Compare the results to the predictions on the chart. This is also a good way to get a feel for how blends burn. Blended fibers react individually as predicted, but the combined results may not obviously match anything on the chart.

A small tin can hold a complete burn test travel kit: small scissors, tweezers, and butane lighter.

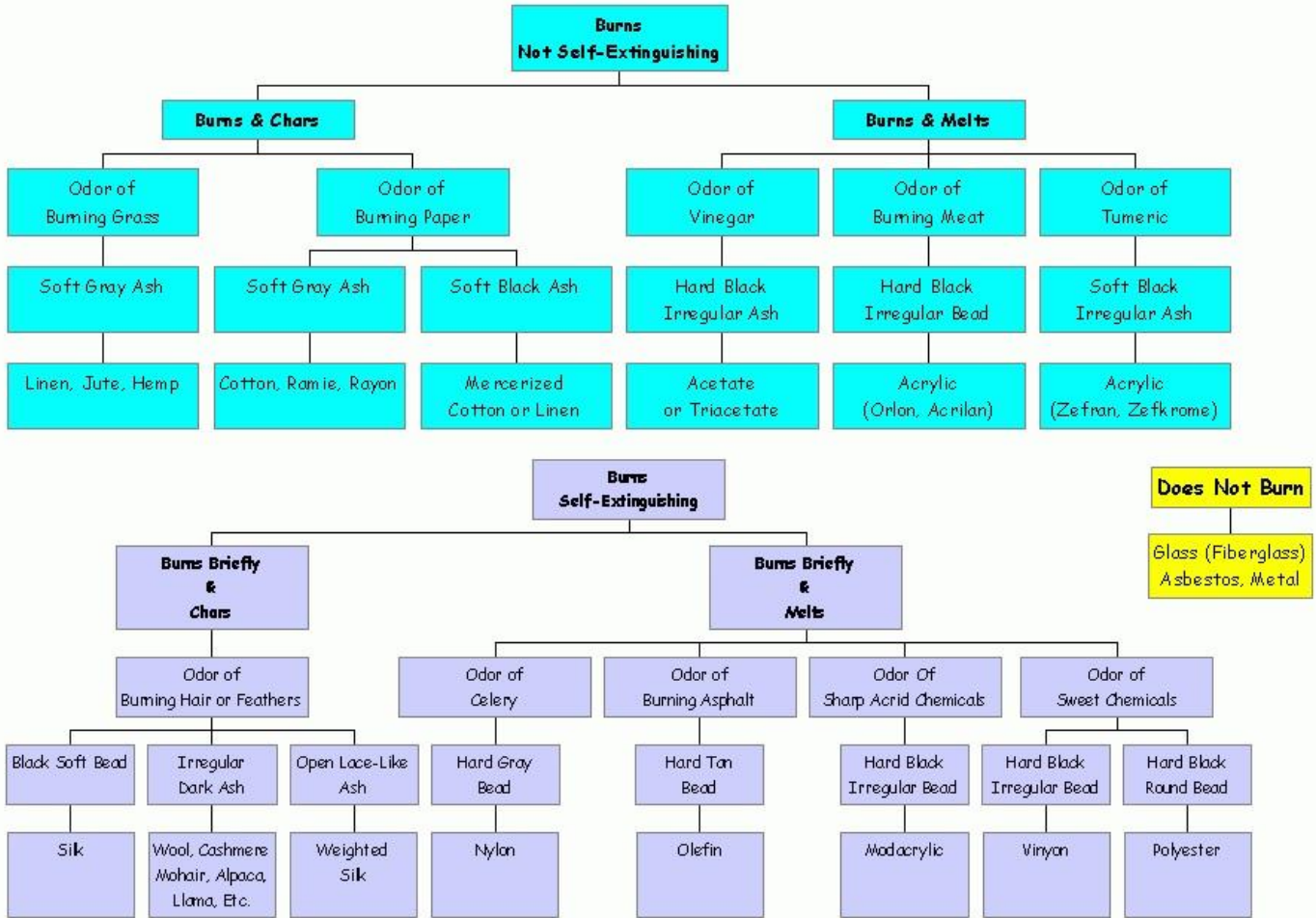


Burn Test to Identify Original Fabric



Source : Domesticgeekgirl.com

FIBER BURN CHART



Source: <https://looksgud.com/blog/real-facbrics-identify-genuine-tips-tricks/>