

## Burn Tests for Fibers

Fibre	6" from flame: shrinks from flame, flames quickly, resistant or no reaction	2 " from flame: melts, shrinks, catches/does not catch fire, no reaction	In the flame: flares quickly or slowly, keeps burning, or goes out, burns completely or some fibre remains	2' after flame: ash falls apart, balls up, stops burning, disappears or holds its shape.	Smell: burning hair, pungent or not, burned rubber, burned paper or burning grass.
Wool	Shrinks from flame	Does not catch fire	flares	Burning slows	Ash balls up but falls apart, smells like burning hair
Mohair	Reluctant to burn	Melts a bit	Flares more slowly than wool	Keeps burning but slows some fibre remains	Ash falls apart, pungent smell of burning hair
Camel	No reaction	No reaction	Burns when in the flame	Keeps burning but not as quickly. Some fibre remains	Ash crumbles. Not as pungent as wool, smells like burning hair
Tussah silk	No reaction	No reaction	Flares in the flame	Burns up quickly and completely	Strong smell not much ash left
Soya silk	No reaction	Shrinks	melts	Stops burning	Ash is a hard ball. Odor of burned rubber
Cotton Cellulose	No reaction	Shrinks	Flares quickly like a candle wick	Burns completely.	Ash is feathery but stays together until completely burned. Smells like burned paper

## Burn Tests for Fibers

Ramie	No reaction	Shrinks	Flares quickly	Burns completely. Ash shrinks up.	Smells like grass/paper. Ash is feathery
Flax	No reaction	No Reaction	Flares quickly	Ash disappears does not keep shape.	Smells like burning grass.

Knowing what kind of fibre you are working with will help you to decide what project is best suited to the fibre, how to care for it, how to finished it, and how to dye it. With a simple burn test, you can determine if a fibre is: protein (animal fibres such as wool, camel, angora, cashmere etc); cellulose such as flax, cotton or ramie; synthetic, or silk.

To do a burn test, assemble a set of long handled tongs, a candle or barbeque lighter, and a non-flammable basin, along with eye protection and oven mitts. Select a well ventilated but not windy area to do your tests. Use a small amount of fibre, but enough to give you a good reading of the ash that remains.

- Grip the fibre with the long handled tongs
- Bring the fibre close to the flame from the side rather than from the top.
- Do not inhale the fumes as some synthetic fibres may be toxic
- Do not touch the ash as some synthetic fibres can stick to your skin or clothing and burn you.
- Have water or a fire extinguisher at hand to quell any major flare ups.

Burn tests are based on observation, but as you do more you will be able to distinguish how different fibres burn:

- Observe how the fibre reacts as it is brought close to the flame and as it ignites.
- Does it shrink from the flame?
- What does it smell like?
- What colour is the smoke?
- What does the residue look like?

In general protein fibres shrink from the flame, sputter, and self-extinguish, smell like hair and have a beaded ash that falls apart when touched.

Cellulose fibres will flame quickly, burn completely and the ash disintegrates and smells like burning grass.

Synthetic fibres will melt and form a hard bead. They will smell like burning rubber or plastic