IDENTIFICATION OF FABRICKS

Sometimes, care labels on garment can tell you the type of fabric and how to care for it. However, often these labels are not available. It is therefore necessary that you learn how to identify fabrics using simple scientific experiments and tests.

Some simple scientific experiments and tests for textiles fibres include: (i) appearance and handle, (ii) microscopic appearance, (iii) strength test, and (iv) burning test.

Appearance and Handle

This is not a definite test. This is because a number of fabrics can have similar appearance and handle.

To perform, examine the fabric closely and feel its texture with your fingers. The table that follows show the indicators of the appearance and handle of various fabrics.

Fibre	**Appearance and Handle**
Cotton	Plain-weave cotton fabric is cool to feel and fairly firm. It has a dull appearance.
Linen	Plain weave linen fabric has a cool crisp handle and dull appearance.
Wool	Plain weave wool flannel has projecting fibres, rough and dull appearance and a springy or elastic feel. It is warm to handle.
Silk	Plain weave silk has a smooth and rich lustrous appearance. It is soft, smooth and resilient to handle.
Viscose rayon	Plain weave viscose has a smooth fairly soft handle and a smooth lustrous appearance. It may resemble silk.
Acetate	Plain weave acetate is silk like. It drapes well. It has smooth and soft handle. It may be dull or lustrous.
Nylon	Fabric is very smooth and slippery.
Polyesters	These have a smooth slippers feel, slightly stiffer than nylon.

Microscopic Test

This is the test to study the structure of the fibre under a microscope.

To perform, pull a fibre form the fabric. Mount the fibre on a slide with cover slip. Examine specimen under low power and under high power. Note whether fibres are round or flat. Observe other properties such as markings on the fibre. The result are as follows:

For cotton fibre/fabric, the fibre is flat and has a characteristic twist, and resembles a twisted ribbon.

For linen, the fibre is rounded and smooth with swellings or nodes at intervals.

For wool, the fibre is covered with scales that overlap and point towards the tip of the fibre.

For silk, the fibre is a de-gummed, very fine and has a smooth surface. Also, raw silk fibres are seen as double filaments.

For viscose rayon, the fibre is rounded with grooves running length wise. It looks like transparent rods streaked with wavy lines.

For acetate fibre, it is rounded with one or more surface ridges which look like thickened lines.

Nylon fibres or filaments look like a smooth glass rod.

Polyester fibres or filaments look like glass rod.

Strength Test

This is at test of both the wet and dry strengths of fibres.

To perform, draw two yarns or threads from the length-wise grain of the fabric. Wet one thoroughly in water. Hold the dry yarn between the finger and thumb of each hand and pull. Repeat the pulling with the wet yarn. Note the strength of each. Find out if the wet yarn is weaker, stronger or the same as the dry one.

For cotton, it is strong when dry. It is about 20% strong when wet. For linen, it is stronger than cotton. It increases in strength by about 20% when wet. For wool, it loses strength when wet. For silk, it loses about 20%

of its strength when wet. For viscose rayon, it loses strength when wet. Acetate fibre loses less strength than viscose when wet. Nylon fibres lose strength when wet. Polyester loses no strength when wet.

Burning Test

To do, draw a yarn or several yarns (threads) from the fabric. Hold the yarns in flame of lighted candle, match or gas burner, and withdraw rapidly.

Observe whether the yarn burns, continues to burn when out of the flame, shrinks from the flame and melts or melts and burns.

Also check if the fumes smell like that of burning paper, hair, vinegar, burnt meat, or boiling celery.

Also, check the nature of ash formed. The colour can be light and powdery, or a bead. If it is a bead, press it between the fingers when cold. Note whether it crushes or remains hard.

Cotton, viscose rayon and linen burn in and out of flame. Their fume smells like burning paper, and they leave very little grey or white powdery ash.

Wool and silk do not burn but smoulders. They give smell of burning hair or feathers. They leave a bead of porous carbon that is crushable.

Acetate burns like cotton, but gives a faint smell of acetic acid or vinegar. Its fumes smell like boiling celery.

Nylon shrinks from flame and melts into a hard white or grey bead ash. Its fumes smell like boiling celery.

Polyester shrinks from flame and melts giving a slightly sweet or an aromatic smell. Its ash is a round, hard black bead.