Textile Fabrics

Fabrics are produced in one of three structural ways:

Woven – consisting of two sets of threads; the warp runs down the length of the cloth from north to south and the weft runs across the width of the cloth from left to right.

Knitted – formed by a series of interlocking loops of yarn and can be produced by warp or weft knitting.

Non-woven – the term used to describe any fabrics that have not been woven or knitted. Often these fabrics have been produced from a web of fibres, tangled and bonded together using mechanical, physical or chemical processes. Nonwoven fabrics would include plastic, rubber and felt but could also be applied to skins, like leather and suede.

It is important that you are able to clearly identify what type of fabric and what fibres you are working with, so you can use the most appropriate print processes effectively. These can be divided into the following groups:

Cellulose fibres are usually developed from plants. This group of fabrics includes cotton, linen, jute, bamboo, hessian, nettle, sisal, etc.

Reconstituted cellulose fibres are manmade fibres, developed to emulate the properties of those found in nature. This group of fabrics includes viscose, tencel, rayon, etc.

Protein fibres are usually developed from insect or animal. This group of fabrics includes silk (from the silkworm), wool, alpaca, angora, cashmere, camel, mohair, skins, etc.

Synthetic fibres are usually developed from oil products. This group of fabrics includes polyester, nylon, acetate, acrylic, elastane, etc.

Mixed fibres can include two or more of the groups listed above. This group of fabrics includes polycotton, silk viscose, silk linen, etc. Mixed fibre fabrics can have interesting results and create striking effects when cross dyed or devoré printed.

Burn Test Chart

If you are unsure of the fibre content of your fabrics a simple burn test can indicate what fibres are present. All burn tests must be carried out by holding a small test piece of fabric in a pair of tongs, over a heat proof mat, in a well ventilated area. A lighter will be provided for you by the technical demonstrator.

FIBRE	BURNS/ MELTS	BURNING RATE	FLAME	SMOKE	ASH OR RESIDUE	SMELL
NATURAL CELLULOSE						
COTTON	Burns.	Medium to slow. A crease resistant finish will burn more slowly.	Yellow, steady flame.	Grey.	Fine, soft feathery grey ash.	Burning paper.
LINEN	Burns.	Medium to slow. A crease resistant finish will burn more slowly.	Yellow, steady flame.	Grey.	Fine, soft feathery grey ash.	Burning paper.
NATURAL PROTEIN						
SILK	Burns.	Slow.	Irregular splutters.	Grey.	Brittle, spongey black/ brown, easily crushed ash.	Burnt hair.
WOOL	Burns.	Slow.	Irregular splutters.	Grey.	Brittle, spongey black/ brown, easily crushed ash.	Burnt hair.
MANMADE RECONSTITUTED						
VISCOSE	Burns.	Fast.	Yellow.	Grey.	Fine, soft feathery grey ash.	Burning paper.

CELLULOSE ACETATE	Melts.	Fairly slow.	Yellow.	Grey.	Crushable black bead.	Vinegar.
CELLULOSE TRIACETATE	Melts.	Fairly slow.	Yellow.	Grey.	Crushable black bead.	Vinegar.
MANMADE SYNTHETIC						
NYLON	Melts.	Quite fast.	Bright yellow.	Grey.	Hard uncrushable brown bead.	Cooked celery.
POLYESTER	Melts.	Quite fast.	Luminous yellow.	Grey.	Uncrushable black bead.	Aromatic quite sweet.
ACRYLIC	Melts.	Very fast.	Luminous yellow.	Black.	Irregular black bead.	Acrid, unpleasant.