

Common fabric abbreviations

PE	=	Polyester	NY	=	Nylon
PP	=	Polypropylene	RY	=	Ryton
NO	=	Nomex	P84	=	Polyimide
TF	=	Teflon	PA	=	Polyamide

Some fabric processes

- Scouring:** The fabric is passed through a hot water tank and steam chamber. This washes the fabric and induces shrinkage making the fabric shrink resistant in use.
- Heat setting:** The fabric is passed over a heated blanket. This relaxes the yarn in the fabric and makes it somewhat dimensionally stable in use. Dimensional stability is important so that fabrics resist changing shape (e.g. stretch) in use.
- Singeing:** The fabric is passed quickly over a gas flame, the surface fibres are melted resulting in a hard surface finish which aids cake release. Needlefelts are usually supplied singed as standard.
- Calendering:** The fabric is passed over a heated roller under many tonnes of pressure. The fabric surface is melted and smoothed to produce a surface glazed effect. Calendering provides for better cake release and reduces the air permeability of fabric.
- Coating:** Some fabrics are coated with A.F. (acrylic foam coating), for use where moisture can be a problem. M.R. (microporous surface) for use with fine dusts. PTFE laminate, for use where fine or sticky dusts cause problems with cake release. All coated fabrics will result in lower permeability.
- Foodcote™** A special surface coating which prevents fibre shedding without having filtration properties (FDA code 177.2260). It can only be applied to Kevlar, PA66STR, PP46K and VE45G
- Sparkstop™** This is a chemical impregnation which, when applied to a fabric, encapsulates the fibres and gives that fabric antistatic properties. It can be utilized in conjunction with Foodcote™

Some fabric processes

Antistatic fabrics:

A build-up of static electricity on the surface of filter media caused by friction between dust particles, can result in electronic discharge causing spark ignition of flammable powders.

To overcome this potentially explosive problem, conductive materials can be incorporated into the structure of the fabric, this inhibits electrostatic build-up and allows a continuous charge dissipation resulting in a filter media that is permanently antistatic.

Antistatic using carbon fibre (epitropic):

Carbon fibre is added to the needlefelt at the blending stages of manufacture. This ensures level distribution of the conductive carbon fibre. Generally 3% or 5% of carbon fibre is used.

Antistatic using stainless steel:

Stainless steel threads are woven into the fabric and pass through at equal distances. The metal threads dissipate build-up of static charge. This is often used in woven fabrics.

Antistatic using carbon impregnation:

Fine carbon particles are impregnated into the whole of the structure of the felt and fixed using special resins which are compatible with most textile materials.

Oleophobic treatment:

A chemical treatment applied to a dust collector bag in order to render the fabric water and oil repellent.

PTFE (Polytetrafluoroethylene):

A membrane added to a needlefelt in order to assist with the discharge of particularly sticky, troublesome or very fine dusts. This process treatment will increase differential pressure and is not suitable for use in some dust collectors without upgrading.

Fibre properties / fabric selection

Fibre	Generic name	Supports combustion	Recommended operating temp (°C)		Melting point (°C)	Chemical resistance		Hydrolysis	Tensile strength	Abrasion resistance
			Continuous dry	Dry surges		Acid	Alkaline			
Cotton	Natural cellulose	Yes	100	110	*	Poor	Excellent	N/A	Good	Fair
Nylon	Polyamide	Yes	110	125	255	Poor	V. good	Good	Excellent	Excellent
Polypropylene	Polyolefin	Yes	90	110	165	Excellent	Excellent	Excellent	Excellent	Good
Polyester	Polyester	Yes	150	180	260	Good	Fair	Poor	Excellent	V. good
Homopolymer Acrylic	Acrylic	Yes	130	150	*	V. good	Fair	Good	Fair	Fair
Teflon	Fluoro-carbon	No	260	280		Excellent	Excellent	Excellent	Fair	Fair
Nomex	Polyaramid	No	200	230	*	Fair	Excellent	Poor	V. good	V. good
Glass	Glass	No	260	300	600	Good	Poor	Excellent	Excellent	V. good
Ryton	Sulphur	No	190	230	285	V. good	Excellent	Excellent	V. good	Good
P84	Polyimide	No	260	280	*	Excellent	Fair	Good	Good	Good

* The fibres do not melt, but decompose at elevated temperatures beyond their maximums