

Thermofax Screens

Choosing Print Media

Thermofax Screens can be used with a wide variety of media but whichever medium you decide to use, it should have a mayonnaise-like consistency (ie soft enough to pass easily through the screen mesh but thick enough to prevent running or bleeding). It should also be washable with water (ie no solvents).

The media can be grouped into three main categories:

- **Textile inks/fabric paints** - suitable for most surfaces and usually supplied ready to use so very convenient. N.B. textile screen ink is another name for fabric paints that have already been formulated for printing.
- **Thickened fibre-reactive dyes** - MX type, suitable for natural fabrics except wool. Some pre-preparation is required and fabric also needs to be soda-soaked before printing and batched and rinsed after printing as for other types of dyeing.
- **Special effect media** eg. discharge paste (colour removal), Fibre-Etch (devoré), PVA/fabric size (metal leaf) Matte Medium (paper lamination).

The following notes are guidelines only. Always check the manufacturer's specific instructions for curing / drying / fixing etc and for any health and safety precautions you may need to take.

Textile Screen Inks and Fabric Paints:

- Water based textile screen inks, such as those available from ThermoFax Screens, are very convenient and require no preparation as they are used straight from the jar. They are suitable for use on most fabrics, man-made and natural (N.B. do not use on fabric that has been soda soaked for dyeing). ThermoFax Screens textile screen inks can also be used to print on paper - handmade and watercolour papers are very successful but avoid very shiny paper.
- Many fabric paints are also suitable for thermofax printing though some of them eg Pebeo Setacolor will need to be thickened with a proprietary thickener to make them the right consistency for printing.
- Acrylic paints are formulated to dry very quickly and, if left to dry in the mesh, will permanently block the screen so use with caution. Adding textile medium will help but wash the screens frequently to avoid damage.
- ThermoFax Screens textile screen inks can be mixed to create a whole rainbow of colours. Be cautious when mixing inks or paints from different brands – some do not 'go' together and will curdle. Always test first!
- ThermoFax Screens textile screen inks are highly pigmented so the colours are strong and bright. Lighter or more transparent colours can be achieved by adding Transparent Extender Base. If you are using other brands, always match the brand of extender base to the brand of textile ink for best results.
- Pearlescent inks, such as those from ThermoFax Screens, are fairly opaque – this is because the mica that creates the sparkles increases the opacity. They can be mixed with transparent extender base to create semi-sheer colours. Avoid metallic paints with glitter or flakes as they will damage the mesh.
- Textile screen inks and fabric paints may stiffen the fabric, particularly if they are thickly applied or if there are several layers of printing. The finished result will vary from brand to brand. The transparent inks from ThermoFax Screens have been specially chosen because they have a minimal effect on the hand of the fabric. Opaque and pearlescent inks will stiffen the fabric more than transparent inks.
- Several layers of screen ink or fabric paint can be applied before heat-setting. If you are using pearlescent inks, apply them as the final layer.
- After printing with textile screen inks or fabric paint, the fabric should generally be air-cured for 24 hours or more and then heat set with a dry iron (set the temperature to suit the type of fabric). A pressing cloth or baking parchment will protect the surface (this is particularly useful for opaque and pearlescent inks). Take your time with the heat setting! It will take about 10-15 minutes to heat set about 1 metre of fabric. Iron the front and the back of the cloth. If the cloth is to be used for clothing / quilts etc it may be washed after heat setting (up to 40°C) but this can be omitted if the finished item will never be washed.

Thickened Fibre-reactive Procion MX Dyes:

- Procion MX Dyes can only be used on natural cellulose fabrics eg cotton, linen, viscose, rayon, silk/linen, silk/cotton and silk/viscose.
- Wash / scour fabrics before dyeing. Fabrics labelled PFD (prepared for dyeing) will still benefit from washing.
- Procion MX dyes need to be thickened to make them a suitable consistency for printing. A print paste made from Manutex must be prepared at least a couple of hours ahead of time. The dye is added to the prepared print paste before use – see basic recipe on page 2.
- Procion MX dyes are fixed by Soda Ash and the best way to deal with this is to soda-soak and dry the fabric prior to printing (if the soda ash is added to the dye it will significantly reduce the life of the thickened dye paste).
- After printing with thickened dye paste, the fabric needs to be 'cured' for 4-24 hours in a warm place. Roll the semi-dry fabric in plastic and put it beneath a radiator or in an airing cupboard.
- After curing, rinse fabric thoroughly. First, give the fabric a cold rinse by hand with a little Synthrapol / Metapex 38, then machine wash with a cold-water rinse once or twice and finally machine wash with warm-water.
- If you are planning several layers of printing, the (pre) soda-soaking and the (post) curing and rinsing must be done for each layer of printing.

Please note: this is a BASIC RECIPE for thickened fibre-reactive dye paste for use on cellulose fabrics. However, there is more to printing with dyes than can be included here – comprehensive instructions and inspirational photographs can be found in the book <i>Thermofax Printing</i> by Claire Benn and Leslie Morgan.	
Soda Ash solution for 2-3m of fabric	Dissolve 5 tabs Soda Ash in a little hot water and then top up to 2 litres with cold water. Soak the fabric for 20-30 minutes, then wring out or spin and line dry. If you are adding soda to the dye mixture there is no need to soda-soak.
How to thicken the dyes for printing	<p>Step 1 - make up a thin 'chemical water' with 70g Urea per litre of water. This can be used as it is but for better colours, add 5 ml of Ludigol per litre if you live in an area of high pollution and 5ml Calgon per litre if you live in a hard water area. Thin chemical water will keep indefinitely.</p> <p>Step 2 - add 30g of Manutex (Sodium Alginate) per 1 litre of thin chemical water and mix vigorously - an old magimix or hand-held electric mixer (ie one that is no longer used for food preparation) will make this job much easier. When thoroughly mixed, leave in a cool place for 2 hours or overnight to thicken. It should be the consistency of very thick honey. If it is not thick enough add a little more Manutex, re-mix and leave for 2 hours. If it is too thick, you can dilute it with thin chemical water. Thick chemical paste will keep for 4-6 weeks.</p> <p>Step 3 - pour a small amount of thin chemical water into a suitably sized container, add the required amount of dye powder and mix to a runny paste.</p> <p>Step 4 - mix the dye and half the desired amount of print paste together and mix thoroughly. Add the other half of the print paste and mix again.</p>

Special effect media:

Discharge paste (for colour removal):

- Jacquard Discharge Paste is a ready-to-use paste suitable for printing onto cotton, silk, linen and viscose.
- You can also make a discharge paste by mixing formosol with manutex print paste. Dissolve 50g formosol powder in a little warm water and then mix well with 500ml print paste (to make this follow step 1 and 2 of the basic recipe above but do not add dye). Store formosol paste in a cool place or fridge.
- Discharge paste is activated by steam ironing. Jacquard Discharge paste should be activated soon after printing (while still damp for best results). Formosol discharge paste can be left to dry after printing before activating. Set the iron to maximum steam and 'pat' the iron over the area until the colour starts to disappear. You can then apply more pressure to maximise the discharge effect.
- Discharge paste will remove colour from most Procion MX dyed fabrics (though turquoise can be stubborn) and some commercially dyed fabrics – test first. Colour removal may not be complete and some fabrics will discharge to peach or beige. Experiment – unexpected results can be very exciting!
- Wash fabric after discharging. The fabric is then ready to use or you add more colour by printing or over dyeing.

Fibre-Etch (for devoré effects):

- Fibre-Etch gel removes the cellulose component from mixed fibres such as silk-viscose velvet or silk viscose satin to achieve a devoré effect. Follow the manufacturer's instructions and print with the thermofax screen.

PVA glue or Fabric Size (for metal leaf application) and Matte Medium (for paper lamination):

- Wash screens frequently if using glue, size or matte medium to prevent the media drying in the mesh.
- If using glue or size for metal leaf, work in small sections and allow to dry until 'tacky' before applying the metal leaf. Lay a piece of metal leaf over the glue/size and use a soft brush to press gently onto the glue/size. Brush excess leaf away. Cover with baking parchment and press with a dry iron to ensure good adhesion.
- Matte medium can be printed through a thermofax screen for paper lamination processes. Full details of this can be found in the book *Paper & Metal Leaf Lamination* by Claire Benn, Leslie Morgan and Jane Dunnewold.

Suppliers

Thermofax Screens - www.thermofaxscreens.co.uk - info@thermofaxscreens.co.uk - Foxley Farm, Foxley, Towcester, Northamptonshire NN12 8HP UK - for ready-made screens, custom screens made from your own designs, textile screen inks, lightweight squeegees, books etc.

Kemtex Educational Supplies Ltd. - www.kemtex.co.uk - Chorley Business & Technology Centre, Euxton Lane, Chorley, Lancashire PR7 6TE - 01257 230220 - for Procion MX dyes, Manutex, Soda Ash, Ludigol, Urea, Synthrapol / Metapex 38 etc)

Fibrecrafts - www.fibrecrafts.com - Old Portsmouth Road, Peasmarsh, Guildford, Surrey GU3 1LZ - 01483 565800 - for Procion MX dyes etc, Speedball inks, Pebeo Setacolor and other paints, Jacquard Discharge Paste, Fibre-Etch etc)

Art Van Go - www.artvango.co.uk - The Studios, 1 Stevenage Road, Knebworth, Hertfordshire SG3 6AN - 01438 814946 - for some of the above plus Jacquard Professional Quality Screen Printing Inks and also for metal leaf, glues etc.