

Textile Screen

Inks

AQUATEX AT

Water based opaque textile ink free from PVC and Phthalate, designed for direct wet-on wet printing on a wide range of natural and synthetic fabrics.

Features

- Oeko-Tex ® Standard 100 Compliance
- Formulated free from PVC and Phthalate
- Tributyl Tin (TBT), Dibutyl tin (DBT), AZO and heavy metal within restrictions.
- Solvent Free and very low odour.
- Excellent elasticity and free from cracks on stretchable fabrics
- Excellent Screen stability.
- Soft handle, non bleeding
- Good resistance against dry and wet friction.
- Excellent wash and Rub resistance.
- Opaque Standard shades for printing on dark colour fabric
- Colour concentrations for colour preparations



**TEST INKS ON SUBSTRATES
BEFORE PRODUCTION RUN**

SERICOL
More than ink... Solutions.
FUJIFILM

Thinning & Washing

Supplied press-ready if necessary, thin up to 5% water (distilled or DM water).

Hot shop conditions: use up to 3% AT-591.

Wash up with water, dried ink may be washed out with universal screen wash SS 639.

Mesh

AT Standard Opaque/Metallic colours: Monofilament 43-55/cm.

Stencil Type

Should be water resistant.

Recommend: Dirasol 25, Supertex or 916. For optimum stencil life, each can be treated with Sericure Stencil Waterproofing Agent.

Fabrics

Cotton, Cotton polyester blends and some synthetic fabrics.

Applications

Most knitted and woven fabrics typically used for T-shirts, Sweat Shirts, Sports and Fashion Wear, Badges, Hats and Caps, Travel Bags, Footwear.

IMPORTANT:

Stir well before every use. Users should satisfy themselves that Aquatex AT is compatible with specific textiles and that rub, stretchability and other resistance properties are acceptable before commencing production runs.

Curing Information:

It is essential that the entire thickness of the ink film has time to reach the full cure temperature of 160°C to 170°C (on fabric) for 3 to 4 minutes. or resistance properties, such as wash & rub fastness, will not be achieved.

Evaluate your cure schedule by testing the print at the wash schedule that it will ultimately be expected to pass. It is recommended that cure temperature is confirmed with the use of thermal testing strips.

Factors such as ink film thickness and colour, drying equipment and fabric all influences the cure schedule needed. In most cases the oven temperature will need to be set higher than 170°C for the ink to reach full cure in a time of 3-4 minutes so that during continuous production run the cure temperature minimum 160°C will reach on the garment and the print should be allowed to be cured for 3-4 minutes.

Flash curing

The temperature must reach 120C to 130C on fabric and under optimum conditions; dwell times of less than 6 seconds can be readily achieved. However the ink should be touch dry after flash station and time and temperature must be adjusted accordingly. Many factors affect the dwell time required for flash curing. These include the type and wavelength of the equipment used and the distance between the curing unit and the print. Additional factors such as fabric and ink colour, film weight and coverage are also crucial.

Optimum Flash Time & Temperature can be adjusted as per the job requirement.

Fusing

Temperature at 160C to 170C for 5 to 7 seconds with optimum pressure. Use TRB 08 or TRB 28 transfer paper only.

Fastness

Aquatex AT has good wash fastness to ISO Test No's 1 (40 C), 2 (50 C) and 3 (60 C) Prints may be ironed from the back of the fabric at a cool setting, with a cloth over the printed area. Prints will not resist dry-cleaning and garments should be marked to this effect.

SPECIAL NOTE:

It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

Aquatex AT, a PVC/Phthalate free water based ink is developed to meet the demand for more environmentally friendly print jobs. The following information will enable optimum results to be obtained with Aquatex AT. To give guidance the table below compares some of the basic characteristics of AT.

	Aquatex AT
Heat Stability	3 to 4
Wet on Wet Printing	3
Wet Rub	4
Dry Rub	3
Wash Fastness	3
Print Handle	3
Elasticity	3
Cure Temperature	160°C to 170°C

Key: 4 = Excellent, 3 = Very Good, 2 = Good

Screen Stability

For a water- based ink, Aquatex AT has excellent screen stability. However, to avoid ink drying on screen, which is due to heat generated during long print run it is always advised to keep screen flooded with ink.

No of Print Strokes

The number of strokes for manual printing or machine printing will be decided based on the type of fabric colour and print design requirement, 4+4 strokes are recommended on to the dark fabric to achieve good print. In case of machine printing, Extender base AT-381 (for light fabrics) opaque base -AT-403 or AT-021 (Dark Fabric) can be used as a ground coat base to reduce the number of strokes of colours. Preferably 2+2 strokes are recommended to achieve good print quality.

The higher the ink deposit better the print appearance, good resistance to wash and also improves the fabric stretch without print breakage. It is recommended to use AT-381, AT-403 or AT-021 as a ground base with 2 to 4 strokes to achieve excellent wash resistance. Flash cure is required for printing after base first colour and before last colour. The flash cure requirement is decided as per the type of design. Before Printing Pallets have to be heated

Wet on Wet Printing / Flash Curing

Aquatex AT standard colours can be printed wet-on-wet. Printers should expect more build up during multi-colour printing. AT inks are very fast flash curing, although their heat sensitivity means that high ambient temperatures or excessive heat from multiple flash-cure units can cause the inks to start to cure in the screen.

Metallic colours are not recommended for wet-on-wet printing.

Colour Matches

It should be noted that the combination of high wash temperatures and strong detergents can cause colour changes in some colour matches, particularly when very small additions of a base colour are added. For example, pastel shades can change colour as the trace additions of base colours are affected in harsh wash cycles. For this reason, it is essential that all formulations are proofed prior to production to ensure wash fastness properties are acceptable.

Wet/Dry Rub

Wet rub & dry rub fastness of AT prints is very good. The Grey Scale grade will vary from colour to colour, but the dry rub and wet rub can be improved by adding 5% **AT-590 Fixing Agent** in the ink system. Care should be taken that AT-590 should be added to small quantities of AT inks which will be consumed for a particular Job in a shift. The remaining ink should be scrapped and not stored.

Note: High street stores and garment/sportswear manufacturers will generally have their own levels for acceptable rub fastness. Printers must carry out their own tests to satisfy themselves that the rub levels will meet fully with their end users requirements.

Print Handle

The Print handle of the AT inks are good, to further improve the print handle, a base coat of Printing through 43-55 T mesh will help to improve the handle of a print.

The addition of up to 15% of AT-381 base will also help to soften the feel of the finished print. The ratio of Extender base will depend on the end users requirements and what they perceive as acceptable handle.

Note: There will be loss of colour strength / opacity with high additions of extender base.

Elasticity

The elasticity of Aquatex AT is good to enhance the elasticity of the final print, a under base (AT-381 Aquatex AT extender Base) can be printed through a 43-55 mesh. Print 4 layers to ensure a smooth finish for the flash white and colours.

Fibrillation

Fibrillation occurs when fibres from the garment break through the ink film during a wash cycle to give a faded appearance. While fibrillation has the look of poor wash fastness it is not caused by the loss of ink; it occurs even with fully cured prints. There are several methods like below to minimise fibrillation.

- 1) Increased ink film weight
- 2) Use of AT-381 as a base coat.
- 3) Use of AT-403, AT-021 white as a base coat.

As demand for low handle/low film weight prints increases, so does the likelihood of fibrillation. The complex relationship of ink, print and fabric reinforces the need to wash test-prints to customer requirements prior to production.

Squeegee

Squeegee requirements will vary according to each design. To get the best results from Aquatex AT, we recommend triple durometer squeegees, as they are able to shear the ink more effectively than conventional squeegees. For the AT-021 white we recommend a 75/95/75 green squeegee, as this will provide a good base white to print on. For the colours use 65/95/65 squeegee or 75/95/75 dependant on the level of detail required.

Important: The Aquatex AT range has been developed free from PVC/Phthalates.

However in addition users must be aware of potential sources of contamination such as squeegees, flood coaters, screens and curing equipment, which may all contribute trace amounts of phthalate and PVC from previous use with other plastisols.

Storage Stability

The combination of raw materials used in Aquatex AT is not as stable or tolerant of elevated temperatures (>40°C) during long transportation over sea, long storage. The ink may appear thick over time (often referred to as a false gel) this false gel can normally be broken down by hand mixing with spatula for 5 minutes.

Inks that have been used on press in very hot conditions, such as multiple flash cure prints, should not be returned to the container containing fresh ink.

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Avoid prolonged mechanical shaking as it can generate high levels of heat.

Ink Range

Seritone & Line Colours

AT-001	Black
AT-021	White
AT-025	Extra Opaque White
AT-042	Seritone Yellow (Green Shade)
AT-043	Seritone Yellow (Red Shade)
AT-101	Light Orange
AT-162	Seritone Orange
AT-134	Seritone Red (Yellow Shade)
AT-124	Seritone Red (Blue Shade)
AT-203	Seritone Blue
AT-206	Seritone Blue (Red Shade)
AT-207	Navy Blue
AT-166	Seritone Violet
AT-285	Seritone Green
AT-165	Seritone Magenta
AT-403	Opaque Base
AT-381	Extender Base

Trichromatic Colours

AT-058	Trichromatic Yellow
AT-215	Trichromatic Cyan
AT-135	Trichromatic Magenta
AT-004	Trichromatic Black

Fluorescent Colours

AT-077	Fluorescent Yellow
AT-119	Fluorescent Orange
AT-179	Fluorescent Red
AT-180	Fluorescent Magenta
AT-294	Fluorescent Green

Speciality Inks

AT-475	Metallic Gold
AT-476	Metallic Silver
AT-397	Glitter Base
AT-404	Stretchable Base
AT-421	Foil Transfer Adhesive
AT-410	Dye Blocking Base
AT-432	Clear Base
AT-417	Expanding Base
AT-635	Medium Base
AT-366	Matting Additive
AT-590	Fixing Agent

Thinner

AT-591	Thinner
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(S) = Seritone Base Colour

Available in 1kg and 5kg containers

AT-591 & AT-590 available in 1 Kg container.

AT-397- Glitter Base:

Glitter powder can be mixed in the AT-397 and print using mesh 29-34 T mesh. Glitter powders bind well in the AT-397.

The number of strokes will depend on the type of the Job. It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-404-Stretchable Base:

AT-404 is used as a base on stretchable garments like Lycra and Rib.

Mesh : 43T to 55T can be used.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

The number of strokes will depend on the type of the Job. It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-421 Foil Transfer Adhesive:

1. Use 43/55 threads/cm/Nylon or polyester mesh.
2. Print AT-421 Foil Transfer Adhesive, 4 strokes and flash cure.
3. Use Transfer paper as a backup on file.
4. Fusing temperature 160°C to 170°C with the optimum pressure for 5 to 7 seconds.

AT-410 Grey dye Blocking Base:

Some Fabrics which are blended like 60:40 cotton polyester blend; will tend to bleed the dye from the fabric on to the prints. Dye bleed is more observed when light colours are printed. AT-410 is a grey blocking base which should be used as an undercoat and the colours should be printed on the top of the AT-410 Grey dye blocking base which will then block the dye migrating from the fabric to reach the surface of the print.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

The number of strokes will depend on the type of the Job. It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-432 Clear Base:

AT-432 is clear base in which you can add pigment dispersion and print on light coloured garments to get a good hand feel. Mesh : 43T to 55T can be used.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

The number of strokes will depend on the type of the Job. It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-417 Puff Additive:

This can be used to get a puff effect on the garments. you can add 10% to 15% in the AT-colours to get the required puff effect Mesh : 43T to 55T can be used.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

The number of strokes will depend on the type of the Job. It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-635 Medium Base:

AT-635 is a medium base which helps to improve the wash fastness and the crock tests. AT-635 should be added in the ink around 10% to 15% to get the desired results.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-366 Matting Additive:

AT-366 is a matting additive which when added around 3 to 5% in the AT colours will matt the ink.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

AT-590 Fixer:

AT-590 improves the crock and wash fastness. AT-590 should be added around 5 % in the ink system.

The curing temperature will be the same as mentioned earlier 160°C to 170°C (on fabric) for 3 to 4 minutes.

It is essential that all the jobs are proofed prior to production to ensure wash fastness properties are acceptable.

Ancillary Products

During printing, fabrics have to be held on the table by means of a pressure sensitive adhesive to obtain good definition of print. Flash Fix and T-Fix Spray Adhesives are recommended for this purpose. (See relevant product information sheets).

Storage

1. Keep inks cool place, away from direct sunlight.
2. Keep lids tightly closed when not in use
3. Any unused ink should not be returned to the can, must be stored separately.
5. Stir well before use.

Safety and Handling

Aquatex AT:

- Is formulated free from phthalate plasticisers and PVC.
- Is formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or reprotoxic.
- Is formulated free from lead and other heavy metals.
- Should be stored in below 40°C in a sealed container.

Environmental Information

Aquatex AT:

- Does not contain ozone-depleting chemicals as described in the Montreal Convention.
- Is formulated free from aromatic hydrocarbons, which are known to have an adverse effect on the environment.
- Is free of any volatile solvent and is therefore beneficial to the environment when compared to solvent-based products.

Fujifilm Sericol appreciates the importance of protecting printers and brand names, particularly in the light of ongoing attention from environmental lobby groups such as Green peace, as a result we offer Global Brands an Assurance programme to provide maximum support. Some simple guidelines need to be adhered to without compromise:

To avoid PVC and Phthalate contamination, end user must ensure the following:

- Use of Spatulas, Screens, containers, squeezes must be identified and not be used for PVC/Phthalate inks.
- Printers Hand gloves or hands must be clean and free from PVC/Phthalate inks.
- Do not store AT inks in the same place of Plastisol inks which are based on PVC/Phthalate inks.
- Ideally Print area for AT inks must be in different location than plastisol printing.
- Do not mix AT inks printed garments/Fabrics with plastisol prints.
- Do not use emulsions other than Fujifilm Sericol recommended for screen making.
- Use only Fujifilm Sericol recommended transfer paper for fusing. Use only Fujifilm Sericol recommended Flash Fix.

Important Note to Printers:

Responsibility for ensuring that the goods processed with our product meet the requirements of labels/brands/agencies/ rests solely with the processors.

Important Note:

The information and recommendations contained in this product information sheet as well as technical advice otherwise given by representative of our company, whether verbally or in writing, are based on our present knowledge and experience. Such information/ technical advice is given in good faith, but without warranty, in view of the many factors that may affect processes or applications as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary.

For the same reason our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that the products will meet fully the particular requirements of the labels/ brands/ agencies of their clients and also that no proprietary rights and existing laws and legislation are violated.

Our advice does not relieve processors from the responsibility of carrying out their own tests and experiments, nor does it imply any legally binding assurance in respect of properties or suitability for a specific purpose or of the legal status of the listed products.

Our policy of continuous product improvement might make some of the information contained in this product information sheet out of date and users are requested to ensure that they follow current recommendations.

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