Pioneer Ultra YC PVC Free Phthalate Compliant[1] Plastisol Inks

PART OF THE TEXOPAQUE SERIES OF INKS

Pioneer Ultra YC is a range of maximum opacity, plastisol inks designed for printing most natural and synthetic fabrics. Pioneer Ultra YC inks are formulated to be free from PVC and to be phthalate compliant[1]. The Texopaque Series also includes Texopaque Classic OP, a conventional plastisol and Advantage ON, a phthalate compliant plastisol (see the respective product information sheets for details).

Curing Information

Pioneer Ultra YC inks must be heat cured at a minimum of 150°C to achieve full wash fastness. Differences in film weight, drying equipment and fabric will greatly affect the dwell time required, but 2–3 minutes is typical. Time will vary dependant on colour, with dark colours generally requiring a shorter time than light colours.

It is essential that the entire thickness of the ink film has time to reach the full cure temperature of 150°C in order that resistance properties such as wash and rub fastness are maximised. 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 a temperature probe. Factors such as ink film thickness and colour, drying equipment and fabric all influence the cure schedule needed. In most cases the drier temperature will need to be set higher than 150°C for the ink to reach full cure in a time of 2-3 minutes.

Flash curing

Under optimum conditions, dwell times of less than 5 seconds can be readily achieved. YC757 Pioneer Flash Cure White should be used. 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 should be adjusted as the conditions require.

Fastness

Pioneer Ultra YC has good wash fastness to ISO Test Numbers 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.

Resistance Properties

Pioneer Ultra YC inks are formulated to have good handle, wet/dry rub resistance and wash fastness. These properties can be improved still further by overprinting with a layer of Pioneer Ultra YC433 Overprint Transparent Base.

Main Characteristics

Properties
Pioneer Ultra YC is a plastisol ink that is formulated to be phthalate compliant and is formulated without PVC. Lead-free. Good wet-on-wet printability and wash resistance. Unlimited screen stability.

Applications
Most knitted and woven fabrics typically used for T-shirts, sweat shirts, sports and fashion wear, badges, hats and caps, travel bags, footwear.

Fabrics
Suitable on most common natural and synthetic fibres including cotton and cotton/polyester blends together with many grades of synthetics.

Curing
The ink film must reach a minimum of 150°C.

Thinning
Supplied press-ready. Up to 5% YC591 thinner may be added to increase flow.

Wash-Up
Wash up with ZT639 Screen Wash Universal, ZS640 Tursub or Actisol Superjet Screen Spray.

Mesh
Monofilament 34-100

Stencil Type
Most direct stencil materials are suitable.
Recommended: Dirasol SuperTex or Dirasol 125

Coverage & Mesh No.
12-16m²/ltr. No 43 monofilament.

Intermixing and Compatibility with Other Inks
Pioneer Ultra YC should not be mixed with other inks.

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

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 and can occur even with fully cured prints. There are several techniques that can minimise fibrillation including the following:

1) Increased ink film weight
2) Use of flash-cure white as a base coat.
3) Use of YC 381 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.

Wet on Wet Printing / Flash Curing

Pioneer Ultra YC colours can be printed wet-on-wet with results close to that obtained with Texopaque Classic OP and Advantage ON. Build up can occur when multi-colour printing especially in hot shop conditions. Pioneer Ultra YC inks are very fast flash curing, and care should be taken to avoid excessive heat including heat from flash cure units as this can cause the inks to thicken or cure in the screen. Fluorescent and metallic colours are not recommended for wet-on-wet printing.

Print Handle

Printing through fine meshes such as 77 to 90 will help to improve the handle of a print, as less ink is deposited onto the garment. The addition of up to 30% of YC381 base will also help to soften the feel of the finished print. The amount of extender base used will depend on the end users requirements and it is recommended that tests are carried out before starting a production run.

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

Colour Range

Pioneer Ultra YC

YC001	Black
YC021	White
YC042 (S)	Seritone Yellow (Green Shade)/Light Chrome
YC043 (S)	Seritone Yellow (Red Shade)/Mid Chrome
YC162 (S)	Seritone Orange/Light Red
YC134 (S)	Seritone Red (Yellow Shade)/Red
YC124 (S)	Seritone Red (Blue Shade)/Deep Red
YC203 (S)	Seritone Blue/Mid Blue
YC206 (S)	Seritone Blue (Red Shade)/Deep Blue
YC210	Ultra Blue
YC165 (S)	Seritone Magenta
YC166 (S)	Seritone Violet
YC285 (S)	Seritone Green/Deep Green
YC381	Extender Base
YC441	High Density Clear
YC433	Overprint Transparent Base
YC757	Pioneer Flash Cure White
YC417	Expanding Base

(S) = Seritone Base Colour

Available in 5kg containers

Thinner/Reducer

YC591	Pioneer Ultra YC Thinner

Available in 1kg containers

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 Extra Spray Adhesives are recommended for this purpose. (See relevant product information sheets).

Fujifilm Speciality Ink Systems Limited:

- Has certification to the International Environmental Standard, ISO 14001
- Is committed to minimising the risk to users of our products, and also to minimising the impact of our activities on the environment, from formulation through to production and supply.
- Research & development team, work to an in house Health, Safety and Environmental policy, termed 'Design for Health, Safety and Environment', with the aim of proactively developing products with the least impact on health, safety and the environment.
- Regularly review and monitor our impacts and activities, setting objectives and targets as part of a continual improvement process.
- Is committed to reducing waste through better use of raw materials, energy, water, re-use and recycling.

Health and Safety Information

Pioneer Ultra YC

- Is formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or reprotoxic according to Directive 67/548/EC.
- Has a flashpoint greater than 55°C and is therefore not classified as a "dangerous substance" under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).
- Is not routinely tested, but is formulated to comply with the EN71-3 1995 Toy Safety Standard.
- For optimum shelf life, all products should be stored at moderate temperatures, between 5°C and 30°C. Storage outside of these temperatures may lead to deterioration in the performance of the product.

Comprehensive information on the safety and handling of Pioneer Ultra YC inks, solvents and associated products is given in the appropriate Safety Data Sheets.

Environmental Information

Pioneer Ultra YC

- Does not contain ozone depleting chemicals as described in the Montreal Convention.
- Is formulated free from aromatic hydrocarbons.
- Is free of any volatile solvent and can therefore be considered to have less impact on the environment, when compared with solvent-based products.

Important: The Pioneer Ultra YC range has been developed not to contain phthalates restricted for use by Council Directive 76/769/EEC (as amended). However the possibility for low level contamination during the manufacturing process exists. 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 restricted phthalate materials from previous use with other plastisols.

[1] Phthalate Compliant means that the products listed in this Product Information Sheet are formulated not to contain the Phthalates restricted for use by Council Directive 76/769/EEC (as amended).

The information and recommendations contained in this Product Information sheet, as well as technical advice otherwise given by representatives of Fujifilm Speciality Ink Systems Limited and its associated companies, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given 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 they will meet fully their particular requirements. 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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