

## Aquaspeed Water-based UV Curing Screen Inks (Patent Pending)

### DISPLAY VQ – DISPLAY YZ – ULTRA FLASH LZ – FLUTE FZ

Aquaspeed comprises four ranges of inks, utilising Sericol's pioneering water-based technology, for the highest possible print quality.

#### 1. Display VQ / Display YZ

Display VQ and Display YZ are low water content trichromatic inks developed for use on Paper, Board and PVC substrates.

They give excellent colour consistency on long print runs compared to other water-based UV inks.

Display VQ is a high gel product while Display YZ is a low gel.

#### 2. Ultra Flash LZ

A flash-cure trichromatic set for multicolour machine production of the highest quality PoP and Display work on board and heavy grade paper. Fast cure to a scuff resistant finish.

Suitable for double-sided work.

**NB: As last colour down, Ultra Flash Black LZ004 is designed for continuous cure only.**

#### 3. Flute FZ

Line colours comprising the Seritone Matching System plus a four-colour set for low-build printing of line and tone work onto corrugated board. Designed to be flash cured.

### Curing Information

The curing information quoted is typical for modern UV dryers.

Actual curing rates depend on a number of factors including ink film thickness, opacity, the number and type of lamps used (including lamp emission spectrum, power and efficiency) and the stock being printed. Care should be taken to ensure that each colour is cured correctly to achieve optimum adhesion to substrate and subsequent overprint adhesion.

### IMPORTANT

**Stir well before every use. Full intercoat adhesion may not develop until 24 hours after printing and compatibility of combined systems must be evaluated under actual production. Due to the nature of flash-cure technology only the last colour is conventionally cured. Therefore, cure and adhesion of all colours must be assessed prior to a run.**

### Outdoor Use

Aquaspeed inks are not recommended for outdoor use.

### Seritone Matching System - Flute FZ

The system consists of nine colours, each of which has been selected for its cleanliness of tone and suitability for intermixing.

FZ001 Black and FZ021 White are suitable for both colour matching and as printing colours.

Using the Seritone base colours plus black, white and extender base almost any colour can be produced.

**Universal Tinters must not be used with these inks.**

### Main Characteristics

#### Finish

Display VQ / Display YZ	Satin
Ultra Flash LZ:	Satin
Flute FZ:	Gloss

#### Curing

Continuous: 30-40 m/min through No. 150.34 PW mesh and dryer with one 80 watt/cm lamp. NB: Ultra Flash LZ and Flute FZ require 2 x 80 watt/cm lamps to achieve final cure and same speed and full through cure of all colours when printing using flash cure equipment.

#### Thinning

**Display VQ / Display YZ:** Up to 5% ZE818 or water.

**Ultra Flash LZ, Flute FZ:** Up to 10% water or ZE807. ZE807 will reduce viscosity more efficiently than water and minimise stock distortion.

**Ultra Flash LZ Black should not be thinned with water.**

#### Wash-up

Xtend Screen Cleaner (See Xtend Screen Cleaner Product Information Sheet).

#### Mesh

No. 150.34 PW (plain weave)

If coarser meshes are used, cure speed may decrease.

#### Stencil Type

Water/solvent resistant.

#### Recommended:

Contact exposure, 15 micron capillary film,

Dirasol 916 Diazo-Photopolymer Emulsion.

Direct projection x10 magnification use Dirasol SW10,

x5 use Dirasol SuperPro

*If using emulsions, a 4 microns build on the underside of the mesh will give best results.*

#### Coverage

through No 150.34 PW mesh

Display VQ/YZ 83-93m<sup>2</sup>/kg (90-100m<sup>2</sup>/ltr)

Ultra Flash LZ 68-77m<sup>2</sup>/kg (75-85m<sup>2</sup>/ltr)

Flute FZ 68-77m<sup>2</sup>/kg (75-85m<sup>2</sup>/ltr)

#### Co-use with Other Inks

**Ultra Flash LZ** must not be printed over any other ink or varnish.

They may be overprinted by Flute FZ, Coolstar OT, Uvispeed Gloss UX and Satin UH.

**Flute FZ** must not be overprinted with any other ink or varnish.

May be overvarnished with Uvibond UV454.

For all other Aquaspeed products, Uvibond UV383 or UV400

Varnishes are recommended (see Information Sheet 'Uvibond UV Ultra-violet Curing Overprint Varnishes').

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## Ghost Images

The blend of photo initiators used in inks like Display YZ and VQ can react with the optical brightener in some boards and lead to a yellow ghost image on the reverse side of prints. This can cause problems on double sided work. (Photo initiator from the print migrates to the board above. The yellow ghost image appears when the reverse side is printed and exposed to UV curing.)

The photo initiator package used in Display YZ has been chosen to minimise this phenomena, but it cannot be entirely eliminated.

Customers should be advised to be aware of potential problems.

Aquaspeed trichromatic inks are based on DIN 16538/9 (BS 4160/4666) colour standards.

## Display VQ/Display YZ

VQ 052/YZ 052	Trichromatic Yellow
VQ 135/YZ 135	Trichromatic Magenta
VQ 215/YZ 215	Trichromatic Cyan
VQ 004/YZ 004	Trichromatic Black
VQ 396/YZ 396	Trichromatic Extender Base

Available in 10kg containers.

## Ultra Flash LZ

LZ052	Trichromatic Yellow
LZ135	Trichromatic Magenta
LZ215	Trichromatic Cyan
LZ004	Trichromatic Black
LZ396	Trichromatic Extender Base
LZ001	Keyline Black

Available in 10 kg containers.

## Flute FZ

FZ001	Black
FZ021	White
FZ064 (s)	Seritone Yellow (Green Shade)
FZ066 (s)	Seritone Yellow (Red Shade)
FZ114 (s)	Seritone Orange
FZ121 (s)	Seritone Red (Yellow Shade)
FZ164 (s)	Seritone Red (Blue Shade)
FZ165 (s)	Seritone Magenta
FZ127 (s)	Seritone Violet
FZ230 (s)	Seritone Blue
FZ325 (s)	Seritone Green
FZ381	Extender Base
FZ052	Trichromatic Yellow
FZ135	Trichromatic Magenta
FZ215	Trichromatic Cyan
FZ004	Trichromatic Black
FZ396	Trichromatic Extender Base

(s) = Seritone Base Colours

Available in 10 kg containers.

## Reducers

ZE807	Thinner for LZ,FZ
ZE813	Thinner for KU only
ZE 818	Thinner for Display VQ/Display YZ

Available in 5 and 1 ltr containers.

## Storage

Containers should be tightly closed immediately after use. At the end of long print runs, surplus ink from the screen should be disposed of. Aquaspeed inks are exempt from the Highly Flammable Liquid and Liquefied Petroleum Gases Regulations 1972.

Aquaspeed should not be stored in direct sunlight or near sources of heat, and should be kept away from peroxides.

In the interest of maximum shelf life, storage temperatures should not exceed 30°C.

When stored in a cool environment, the inks are expected to have a shelf-life of approximately 12 months from the date of manufacture.

## Special Matches - Flute FZ

Colours can be supplied against prints, wet ink samples or to PANTONE®, British Standard, 'HKS' or 'Munsell' references and 'Seritone' numbers. A sample of the substrate, with the number and type of mesh to be used, should be attached to orders. Other properties required of special matches may be very important and it is necessary that full details are supplied of the process to be followed. Sericol's Technical Service Department will be pleased to advise on non-standard colours.

Minimum quantity 5 kg.

## Safety and Handling

Aquaspeed inks:

- are formulated to be free from any carcinogenic, mutagenic or reprotoxic chemicals.
- do not have a flash point and is therefore exempt from the Highly Flammable Liquid Regulations.
- All UV curing inks and varnishes contain acrylates. Acrylates, like any organic solvent, are skin and/or eye irritants. It is essential that the measures given in Section 8 of the Material Safety Data Sheet for this product are always followed.

Comprehensive information on the safety and handling of Aquaspeed inks and solvents is given in the appropriate Sericol Safety Data Sheets, available on request.

## Environmental Information

Aquaspeed inks:

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

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## Problems and their solutions

Problem	Solution
1. Poor screen stability	Screen exposed to excessive ultra violet light - check equipment for light leaks and/or protect screen from direct sunlight.
2. Poor flow/streaky print at high print speed.	a. Viscosity of ink too high. Reduce (see recommended thinner). b. Adjust squeegee angle to be more upright.
3. Poor definition	a. Stencil too thin or worn - Prepare fresh stencil. b. Mesh used too coarse - use finer mesh.
4. Slow drying speed	Undercuring a. Ink film too thick - use finer mesh and/or sharper (or harder) squeegee b. Curing unit efficiency low. Check cleanliness of lamps/reflectors and age of lamp.
5. Poor scuff resistance	Undercuring (See 4)
6. Poor adhesion to substrate	Undercuring (See 4)
7. Poor intercoat adhesion between colours.	Overcuring. Increase belt speeds and/or reduce lamp power.
8. Excessive ink usage	a. Mesh used is too coarse - User finer mesh b. Squeegee is too soft or rounded. Use harder and/or sharper one.
9. Excessive paper curl/cockle	a. Ensure film weight is minimised by correct choice of mesh. b. Excessive water thinning. Print un-thinned or thin XR, LZ or FZ with ZE807. c. Reduce film weight by using harder and/or sharper squeegee.
10. Premature stencil breakdown	a. Ensure that water/solvent resistant emulsion or film has been used. b. Ensure stencil is fully exposed to achieve full water resistance. Do not under expose to improve resolution. c. Use sensitised emulsion to spot out. Ensure emulsion is dried and fully post exposed.

*The information and recommendations contained in this Product Information sheet, as well as technical advice otherwise given by representatives of our Company, 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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