Uvispeed UV Curing Inks for Paper, Board & Plastics

MATT UM – SATIN SA – GLOSS UG – GLOSS UX – CITYLITE VZ – POSTER AZ – MULTIFLASH UZ

The Uvispeed series of inks has been developed for Display and PoP printers to provide maximum reliability and optimum colour consistency over long print runs. The Uvispeed series includes ink ranges with a variety of finishes on paper, boards and plastics and can be used on all print machines including multi-colour lines. Uvispeed inks offer unlimited screen stability, freedom from re-wetting and blocking problems plus atmospheric and workplace environment advantages.

Uvispeed Product Ranges

Matt UM
Matt finish line ink for paper, board, PVC and polycarbonate substrates. Fully intermixable with Gloss UG to obtain intermediate finishes. Colours, comprising the Seritone Matching System.

Satin SA
Satin finish trichromatic ink for general purpose printing of indoor PoP/display items on Paper, Board and PVC. Excellent finishing properties.

Gloss UG
High Gloss line and pro-file trichromatic range for use on corrugated board for displays and packaging. Excellent finishing properties. PANTONE®* Matching Formulae available. Also available are Gloss UX fluorescents.

Gloss UX
Line colours have been developed for high speed printing for packaging and POP/display items on paper, board and PVC. It is suitable for most types of printing equipment including flatbed and cylinder-press.

Citylite VZ – Flash Cure
A satin finish 4 colour halftone set for the production of back illuminated 'city' posters typically used in bus/train stops or for indoor displays. Citylite VZ colours utilise special high strength pigments to produce rich colours under backlit conditions.

Poster AZ – Flash Cure
A matt finish 4-colour halftone set for the production of multisheet posters. Excellent pasting properties with posters developing 'Positive Edge Tension' during soaking/pasting – ensuring they stay in place on billboard sites. Excellent flexibility and intercoat adhesion, suitable for most poster papers. Washes up with water.

Multiflash UZ – Flash Cure
Satin finish, line, trichromatic and pro-file trichromatic range for printing heavy weight papers, board and PVC's on multicolour in-line machines. Has good print definition and can be flash cured. PANTONE® Matching Formulae available. Adhesion to gloss PVC can be improved by the addition of up to 10% ZE818. UZ colours have 2 year outdoor life. See section 'Outdoor Use'. Should extra chemical resistance be required it is recommended to overprint Multiflash UZ with ES376 Hiflex Varnish.

pro-file Trichromatics
Gloss UG and Multiflash UZ pro-file trichromatics are designed to enable easier matching of prints to the ISO 12647-2 colour standard. However the variables of the screen printing process mean that achieving the specific L*a*b* values of a defined standard will not always be possible, and a printer should fully test and fingerprint the entire process in order to gain the best result possible.

Main Characteristics

Curing
When printed through 150.34 PW mesh and cured through dryer with 2 x 80 watt/cm lamps.

Matt UM = 35-45 m/min. **Satin SA** = 30-40m/min. **Gloss UG** = 30-40 m/min. **Uvispeed UX** = 30-40 m/min. **Citylite VZ** = 30-40 m/min. **Poster AZ** = 30-40 m/min. **Multiflash UZ** = 30-40 m/min.

Poster AZ, Citylite VZ and Multiflash UZ are designed to be flash cured between colours followed by full cure. For further details, see section 'Curing Information'.

Thinning
Gloss UG, up to 10% ZE807.
To increase cure speed, add up to 5% ZE813. On rigid PVC add up to 10% ZE817 to increase cure speed or adhesion. To improve fine definition add up to 10% ZE808.

Gloss UX, up to 10% ZE637 thinner, up to 10% ZE807 (up to 5% for UX fluorescents), Up to 10% ZE813 to increase cure speed, up to 10% ZE817 to increase cure speed and adhesion to heavy weight rigid PVC. Up to 10% ZE808 Gel additive to improve fine definition.

Matt UM, up to 10% ZE637. To increase cure speed on rigid PVC, add up to 10% ZE807. Adhesion may be improved by adding 10% ZE818. Increasing cure speed may raise finish.

Multiflash UZ, Poster AZ, Satin SA and Citylite VZ, up to 10% ZE637. Up to 5% ZE813 to increase cure speed. Up to 10% ZE807 in Satin SA will improve adhesion to PVC.

Wash-up
Screen Wash Universal. Screen Cleaner AM or SW are recommended for automatic screen cleaning machines. Water can be used for Poster AZ only.

Mesh
150.34 PW is recommended for general use. 120-140 PW for Gloss UX fluorescents. If coarser meshes are used, excessive material curl could occur and cure-speed may decrease.

Stencil Type
Solvent resistant.
Recommended:

Contact exposure:	Dirasol 916, Dirasol Super Coat, Capillex CP
Direct projection:	Dirasol SW10, S10 or Dirasol SuperPro.
Direct light exposure:	Dirasol CTS.

Coverage m^2/kg 150.34 PW mesh
Matt UM, 60. **Satin SA**, 85-95. **Gloss UG**, 80-100. **Gloss UX**, 85-100. **Gloss UX fluorescents**, 55-65. **Citylite VZ**, 75-85. **Poster AZ**, 75-85. **Multiflash UZ**, 75-85.

Ink Coverage
The coverage figure shown for each product is for a single colour print. Higher pigmented colours such as white and colour matches containing a high proportion of white will not yield the same coverage.

IMPORTANT
Stir well before every use. Compatibility of substrates and combined systems must be evaluated under actual production conditions before commencing a print run (See product specific information, particularly 'Co-use with Other Inks').

*PANTONE® is the property of Pantone, Inc.

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Co-use with Other Inks

Gloss UG, Satin SA and Matt UM may be mixed together. In this way a wide range of intermediate finish levels may be achieved. Please note, mixing Gloss UG with Satin SA or Matt UM will reduce adhesion to PVC. They can also be used to over or under print each other. Can also overprint fully cured prints of Colorstar CS, MattPlast MG, Matt Vinyl MV and Plastijet XG and be overprinted by these.

Poster AZ must not be overprinted with solvent-based inks. Other UV inks may be used, but billboard paste acceptance will be compromised.

Multiflash UZ must not be mixed with other inks. May be printed over fully dried prints of Gloss UG and the Aquaspeed series. Multiflash UZ may be overprinted with Uvispeed Gloss UG.

Gloss UX may be printed over fully dried prints of Seristar SX, Colorstar CS and Matt Vinyl MV. Solvent should be allowed to fully evaporate from any solvent-based prints prior to overprinting with UV curing systems. In some cases this may take up to 24 hours. Seristar SX, Plastijet XG, Matt Vinyl MV, Mattplast MG and Colorstar CS may overprint Gloss UX.

Uvibond UV Curing Varnishes are recommended when over varnishing these inks, UV383 for PVC or UV391 for Paper and Board.

Curing Information

The curing information quoted for each product 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. **White or colour matches containing White will be slower than Seritone base colours. UZ009 Dense Black is slower than other UZ and UG colours.**
Poster AZ, Citylite VZ and Multiflash UZ can be conventionally or flash cured. **Multiflash UZ001 Black is not a flash cure ink. Colours containing more than 30% UZ001 will not flash cure and therefore require continuous UV curing equipment.**
Solvent-based ink prints must be fully dried prior to overprinting with UV curing inks. In some cases this may take up to 24 hours.

Post Curing:

The chemical reaction initiated by a UV dryer will continue for 24 hours or more after the prints have emerged. This reaction can adversely affect intercoat adhesion and flexibility. Care should be taken that prints are not over-cured and that adhesion of subsequent colours, as well as the first colour, is assessed at regular intervals.

Pre-Production Tests

Certain plastics may be impregnated with lubricants which, like plasticiser migration, may impair adhesion even a considerable period after printing. This can usually be overcome by wiping the surface with white spirit before printing.
Surface adhesive left from protective papers on rigid PVC sheets should be thoroughly removed in line with suppliers' instructions.
Some plastics can become brittle when printed, possibly to the point of shattering, often after several weeks. It is essential to check compatibility between ink and plastic to guard against this.

Flexibility

Uvispeed Gloss UG, Gloss UX, Satin SA and Multiflash UZ inks will meet the rigorous demands of the display market for flexibility. On suitable materials, several layers can be guillotined without cracking or flaking.

Gloss Level Control

Gloss UG, Gloss UX and Satin SA

Gloss level may be reduced by addition of ZE816 UV Matting Base. Where high levels of addition are required, it is recommended that Gloss UG is mixed with Matt UM to maintain colour strength. Gloss UG, Gloss UX, Satin SA and Matt UM may be mixed in any proportion without loss of printing properties.

Multiflash UZ

UZ384 matting base can be added to the colours from the UZ range to control finish.

Outdoor Use

Ink ranges in the Uvispeed Series have been tested for resistance to weathering in an Atlas xenon bulb weatherometer. Figures given are maximum expected outdoor life when printed on superior grade self adhesive PVC and exposed in zone 1 as defined in the Fujifilm 'Weathering' information sheet available at www.fujifilm.eu.

Gloss UG	12 months.
Gloss UX	Line & Trichs – up to 24 months. Exceptions: UX021/114/164 have approximately 8-12 months outdoor life.
Satin SA	3 months.
Matt UM	12 months. Exceptions: UM164 - 3 months, UM021 - 6 months.
Poster AZ	3 months.
Citylite VZ	3 months.
Multiflash UZ	Line & Trichs - 24 months. Exceptions: UZ064/114/121/164 have approximately 8-12 months outdoor life.

Colours listed as exceptions have reduced lightfastness and should not be used for prolonged outdoor exposure or in colour matches requiring outdoor resistance.

The Seritone Matching System

The Seritone Matching System enables readily matched special colours. The system comprises base colours plus Black, White and Extender Base.

PANTONE® Matching System

Fujifilm provides formulae for the coated ('C' suffixed) section in Gloss UG, Gloss UX and Multiflash XZ ranges. The Fujifilm package includes:

1 **PANTONE® Color Formula Guide**

2 **Fujifilm Formula Guide**
Formulations given in percentages by weight.

3 **Color Manager Software**
For use with IBM compatible computers. This package enables use of the PANTONE formulations plus:

- Storage facility for user's own formulations.
- Automatic batch sizing and costing.
- Ink coverage estimator.
- Stock control system to calculate the amount of stock and a reminder when stocks fall below a given (programmable) level.

4 **PANTONE Formula Scales**
Pre-programmed with PANTONE shades to ensure maximum accuracy, speed and cost savings.

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Standard Colours

	Gloss UG	Gloss UX	Satin SA	Matt UM	Poster AZ	Citylite VZ	Multiflash UZ
Black	UG001	UX001	–	UM001	–	–	UZ001
Dense Black	–	UX009	–	–	–	–	UZ009*
White	UG021	UX021	–	UM021	–	–	UZ021
Seritone Yellow (Green Shade)	UG064	UX064	–	UM064	–	–	UZ064
Seritone Yellow (Red Shade)	UG066	UX066	–	UM066	–	–	UZ066
Seritone Orange	UG114	UX114	–	UM114	–	–	UZ114
Vermilion/Seritone Red (Yellow Shade)	UG121	UX121	–	UM121	–	–	–
Scarlet	–	UX122	–	–	–	–	–
Seritone Red (Yellow Shade)	–	–	–	–	–	–	UZ121
Seritone Red (Blue Shade)	UG164	UX164	–	UM164	–	–	UZ164
Seritone Magenta	UG165	UX165	–	UM165	–	–	UZ165
Deep Violet/Seritone Violet	UG127	UX127	–	UM127	–	–	–
Seritone Violet	–	–	–	–	–	–	UZ127
Seritone Blue	UG230	UX230	–	UM230	–	–	UZ230
Seritone Green	UG325	UX325	–	UM325	–	–	UZ325
Extender Base	UG381	UX381	–	UM381	–	–	UZ381
Trichromatic Yellow	–	–	SA052	–	AZ052	VZ052	UZ052
Trichromatic Magenta	–	–	SA135	–	AZ135	VZ135	UZ135
Trichromatic Cyan	–	–	SA215	–	AZ215	VZ215	UZ215
Trichromatic Black	–	–	SA004	–	AZ004	VZ004	UZ004
Trichromatic Extender Base	–	–	SA396	–	AZ396	VZ396	UZ396
Fluorescent Yellow L	–	UX053	–	–	–	–	–
Fluorescent Orange M	–	UX105	–	–	–	–	–
Fluorescent Magenta M	–	UX139	–	–	–	–	–
pro-file Trichromatic Cyan	UGP15	–	–	–	–	–	UZP15
pro-file Trichromatic Yellow	UGP52	–	–	–	–	–	UZP52
pro-file Trichromatic Magenta	UGP35	–	–	–	–	–	UZP35
pro-file Trichromatic Black	UGP04	–	–	–	–	–	–
pro-file Trichromatic Extender Base	UGP96	–	–	–	–	–	–
Available pack sizes	**5 kg**	**5 kg**	**5 kg**	**5 kg**	**5 kg**	**5 kg**	**Line: 5,100 & 200kg Trich: 5 kg Pro-File trichs: 5 & 200kg * 10kg only**

Metallic Colours

Metallics can be made by mixing Metallic ink Medium with Gold and Silver powders as follows:

MP461	Rich Pale Gold Powder Superfine	20 parts by weight
UU382	Metallic Ink Medium	80 parts by weight
MP483	Silver Powder Superfine	15 parts by weight
UU382	Metallic Ink Medium	85 parts by weight

These mixtures should be used within 8 hours. Metallics may be tinted, if required, by 5-10% additions of CU concentrates.

See also Product Information sheet 'Special UV inks and Additives' for details on UU475 Metallic Silver, UU461 Metallic Gold and UU382 Metallic Ink Medium.

Reducers and Additives

ZE637	Thinner for UM, AZ, UZ, VZ, UX
ZE807	Thinner for UG, UM, UX
ZE813	Fast Thinner for UG, UM, UZ, VZ, UX
ZE817	Adhesion Promoter for UG, UX
ZE808	Gel Additive for UG, UX
ZE816	Matting Base for UG, UX
ZE818	UZ Adhesion Promoter

Available in 5 ltr containers.

See also the Product Information sheet 'Special UV inks and Additives' for details of other products which can used to modify UV inks.

Post Print Mesh Cleaning

Ink stains can be removed after decoating by using Screen Gel Clear (OAA03) and Antistain (AND50) as follows:

Apply Screen Gel Clear to both sides of the mesh followed by Antistain. Allow to stand for 30 minutes then wash off using a high pressure water gun.

This blend of chemicals is suitable for manual application and dwell time can be extended without any detrimental effect to mesh life.

Storage

Containers should be tightly closed immediately after use. At the end of long printing runs surplus ink from the screen should be disposed of. Uvispeed inks and reducers should not be stored in direct sunlight or near warm pipes and should be kept away from peroxides. For maximum shelf-life, storage should be between 10°C and 25°C. Stored in a cool environment the inks have a shelf-life of approximately 12 months from the date of manufacture.

Special Matches

Colours can be supplied against prints, wet ink samples or to PANTONE®, British Standard, 'HKS' or 'Munsell references'. A sample of the substrate and 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 full details should be supplied of the process to be followed.
Our Customer Support Department will be pleased to advise on non-standard colours.

Minimum quantity 5 kgs.

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.

Safety and Handling

Uvispeed Inks:

- are formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or reprotoxic according to Directive 67/548/EC.
- have a flashpoint greater than 55°C and are therefore not classified as a 'dangerous substance' under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).

Comprehensive information on the safety and handling of Uvispeed screen inks and reducers is given in the appropriate Safety Data Sheets.

Environmental Information

Uvispeed Inks:

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

Poster AZ Inks:

- readily wash-up with water to reduce solvent usage.

FUJIFILM

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