



Professional Products=Top Performance=Winning Results

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SUBLIMATION DYE INKS FOR HEAT TRANSFER USING INK JET PRINTING WITH PIEZO DROP-ON DEMAND TECHNOLOGY

The LFP ink series is suitable for most wide format piezo printers using water-based inks (Epson, Mimaki, Mutoh, Roland).

LFP Series Dye Sublimation inks for printing on polyester		
Product	Color Code	Retail Pricing
Very attractive volume pricing and bundle packages available, call for personalized quote.		
Standard Colors		<i>As of 01/05/2006 Subject to change</i>
UVMAX YELLOW	Y	500gr (500ml) \$156.00
UVMAX MAGENTA	M	1Kg (1000ml) \$299.00
UVMAX CYAN	C	5Kg (5000ml) \$1495.00
UVMAX BLACK	K	
SUPERCLEAN CLEANING SOLUTION	PM	

INK COMPATIBILITY

US Sublimation's LFP Dye Sublimation Inks are sold under license to European Patent EP 1 778 798. The license is transferred to the user at the time of purchase allowing the user to use the ink for dye sublimation. The use of this inkjet ink, under the terms of the license, is restricted solely to the use with ink jet printers having a carriage width of 42 inches or more.

LFP UVMAX DYE SUBLIMATION INKS

PRINTERS: The US Sublimation LFP ink series is suitable for most piezo printers using water-based inks (Epson, Mimaki, Mutoh, Roland).

TRANSFER PAPER: Transfer paper can greatly affect the results obtained with any dye sublimation ink. US Sublimation LFP inks will offer optimal performance on all coated papers designed for use in the dye sublimation process. LFP series inks have been tested to exceptional performance with JetTran transfer paper.

INK DELIVERY: The LFP ink series has been tested to optimal performance on a variety of printers using the E-Z FILL and E-Z FLUX bulk ink delivery solutions from InkVillage.

INK JET PRINTING

The life span of piezo heads is considerably long and should conform to the manufacturer's specification even if inks based on disperse dyes are used.

Our inks based on disperse dyes have been tested on the most frequently used printers, but the suitability of the inks for individual machines and models has to be checked by the user.

If the inks dry in the nozzles, the normal cleaning procedure built into the printer should be applied.

The inks can be printed either directly on to the textile or indirectly via an intermediate substrate.

When the direct printing method is used, the dyes must be fixed by steam or by drying at 210°C (410°F) for 30 seconds. In order to reach optimum fastnesses the material must be washed after the fixation process.

With the indirect method, it has to be taken into account that the light fastness and rubbing fastness of the printed paper or other intermediate substrate are not very good. The printed substrate should therefore be handled with care and transferred as soon as possible after printing.

To obtain a good colour transfer and fixing, the printed substrate has to be transferred at 210°C (410°F) for 30 seconds.

FASTNESS

The fastness have been evaluated on a 105 g/m² 100% PES material. Transfer conditions were 210°C (410°F) for 30 seconds. Light exposure varied from a minimum of 250 hours to 450 hours (actual exposure is indicated next to the gray scale rating: es. UV max Yellow gray scale light variation 4/250 hours of light exposure. Table 1 refers to ratings based on Carbon Arc Light Fastness test; Table 2 refers to ratings based on Xenon Arc Light Fastness test.

To achieve the fastness shown on the table, it is recommended with direct printing that the excess chemicals be eliminated by washing.

Table1: Carbon Arc Light Fastness Rating

Product	Light *		Water	Washing	Persp.	Persp.	Rubbing	Rubbing	Dry clean.
			(severe)	(60°C)	(acid)	(alkali)	(dry)	(wet)	
	AATCC 16A		ISO 105	ISO 105	ISO 105	ISO 105	ISO 105	ISO 105	ISO 105
	1	2	/E01	/C03	/E04	/E04	/X12	/X12	/D01
	gray scale/ hours		ch./st.	ch./st.	ch./st.	ch./st.			ch./st.
LFP UVMAX Yellow	4 / 250	4 / 250	5 / 5	5 / 5	5 / 5	5 / 5	4-5	5	4 / 5
LFP UVMAX Magenta	4 / 450	4-5 / 250	5 / 5	5 / 5	5 / 5	5 / 5	4	4	4-5 / 5
LFP UVMAX Cyan	4-5 / 450	4-5 / 450	5 / 5	5 / 5	5 / 5	5 / 5	4	4-5	4-5 / 5
LFP UVMAX Black	4 / 200	4 / 100	4 / 5	5 / 5	5 / 5	5 / 5	4-5	4-5	5 / 5

- The lightfastnesses have been measured 1: at the maximal recommended dye concentration and 2: at a dilution of 1:31. All other fastnesses have been measured at the maximal recommended dye concentration.

Table 2 : Xenon Arc Light Fastness Rating

Product	Light *		Water	Washing	Persp.	Persp.	Rubbing	Rubbing	Dry clean.
			(severe)	(60°C)	(acid)	(alkali)	(dry)	(wet)	
	AATCC 16E		ISO 105	ISO 105	ISO 105	ISO 105	ISO 105	ISO 105	ISO 105
	1	2	/E01	/C03	/E04	/E04	/X12	/X12	/D01
	gray scale/ Exposure hrs.		ch./st.	ch./st.	ch./st.	ch./st.			ch./st.
LFP UVMAX Yellow	4 / 400	4 / 400	5 / 5	5 / 5	5 / 5	5 / 5	4-5	5	4 / 5
LFP UVMAX Magenta	4 / 250	4 / 200	5 / 5	5 / 5	5 / 5	5 / 5	4	4	4-5 / 5
LFP UVMAX Cyan	4-5 / 450	4-5 / 450	5 / 5	5 / 5	5 / 5	5 / 5	4	4-5	4-5 / 5
LFP UVMAX Black	4 / 350	4 / 300	4 / 5	5 / 5	5 / 5	5 / 5	4-5	4-5	5 / 5

- The light-fastnesses have been measured 1: at the maximal recommended dye concentration and 2: at a dilution of 1:31. All other fastnesses have been measured at the maximal recommended dye concentration.

Color fastness is a measure of how permanent a color is on a substrate. Color can be adversely affected by a number of factors including but not limited to exposure to light, water, pollutants and to normal wear and tear. Various tests assess how the color is affected by these different parameters and a numerical value is then established to indicate the degree of color change.

Color fastness to "Light"

In this test, a prepared specimen of fabric is half covered and exposed to artificial ultraviolet light along with a scale of light sensitive blue dyed wool standards designed to fade after different time periods. Only the uncovered part of the test sample will be subject to any fading.

The light fastness is evaluated on a scale of 1 – 8 using the blue dyed wool standards, where 1 indicates very low light fastness (maximum color change) and 8 indicates very high light fastness (minimum color change). Upholstery fabrics should display a minimum rating of 5 regardless of end usage.

Color fastness to "Rubbing"

This test is undertaken on a crock meter, whereby the fabric specimen is subjected to rubbing with a sample of standard un-dyed cotton fabric in order to check for color transfer. Two tests are involved, one using the rubbing cloth dry, the other with the cloth wetted. The rubbing cloth is placed on the finger of the crock meter which is then moved back and forth across the fabric sample ten times at a steady speed. The rubbing cloth is then evaluated using standard Grey Scales for staining, on which 1 signifies maximum staining and 5 no staining. For all grades of end use, fabrics must show a maximum staining of 3-4 for dry rubbing and 3 for wet rubbing.

Color fastness to "Water"

This test, carried out using a perspirometer, is used to determine if any color transfer occurs when wet fabrics come into contact with water. The fabric sample is fully immersed in de-ionized water together with strip of multi-fiber fabric (as its name suggests, this is a strip containing materials of different compositions). Each item is then placed in the perspirometer and left for four hours in a pre-heated oven at 37°C. The multi-fiber strip is then assessed for color staining using the standard Grey Scales

COLOUR MANAGEMENT

Colour profiles for the most popular printers are available upon request. The use of a RIP software can greatly assist in obtaining desired colours and results, while there are several very good software packages US Sublimation uses and supports Wasatch SoftRip.

SHELF LIFE

Shelf life of LFP ink is 6 months. Ink should be stored away from direct sunlight at room temperature. Do not allow to freeze or reach extremely high temperatures.

STORAGE & HANDLING

Store in dark temperature controlled room. Do not allow to freeze and don't expose to extreme temperature fluctuations. Don't expose to direct sunlight. It is advised to rotate bottles every month and to gently shake contents before pouring in ink delivery device.

To the best of our knowledge the information contained herein is true and accurate but all recommendations or suggestions are made without guarantee.
