FUJIFILM

AF3-0156E2

PRODUCT INFORMATION BULLETIN

Color display materials

FUJICLEAR Display Material for Digital Printers

1. Features and uses

The FUJICLEAR Display Material for Digital Printers is a laser-exposure-optimized clear-base color print material for use in the production of transparent color display prints. When exposed by laser light on laser printers or other digital printing devices, this material can be used to produce high-quality transparent color prints of digital image data. It is suitable for a wide range of display uses in sizes from small to large, such as advertising, publicity, and indoor decoration.

Features

• High D-max	Offers an extremely wide range of gradation setup Creates images with rich saturation across the entire color spectrum, with improved reproduction of detail over a larger area
• Neutral Gray Balance	Balanced natural tone reproduction from the highlights to the shadows
• Vibrant Color Reproduction	Natural and more vibrant reproduction of red, green, blue, and yellow, producing a high-chroma finish suitable for displays
• Highest Level of Color Image Stability	Minimal reduction in image density even during long-term display under severe conditions to provide sustained clarity and vibrancy in image quality
• Excellent Latent Image Stability	Remarkable latent image stability providing more uniform high print quality for greater productivity

2. Base material and thickness

PET base: about 180 µm (7 mil.)

3. Safelight

Handle in total darkness. If safelight use is unavoidable, refer to the following precautions.

- Expose material no longer than 1 minute to light emitted through a Wratten Safelight Filter No.13 (or Fuji Safelight Filter No.103A) in a 10-watt tungsten lamp safelight located at least 1 meter from the work area.
- Safelight filters fade with extended use and need regular checking. Replace when fogging is detected.
- Since exposed material is subject to safelight-induced sensitivity increases in the exposed areas, be sure that handling precautions are observed.

4. Material handling

- Raw material which has been stored at a low temperature (by refrigeration) should be set aside and allowed to warm to room temperature prior to being opened. If the material is taken out of its packaging immediately after being removed from refrigerated storage, condensation will form on the material surfaces, resulting in print color changes and easily damaged surfaces.
  The shortest periods required to return freezer- or refrigerator-stored material to room temperature (minimum temperature equalization periods) are as follows.

20°C(68°F)Temperature Equalization Periods
Unit: hours

Storage Temperature / Paper Size	-20°C (-4°F)	0°C (32°F)	10°C (50°F)
127cm*40 m (50 in. x 131 ft.)	9.5	8	6

NOTES
- Do not heat paper in order to equalize temperatures.
- Remove paper from refrigeration one day before use.

- If exposed material remains unprocessed for extended periods of time under normal room conditions or is subjected to high temperature and/or high humidity, changes in the image and color balance may occur.
- The time between exposure and processing should be fixed for purposes of uniform quality. Rather than holding exposed material for processing the next day, initiate processing as soon as possible.

5. Calibration data for printers

Please refer to the following calibration data as a general guide when using FUJICLEAR Display Material for Digital Printers.

1.Durst Reference data
Lambda 130/131

Dmax. Aim glossy/lustre	Basic Calibration
R = 2.80	Y =56.67
G = 2.90	M =0.00
B = 2.80	C =3.53
	D =106.67

Theta 76/76HS

Dmax. Aim glossy/lustre	Basic Calibration
R = 2.70	Y =0.00
G = 2.60	M =0.60
B = 2.50	C =1.93
	D =0.9210

For HIQ print mode only

Epsilon 30 plus

Dmax. Aim glossy/lustre	Basic Calibration
R = 2.70	Y =0.000
G = 2.60	M =0.060
B = 2.50	C =0.193
	D =0.9210

2.Polielettronica laserlab 50/76/127 Reference data
Use the auto calibration tools for setup

3.Oce Lightjet Reference data
The calibration targets for the OCE Lightjet 430, 500XL and 5000 printers can be downloaded from the following URLs (websites).
http://www.oce-dgs.com/PrinterSupport/LJ_Customer_Access/LJ_Customer_Access.htm
ftp://ftp.cymbolic.com/Downloads/Photo/Media%20Targets/LightJet430_500XL_&_5000/LightJet-Fusion/

6. Processing

This material is designed for use with RA-4 type, including Fuji Hunt CP-RA Process. With this process, the time for both color development and bleach-fix is 110 seconds. Processing steps are as indicated in the following table.

RA-RollerTransport

Processing steps	Processing conditions				
	Time (sec)	Temperature		Basic replenishment rate	
		°C	°F	ml/m^2	ml/ft^2
Color Developer	110	35.0±0.3	95.0±0.5	495*	46.0
Bleach-fix	110	30~36	86~97	495	46.0
Wash	220	30~40	86~104		
Drying	as needed	50~70	122~158		

*If the processing solution replacement ratio (processor utilization) is low, it may be necessary to increase replenishmentrates. For example, if the solution replacement ratio is between 4% and 7%, the replenishment rate should be 581 ml/m² (54 ml/ft²). If it is less than 4% the replenishment rate should be 861 ml/m² (80 ml/ft²)

7. Material and print storage

Unprocessed Material
Storing exposed or unexposed material under hot and humid conditions may adversely affect the speed, color balance and physical properties of the material. Refrigerated storage is most desirable, however, as a matter of practicality, store material under the following conditions.

- Short-term storage:
  Store in a cool and dark location, away from direct sunlight, high temperature and high humidity
- Long-term storage:
  Below 10°C (50°F)

Finished Print
When a finished print is put on display, the extent of time-induced deterioration in image quality will vary with the conditions, including the intensity of light, the changes of temperature and humidity, and the presence or absence of contaminating gases in the air.Refer to a later section “16. Image storage characteristics”.

8. Retouching

Finished prints can be retouched on both the emulsion side and base side with retouching dyes manufactured for this purpose.

9. Light sources for viewing

As the light source for finished prints, fluorescent lamps are generally the most practical. To produce the best results, however, use only high quality fluorescent lamps with good color rendering qualities.

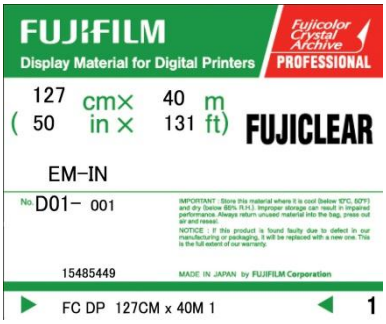
10. Sizes available

Width \ Length	Box packaging		
	30 m (123 ft)	40m (164 ft)	50 m (205 ft)
50.8 cm (20 in.) **EM IN**	■		
76.2 cm (30 in.)	■		
101.6 cm (40 in.)			■
127.0 cm (50 in.)		■	

Note: Size availability may change without prior notice.

11. Markings (Box/Emulsion numbers)

11.1 Labelling



11.2 Emulsion numbers

Emulsion numbering will be in ascending order from D01 at introduction.

Note FUJICLEAR is marked with a three-digit emulsion number followed by an additional three digit number which is provided for production control purpose only. Should any problem arise with FUJICLEAR DISPLAY, the additional three digit number suffix to the emulsion number should be indicated on the claim.

12. Technology incoporated in this material

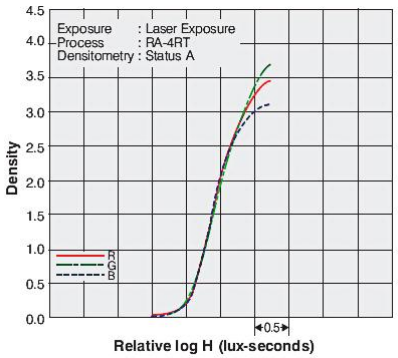
12-1 APC (Advanced Photoelectron Controlling) Technology

The improved PCL (Photoelectron Controlling Technology for Laser Exposure) technology has resulted in a more precise silver halide grain structure, and enhanced sensitivity. By applying it to the FUJICLEAR Display Material for Digital Printers, the incorporated APC technology temporarily stores the photons, which are generated in high densities, within the silver halide crystals, allowing them to be concentrated in sensitivity specks with high efficiency. The result is consistent ultra high quality images with rich gradation from the highlights to the shadows.

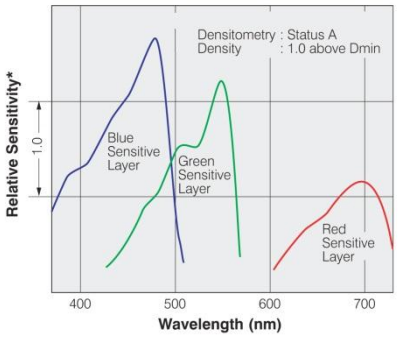
12-2 HDS (Hybrid Dye-image Stability) Technology

The newly developed HDS technology, based on the AVC (Advanced V-Coupler) technology, enhances the stability of the anti-fading agent to produce unparalleled image permanence.

13. Characteristic curve

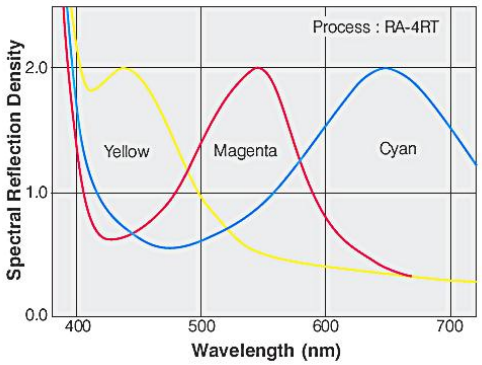


14. Spectral sensitivity curves



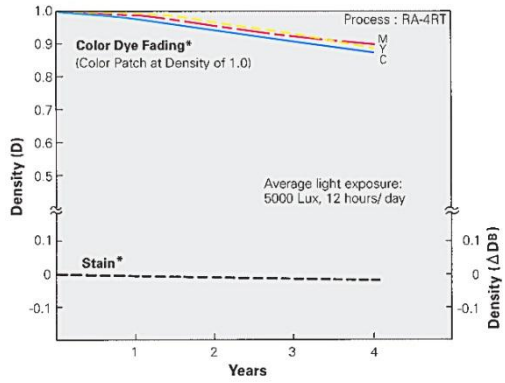
* Sensitivity equals the reciprocal of the exposure (J/cm^2) required to produce a specified density.

15. Spectral dye density curves



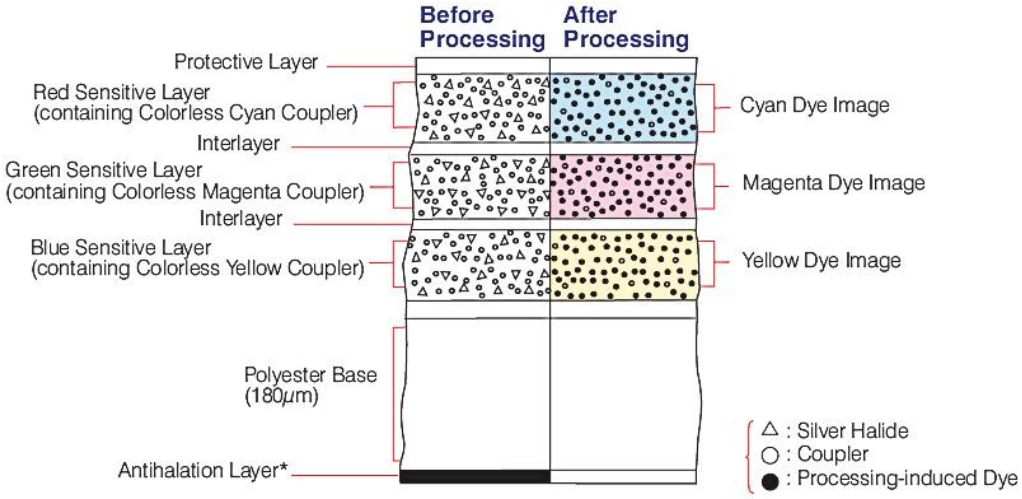
16 Image storage characteristics

Estimated Light Storage Stability under 5000 Lux Intermittent Illumination Conditions



*Time-induced white background staining (yellowing) is as important as dye image fading in affecting image quality. Therefore, dye image fading and yellowing data are also included.

17. Material structure



* The antihalation layer becomes colorless and transparent after processing.

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