FUJIFILM

AF3-01173E3

PRODUCT INFORMATION BULLETIN

Color printing materials

FUJIFLEX Crystal Archive Printing Material

1. Features and uses

The FUJIFLEX CRYSTAL ARCHIVE PRINTING MATERIAL is a silver halide color printing material with enhanced laser scanning exposure suitability, designed exclusively for digital output on large-format laser printers. This printing material yields high-image-quality digital prints when used with a laser printer. Furthermore, because of its PET base, this printing material produces prints that are superbly smooth with a sharp, transparent finish. It is suitable for a wide variety of uses, such as large-sized displays, advertisements, and photo exhibitions.

Features

• High D-max	Boasts a wide tonal range, producing high-image-quality prints with a rich textural quality
• Purer Whiteness	Clearer, more distinct print images and sharper text quality
• Vibrant Color Reproduction	Expanded color reproduction range with high color saturation,ideally suited to commercial use
• Excellent Image Stability	Highest level of image stability ideal for display purposes
• Excellent Latent Image Stability	Stable production of more uniform high-quality prints for greater productivity
Remarkable surface smoothness and flatness	Produces prints with a mirror-like super gloss and great clarity

2. Base material and thickness

PET base: about 175 µm (7mil.)

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. For this reason, exposed material should be subjected as little as possible to safelight illumination.

4. Pre-processing paper handling/storagae

- The higher the temperature and humidity, the more material, whether unused, unexposed or exposed, is susceptible to adverse changes in speed, color balance, physical characteristics and other properties. Unprocessed material is best stored at low temperatures. Specifically, 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)

- 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

StorageTemperature / Material Size	-20°C (-4°F)	0°C (32°F)	10°C (50°F)
127cm*40 m (50 in. x 164 ft.)	9.5	8	6

NOTES
- Do not heat printing material in order to equalize temperatures.
- Remove printing material 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 color balance and other properties may occur.
- The time between exposure and development should be fixed in order to obtain consistent quality. Avoid waiting until the next day to develop the exposed material. Rather than holding the material for processing the next day, initiate processing as soon as possible.

5. Processing

This material is designed for use with RA-4 type chemsitry, including Fuji Hunt CPRA Process.

6. Post-processing material (print) handling/storage

Prints are subjected to various influences (heat, humidity, light, air pollution, etc.) relative to the conditions under which they are stored. The general conditions under which prints are stored are outlined below.

- Recommended Storage Conditions:
  Temperature: Below 25°C (77°F)
  Humidity: 30% to 50% RH with good ventilation
- Extended Storage Conditions:
  Temperature: Below 10°C (50°F)
  Humidity: 30% to 50% RH

7. Light sources for viewing

When inspecting finished color prints, it is essential that an illumination source be used that has superior spectral characteristics, adequately high color temperature and sufficient brightness. This is because results can appear different, depending on light quality. For precise results, prints should be examined under the conditions designated by ISO 3664-2000. As a general guide, the following conditions are recommended.

Color Temperature: 5000±300 K
Average Illumination: 500 Lux or more
General Color Rendering Index: Ra 90 or more*

* To attain these values, special fluorescent lamps designed for color evaluation (e.g. EDL type) should be used.

8. Surface available

Fujiflex Crystal Archive Printing Material is available as Super Glossy surface.

9. Sizes available

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

Note: Size availability may change without prior notice.

10. Markings (Box/Emulsion numbers)

10.1 Labelling

10.2 Emulsion numbers

Emulsion numbering will be in ascending order from U01 at introduction.

Note FUJIFLEX 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 FUJIFLEX DISPLAY, the additional three digit number suffix to the emulsion number should be indicated on the claim.

11. Technology incoporated in this material

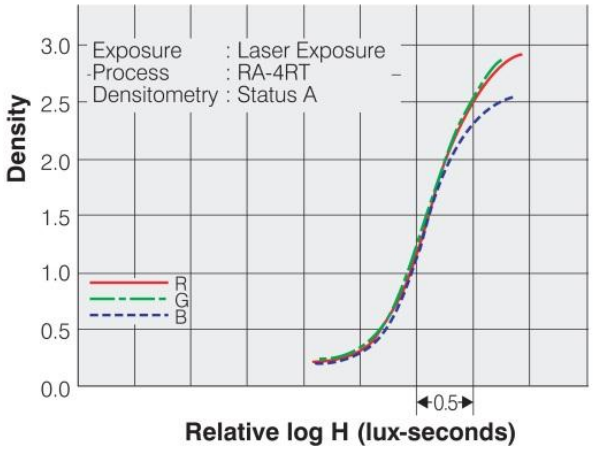
11.1 X-Coupler Technology

Through the incorporation of a new cyan coupler (X-Coupler Technology), which features a new molecular structure developed by Fujifim's proprietary technologies, this material is capable of reproducing the subtle shades of green and of forming colors of high purity, such as vibrant blues and reds.

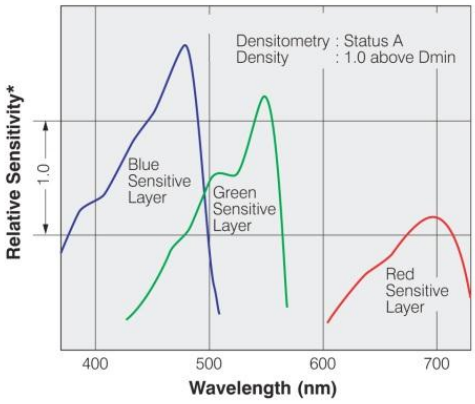
11.2 NLS (New Low Stain Spectral Sensitizer) Technology and ARR (Advanced Resistance to Radiation) Technology

FUJIFLEX CRYSTAL ARCHIVE PRINTING MATERIAL has not only WE (White Enhancing) Technology but also incorporated NLS Technology, which is Fujifilm's LSS Technology taken to a higher level. The results are more brilliant, purer whites and clearer and more distinct highlights. In addition, ARR Technology, an advance over the previous RR Technology, has been incorporated to suppress color paper fogging caused by ambient radiation, enhancing the maintenance of white purity in unexposed color material.

12. Characteristic curve

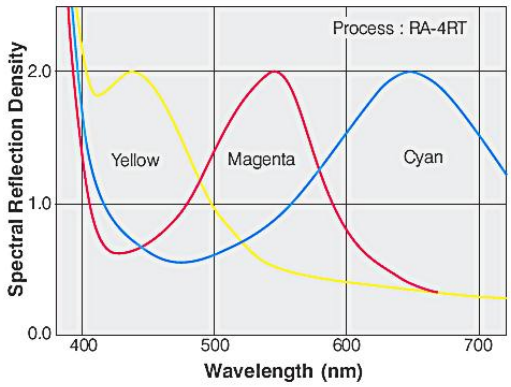


13. Spectral sensitivity curves



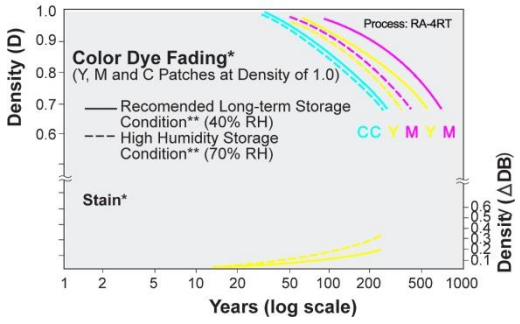
* Sensitivity equals the reciprocal of the exposure (J/cm^2) required to produce a specified density.

14. Spectral dye density curves

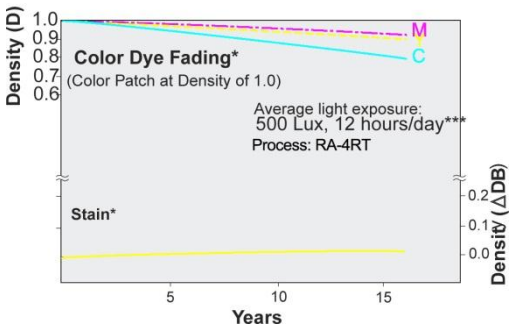


15 Image storage characteristics

- **Estimated Dark Storage Stability at 25** ℃ (77℉)



- **Estimated Light Storage Stability under 500 Lux Intermittent Illumination Conditions*****

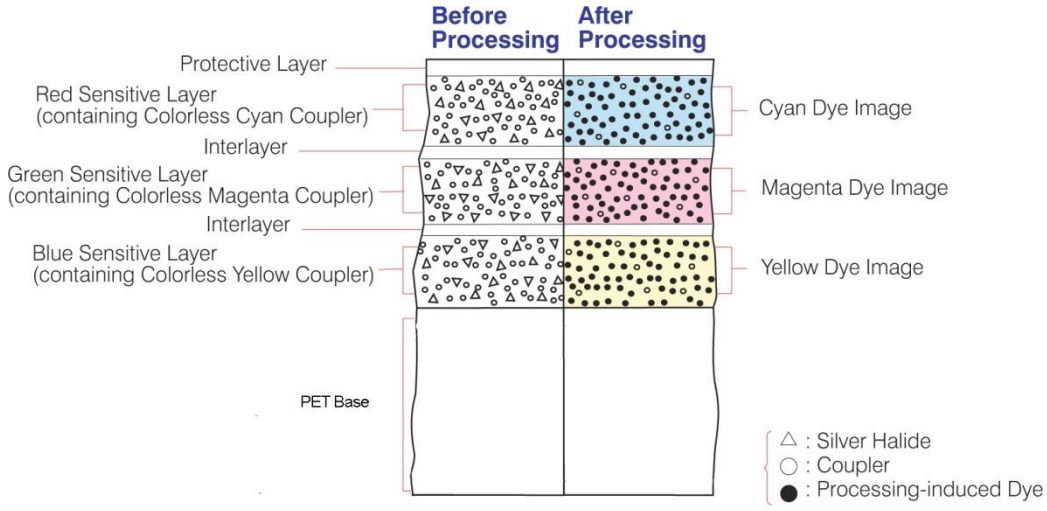


* Time-induced white background staining (yellowing) is as important as dye image fading in affecting image quality.

** In regard to color image dark storage stability, the level of humidity is just as important as temperature. For this reason, more accurate evaluations can be made by using the two humidity standards – one for high humidity storage conditions (70%RH) and that recommended for long-term storage (40%RH).

*** Since in common domestic situations sunlit areas may be bright as 1,000 lux or more during the day and drop to 300 lux in the evening and at night, storage conditions are usually designated to be at an average of 500 lux of light exposure for 12 hours per day.

16. Material structure



17. Calibration data for printers

Equipment		Software	Calibration data			
Brand	Name		LUT + Target density RGB Flex	Basic calibration ymcd	Intermittance rgb	Thickness
ZBE Chromira	SE, Pro Lab, R2R		2.60 / 2.55 / 2.40	n.a.	n.a.	n.a
Polielettronica	Laserlab 50/76/127		Printer defines own and highest possible Dmax settings (exposure vs chemistry relation)			
Durst	Epsilon		2.60 / 2.55 / 2.40			n.a
	Zeta					n.a
	Theta 50/51					n.a
	Theta 76/76HS					n.a
	Lambda			79.86 / 21.25 / 0.00 / 139.62		n.a
OCE Lightjet	430 / 500XL / 5000		Media target can be downloaded from the Fujifilm Europe .eu website			

All recommended Dmax values can only be reached when using high active chemistry equal to Fujifilm CPRA Digital Pro AC

For competitive and recycling chemistry the Dmax should be reduced with -0.10 density

* Media target location: http://products.fujifilm.eu/support/color_management/photographic/oce.html

* Profiles location : http://products.fujifilm.eu/support/color_management/photographic/

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