

EkoCure™ F UV Flexo Inks

EkoCure F™

- Is a UV LED curing flexo ink with excellent color strength and good press performance with 16 watt/cm² lamps;
- Is recommended for printing on most paper and synthetic label substrates including shrink materials;
- Is available in 4-color process set, Pantone® base shades, and high lightfast shades.

Application Areas

EkoCure F™ is developed as a general purpose UV LED Flexo product for self adhesive applications, wrap around labels, tickets / tags, boards, and shrink applications.

Technical Specifications

Printing Presses

EkoCure F™ will work on all existing narrow web flexo presses, provided they fulfil the conditions mentioned in this data sheet. EkoCure F™ has been engineered to work in traditional open flexo units as well as chambered doctor blade systems.

Printing Conditions

The following parameters are recommended when printing with EkoCure F™.

Parameter		Pantone® UEF	Process range
Anilox Roller	Lines/inch	400 - 700	800 - 1200
	Vol bcm	2.5 – 4.0	1.25 – 2.0
UV LED Lamp	Irradiance output	16 w/cm ²	16 w/cm ²
		395 nm preferred*	395 nm preferred*
Print speed	ft/min	100 - 750	100 - 750

*Other LED lamp specifications can be suitable based on application needs (speed, etc.). Please consult Flint Group for lamp recommendations.

EkoCure™ F technology is formulated for “dual cure” meaning these inks will cure using conventional arc lamps (400 watt/inch) also.

Based on internal tests, the above anilox/film weight is required to give the respective color strength listed.

However, many other factors can affect the final printed result, so we always recommend to finger print any new designs or presses to determine the conditions required before starting commercial runs with EkoCure F™.

Physical Properties

EkoCure F™ is press ready, combining easy handling with optimum press and print performance.

Shelf Life

EkoCure F™ has a 12 month shelf life guarantee. This guarantee covers 12 months from the date of shipment providing that the following storage guidelines are followed:

- Store between 60-70°F (15-20°C).
- Do not expose to direct sunlight or heat. If possible, store in a cool, dark room, or in any dark opaque container.
- Please make sure your pressroom and ink room lights are properly filtered or inks will prematurely cure!

It is important to stir EkoCure F™ before use to ensure product homogeneity.

Combination Printing

EkoCure F™ is suitable for printing in combination with any other Flint Group Narrow Web product. It should, however, be noted that depending on the print order and product chosen, the use of additives may be required for an optimum result. We recommend you use other EkoCure™ products for best results.

For further technical information, please refer to the individual, product-related technical data sheet.

Variable Information Printing (VIP)

EkoCure F™ is suitable for use in most VIP applications. Due to the wide range of materials in use, however, we recommend to speak with your local Flint Group Narrow Web technical contact for specific recommendations.

EkoCure F™ has suitable acceptance of hot/cold foil & thermal transfer ribbon.

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The printing conditions used with EkoCure F™ may also affect the acceptance of VIP; therefore we recommend testing specific combinations before starting the print run. In some applications, best results are obtained when a suitable varnish is first applied.

We do not recommend the use of opaque white, metallic or fluorescent inks in combination with thermal printing, as these can cause excessive wear to the print head.

Materials Recommendations

EkoCure F™ has been designed to have good adhesion properties and has proven to adhere to a wide range of synthetic materials.

EkoCure F™ is tested and found to be suitable on a wide range of self adhesive materials including:

- Cast coated papers
- Machine coated papers
- Uncoated paper
- Top Coated thermal paper
- Polyethylene (PE)
- Top Coated PE
- Polypropylene (PP)
- Top Coated PP
- BOPP
- Shrink Films (PET-G, PVC, etc)

We do not recommend EkoCure F™ for use on non-coated thermal papers. For this application we recommend Thermokett HR™.

For synthetic materials, a surface energy of 38-42 dyne/cm is required to achieve good adhesion. Corona treatment in line is recommended for best results. Due to the variation between material types from different suppliers, we recommend to follow any specific recommendations from your supplier. We further suggest to always test new materials before starting a new design.

Resistance Properties

EkoCure F™ will obtain optimal resistance properties 24 hours after printing, assuming correct cure conditions have been followed.

Full details of resistance properties for each product are shown on page 4.

In each scenario, the following test methods have been used:

- Lightfastness: ISO 2835:1974
- Solvent, Soap, grease, alkaline, resistance: ISO 2836:2004

Lightfastness figures and all resistance properties are based on the supplier information for each of the pigments used.

Where lightfast shades are required, we recommend using EkoCure F™ High Resistant shades. It should be noted that while EkoCure F™ is resistant to chemicals and solvents when printed under correct conditions, there may still be some shade bleeding depending on the pigment chosen. Non-bleeding alternatives are available.

General

EkoCure F™

- complies with EN 71-3, EC directive 88/378/EEC and CONEG
- Benzophenone, 4-MBP, ITX and HDODA are not intentionally added to EkoCure F™
- may meet food packaging requirements, assuming that suitable cure is achieved and that an F&DA functional barrier is used; but the final person placing the pack on the market should ensure that the package is compliant
- does not contain raw materials listed on the EuPIA exclusion list

Health, Safety and handling

EkoCure F™

- should be stored at temperatures around 60-70°F.
- should not be exposed to direct unfiltered lighting, sunlight or heat.
- should not be allowed to freeze.
- should not be mixed with any other UV, WB or conventional ink.
- waste should be sent for incineration or handled in compliance with local, state and federal laws.
- is classified as an irritant, and therefore all skin and eye contact should be avoided. Personal protective equipment including protective clothing and gloves should be used. We recommend nitrile disposable

gloves, but you should check with your supplier for suitability in contact with UV materials.

Please refer to the MSDS for full and latest labeling information.

Printing Advice

Additives

- **UAA01084 UV adhesion promoter**
A 3-5% addition will improve the adhesion to PP, PVC, metallized and other difficult substrates. If more than 5% is required, we recommend adding extra photoinitiator.
NOTE: Adding high levels into the base ink can affect the overprintability and viscosity.
- **UAA01078 UV Antifoam**
0.25% can help reduce foaming on the press. This should be carefully added and it is important that it is thoroughly mixed into the ink.
- **UAI00146 Initiator for all Colors**
Max. 3% may be added to increase the curing speed of colors. It will discolor opaque white or pastel shaded ink.
- **UAI00139 Initiator for Opaques & Clears**
Max 3% can be added to increase curing speed of opaque whites, clears and pastel shades.
- **UAR01014 Reducer**
An addition of 1% will reduce viscosity by 5%. If more than 5% is added, we recommend using additional photoinitiator. The addition of reducers can also help flow out on difficult substrates.

UV Varnishes

The use of UV LED varnishes may improve the chemical and rub resistance of EkoCure F™.

Acceptance of VIP may also be further improved when a suitable UV LED varnish is applied.

Cleaning

- As long as EkoCure F™ is not exposed to UV light, short wave length visible light (unfiltered fluorescent lights) or direct sunlight, it will not cure in the press. Therefore it is not necessary to wash the press immediately after printing. (It is advisable to cover or shield any uncured ink while in or on press).
- To clean rollers, plates and other equipment, we recommend CLU01015 with a final IPA wipe. To our knowledge, CLU01015 does not affect EPDM rollers or printing plates.

Troubleshooting

- For color matching advice please refer to our support databases. These are available from your local Flint Group Narrow Web technical representative.

Product Overview

Shade		Article number	Light fastness	Solvent resistance	Soap resistance	Grease resistance	Alkaline resistance
High Strength Pantone® shades	Yellow	UEF10031	4	+	+	+	+
	Yellow	UEF10034	6	+	+	-	+
	GS Yellow	UEF10037	4	+	+	+	+
	Orange 021	UEF20033	5	(-)	(-)	+	+
	Warm Red	UEF30005	5	+	+	+	-
	Rubine Red	UEF30002	4	+	-	+	-
	Rhodamine Red	UEF30003	3	-	-	+	-
	Red 032	UEFP0032	5	(-)	(-)	+	+
	Violet	UEF40013	3	-	-	+	-
	Violet	UEF40010	8	+	+	+	+
	Purple	UEF40012	8	+	+	+	+
	Purple	UEF40011	3	-	-	+	-
	Reflex Blue	UEF50021	8	+	+	+	+
	Reflex Blue	UEF50023	3	-	-	+	-
	Process Blue	UEF50022	8	+	+	+	+
	Blue 072	UEFP0072	8	+	+	+	+
	Green	UEF60052	8	+	+	+	+
	Black	UEF80071	8	+	+	+	+
	Opaque White	UEF90100	8	+	+	+	+
HR Pantone® shades Standard Strength	Yellow	UEF10035	7	+	+	+	+
	Orange 021	UEF20025	8	+	+	+	+
	Warm red	UEF30017	8	+	+	+	+
	Rubine red	UEF30016	8	+	+	+	+
	Rhodamine red	UEF30009	8	+	+	+	+
	Red 032	UEFP0033	8	+	+	+	+
HD Process	Process Yellow	UEF10080	4	+	+	+	+
	Process Magenta	UEF30080	4	+	-	+	-
	Process Cyan	UEF50080	8	+	+	+	+
	Process Black	UEF80080	8	+	+	+	+

Resistance Scale

+ = very resistant

(-) = adequate resistance (3 on a 5 point scale)

- = poor resistance

Light fastness (Blue Wool scale)

8= excellent

1 = very poor