FINAT
Linking the Label Community

Fujifilm: leading the transformation from Analogue to Digital

Dr. Karl Borsky

The association for the European self-adhesive labelling and adjacent industries

1

FINAT
Linking the Label Community

Challenges for our industry

Sustainability

Cost of energy

Regulatory issues – demand for low migration/IDFC products

Job sizes are going down – need for short runs

Let me show you solutions from FUJIFILM:

The association for the European self-adhesive labelling and adjacent industries

2

Slide 3

FINAT
Linking the Label Community

Why waterwashable plates

Why to change the plate making system to water wash

FLENEX

Water washable Flexo plates

- Environmental and safety benefits of eliminating solvents
- Reduces the time for plate making
- Improves print quality (reduces swelling and dot gain)
- Reduces the total cost in-use of plates
- Ability to reduce or eliminate need for duplicate plates (stable)
- Not Oxygen sensitive (flat dots)

The association for the European self-adhesive labelling and adjacent industries
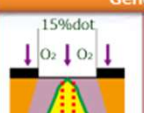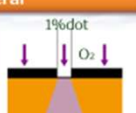
3

Slide 4

FINAT
Linking the Label Community
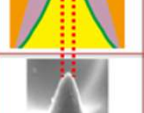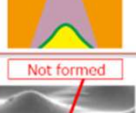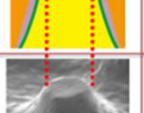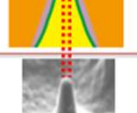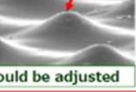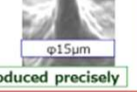
Flenex plates are not sensitive to Oxygen

2. High Quality

Mechanism of Flat-Top-Dot shape on plate

FLENEX

	General		FW-L	
O₂ effect	15%dot	1%dot	15%dot	1%dot
Illustration of UV Exp.				
Cross link				
Dot shape 175lpi 2,540dpi	φ15μm	Not formed	φ55μm	φ15μm
	Digital data should be adjusted		Digital data is reproduced precisely	

O₂ can't migrate to photosensitve layer due to Advanced Material.   3

The association for the European self-adhesive labelling and adjacent industries
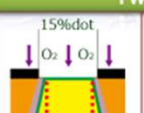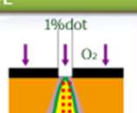
4

28-11-2022

5

Flenex Plate portfolio

- FW-A
  - Analogue film exposure
- FW-L2
  - Standard digital UV resist plate
- FW-FP
  - Solvent resistant plate for Flexible Packaging applications
- FW-(A) (L) V
  - Varnish plate with thicker more rigid backing liner
- FW-L (2.54 and 2.84)
  - Corrugated and sack printing applications
  - Investigating viability of widespread launch.

The association for the European self-adhesive labelling and adjacent industries

6

Flenex plates

Water washable plates

FLENEX

High quality water washable

Flexo plates

Highest Flexo quality – reproduction of finest details

Class leading **productivity**

Mild **washout with water** and dishwasher soap

Much **more durable** and cost effective

Less **environmetal** impact

The association for the European self-adhesive labelling and adjacent industries

7

Plate processors: Clam shell / Semi automatic

Equipment for water washable Flexo plates

Washout with water and dishwasher soap

The association for the European self-adhesive labelling and adjacent industries

8

Plate processor overview

C–Touch processors:

- For small inhouse plate production
- 25/30 & 30/40 processors for Flexo applications, 36/48 for varnishing applications (offset)

SB 938 processors:

- For inhouse plate production/ Repro houses
- Max. plate size 900 x 1200 (36/48)

Large Format processor

- Max. plate size (42/60) soon to come

Equipment for small to large demands

The association for the European self-adhesive labelling and adjacent industries

9

PRC 1 filtration unit

To reduce waste water

Waste water filtration unit

- Extents the bath life significantly – up to 5 times
- Filters 99% of all solid content
- Reduces the amount of waste water to be disposed significantly

The association for the European self-adhesive labelling and adjacent industries

10

Slide 11

FINAT
Linking the Label Community

Why UV Flexo inks

No additional solvents needs for printing

Sustainable, no emissions

Very good print quality due to very low dot gain

Ink portfolio of FUJIFILM:

The association for the European self-adhesive labelling and adjacent industries

11

Slide 12

FINAT
Linking the Label Community

Portfolio overview Sericol Flexo inks

- JD Convectional UV
- JJ LED Inks
  - JJ will cure conventionally too
  - Formulated to match existing JD – ease of conversion
- JF (IDFC)
  - Conventional Indirect Food Packaging Compliant
  - Pre-launch phase

The association for the European self-adhesive labelling and adjacent industries

12

JD UV ink range - key attributes

- Strong colours
- Class Leading white inks
- Same colouristic as JJ & JF – Easy conversion for existing customers
- Press Ready Formula – suitable for open chamber systems
- Benzophenone and ITX Free formula
- Bespoke Pantone system

The association for the European self-adhesive labelling and adjacent industries

13

JJ UV LED ink range – key benefits

- Same Colouristics as JD – Easy conversion
- Tested on Activ and global branded LED UV Curing Systems
- Press Ready Formula – suitable for open chamber systems
- Extremely Fast Curing tested at 200m/min
- Bespoke Pantone System

The association for the European self-adhesive labelling and adjacent industries

14

LED vs. conventional UV Inks

- Why are different formulations required?
  - LED Inks are tuned to a specific wavelength generally 395 nm
- What are the benefits of LED inks versus Conventional
  - cure rate
  - adhesion
  - wider range of substrates can be converted
- What are the challenges with LED inks?
  - formulations tend to have a high Photoinitiator content
    - this inevitably leads to a slightly higher cost of ink formulation
- On press properties of the LED inks is equivalent to conventional UV inks

The association for the European self-adhesive labelling and adjacent industries

15

JF UV Ink Range - Indirect food contact

Currently in pre-launch phase

- EuPIA terminology
  - Commonly referred to as Low migration
    - Competitors offer inks with varying levels of compliance
  - IDFC declaration does not guarantee convertor is compliant
    - Convertor must follow Best Manufacturing Practice
    - **All** manufacturers IDFC ink ranges declare convertor has full responsibility for compliance
- Same Colouristics as JD – Easy conversion
- Highest level of compliance
  - Formulated in line with EuPIA exclusion policy
  - Nestle list compliant
  - Swiss Ordinance compliant
- Bespoke Pantone System

Ready for printing primary packaging

The association for the European self-adhesive labelling and adjacent industries

16

17

UV curing equipment: why LED versus Mercury

- Mercury Arc Lamps have a limited life expectancy, particularly in Europe (EU Directive – Mercury in the Workplace deadline 2027)
- LED systems have lower power consumption / operating costs
- No exhaust necessary due to no Ozone generation
- Strongly reduced Carbon Footprint
- Less heat generated suitable also for sensitive substrates

Lower energy consumption

The association for the European self-adhesive labelling and adjacent industries

18

FINAT
Linking the Label Community

LED System - Environmental Impact

- Significant reduction in power consumption
- CO_2 emissions dramatically reduced
- Mercury use and disposal eliminated
- Reduction in waste label stock – greater stability
- Significant reduction in downtime
  - No power up/down.
  - Reduced maintenance
  - Longer lamp life – 1000 hrs vs 20.000+ hrs
- Improved working environment and H&S for operating staff
  - Noise reduction, no extractor fans required
  - Significant heat reduction
  - More comfortable for operators

ACTIV

Energy/cost saving calculator available on request

The association for the European self-adhesive labelling and adjacent industries

19

FINAT
Linking the Label Community

Activ Hybrid UV LED Curing system

- At 42 W/cm this is one of the highest output LED systems on the market whilst maintaining low power consumption – allows system to run well below full output generally 50%
- Hybrid 'hot swap' Cassettes
  - can run both conventional UV and LED
  - can run dedicated LED
- Fully integrates into machine controls
- Language Options
- 2 years warranty – lamps

42 W/cm LED output

The association for the European self-adhesive labelling and adjacent industries

20

Activ - Features

- Activ system can be easily installed as retro fit to existing press or on any new press
  - Retro fit will future-proof capital equipment
- The system is developed in conjunction with the LED inks to optimize performance
- Fujifilm is the only supplier to offer both inks and UV LED systems
  - one point of contact for support
  - optimizes new product development

LED system and inks from one supplier

The association for the European self-adhesive labelling and adjacent industries

21

Imprinting bars

Suitable for upgrading current machines

Need for printing variable data

Integration on existing machines

FUJIFILM imprinting system:

The association for the European self-adhesive labelling and adjacent industries

22

Inkjet to Complement existing machines

FINAT — Linking the Label Community

- Digital inkjet printing is a flexible technology that can be integrated into a range of processes that may include
  - Offset or flexographic presses
  - Corrugators
  - Finishing lines - Sheeters, Folding & Gluing Machines,
  - Filling and Packing Lines
- Inkjet implementation can be print selected lanes or full width printing
  - Monochrome
  - Spot colors
  - Full process color
  - Embellishments

The association for the European self-adhesive labelling and adjacent industries

SAMBA mini 4300 system

FINAT — Linking the Label Community

- Single pass inkjet imprinting system
- Each printbar contains a single 1.6" width printhead (40 mm)
- Up to 4 printbars per system
- 1200 DPI Native Resolution
- Speeds up to 1000 feet per minute
- Monochrome, Spot color or 4-Color
- Aqueous & UV

The association for the European self-adhesive labelling and adjacent industries

SAMBA mini 4300 system

System includes:

- Up to four Printbars
- Controller
- PC Interface
- Fluid system
- Encoder and trigger
- Optional mounts and accessories

The association for the European self-adhesive labelling and adjacent industries

25

Jet press 750 / 750S

What sets the Jet Press 750S High Speed Model apart?

Highly **versatile**

Strong **environmental performance**

Industry-leading **ultra-high quality**

A **proven** solution

Profitable

Incredibly productive for short run print

Need for fully digital machine printing sheets

Integrated unit for waterbased primer

The association for the European self-adhesive labelling and adjacent industries

26

Food safe packaging ink

Low migration, aqueous food safe ink ink available for Jet Press 750S Standard Model Approved for primary food packaging

Complies with stringent primary food contact regulations, including Swiss Ordinance 817.023.21 and European Commission Regulation 1935/2004

The association for the European self-adhesive labelling and adjacent industries

27

High speed digital printing

Superb productivity

5,400 sheets/hour

The fastest 4 colour, B2 sheetfed inkjet digital press available

The association for the European self-adhesive labelling and adjacent industries

28

Specifications of JP 750S

Jet Press 750S High Speed Model	
Printing	
Printheads	Next generation Samba printheads
Colours	4 colour, CMYK, extended gamut (High Quality mode)
Resolution	1,200 x 1,200 dpi (High Quality mode) or 1,200 x 600 dpi (High Performance mode), VersaDrop technology with 4 level greyscale
Productivity	Up to 3,600 B2 sheets per hour (High Quality mode) or 5,400 B2 sheets per hour (High Performance mode), static and variable jobs
Workflow	XMF Workflow V6.x or later, or a third party workflow with XMF Processor
Variable data capability	Yes, thanks to barcode system and high capacity data transfer
Substrate	
Maximum sheet size	750 mm x 585 mm
Printable area	733 mm x 567 mm
Thickness	0.09 mm - 0.34 mm When configured for heavier, folding carton stocks: 0.2 mm – 0.6 mm
Type	Standard offset coated and uncoated paper Canvas Heavier duty folding carton board Some plastics

The association for the European self-adhesive labelling and adjacent industries

---

Fully digital solutions – printing web to web

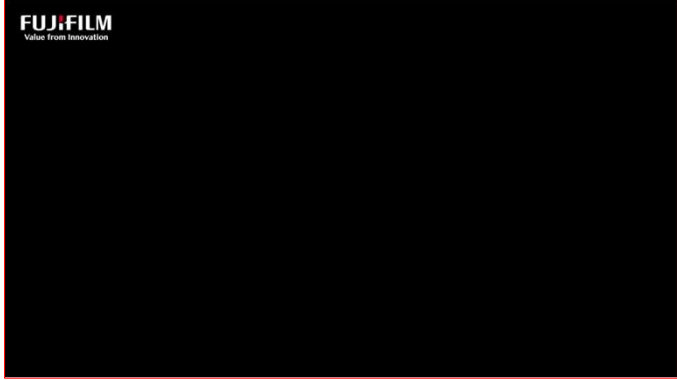**Need for fully digital machine printing web to web**

Waterbased inks

Soon to come

FUJIFILM JetPress FP 790:

The association for the European self-adhesive labelling and adjacent industries

FINAT
Linking the Label Community

Video of FP 790

The association for the European self-adhesive labelling and adjacent industries

31

FINAT
Linking the Label Community

Fujifilm portfolio for Labels and Packaging

- Flenex plates / processors / filtration unit
- Sericol/Fujifilm UV Flexo inks
- Activ LED curing system
- Fujifilm Imprinting bars
- Digital Printing with the JP 750(S)
- The future: FP 790 Digital Press

The association for the European self-adhesive labelling and adjacent industries

32

33