3 ADDITIONAL INFORMATION (FAQ)

1. CAN YUPO® BE USED ON A LASER PRINTER?

YUPO® materials are not suitable for printing on laser printing machines such as Xerox, Canon, Konica Minolta, Kodak etc. The high fusing temperature of the dry toner leads to deformation of the material. YUPOTako® XAD1077 is YUPO®'s first and so far only material that can be used with this printing method. Please ask us about machine compatibility.

2. WHY DO I HAVE TO USE OXIDATIVE DRYING INKS?

YUPO® is a synthetic material. It cannot absorb physically drying offset inks, because these are only suitable for strongly absorbing materials. Chemically (oxidative) drying printing inks dry by the evaporation of solvents in the paint on the surface of the material and are therefore ideally suitable for printing on YUPO®. However, a printed pile must be further processed within 2 days, because a ghosting effect can be caused by the vapours of solvents. In addition, regular winding of the pallet is recommended.

3. HOW DO I RECOGNIZE THE GRAIN DIRECTION OF YUPO®?

The grain direction of YUPO® is clearly visible on the label. It is always parallel to the first measurement mentioned. When tearing YUPO®, the tear along the grain direction is very straight. At 90 degrees to the grain direction, you can clearly hear the tearing and it does not run in a straight line.

4. DOES YUPO® GET STATICALLY CHARGED AND CAN IT LEAD TO PROBLEMS WHILE PRINTING?

YUPO® has a special anti-static surface. Usually there are hardly any problems caused by electrical charge when printing on YUPO®. However, the printing room should have optimal conditions (20-25°C, 50-65% RH). YUPO® should be acclimatized at least 24 hours before printing, and only be unpacked one hour before the start of printing. Static charge possibly could be higher in winter, because the temperatures and the relative humidity are low. Here, a reduction of static charge can be achieved with anti-static spray or anti-static tape.

5. DUST TENDENCY?

With YUPO®, increased amounts of dust can occur, because the inorganic fillers escape during printing and are visible on the blanket. Counter measures: adjust the cleaner and rollers on the feeder so that they are not in the printed image. Cover the suction cups on the feeder with cloth. Use the first printing to "unpowder" (Caution! Here increased static charges can occurr).

6. "SOLVENT ATTACK"

If YUPO® should be integrated into a product (e.g. adhesive-bound brochure) with normal paper it must be ensured that the complete job will be printed with oxidative drying inks. Due to the solvent gas from conventional offset ink, YUPO® could become wavy!

GENERAL FEATURES OF YUPO®

1. HEAT RESISTANCE

YUPO® will shrink with heat. We recommend the use of YUPO® from -40°C to +80°C. For a short period of time (e.g. during printing), YUPO® can withstand higher temperatures. Melting point of YUPO® is approx. 160°C.

2. TEAR RESISTANCE

YUPO® has a high tensile strength and toughness. If, however, there is a surface injury (notch), YUPO® continues to tear down very easily. Therefore, each device for cutting, drilling or stamping must be sharp and free of notches.

3. SHELF LIFE

The surface features of YUPO® change after a certain period of time. Storage up to one year is no problem. However, if this period is exceeded, YUPO® will possibly no longer be suitable for: UV printing, TTR printing, coatings. Materials for offset printing have a much higher durability and can be used easily even after several years of storage.

4. WEATHER RESISTANCE (OUTDOOR USE)

Even with strong UV radiation we guarantee for our products a resistance of at least one year. Please keep in mind that not all YUPO® products are suitable for outdoor usage.

SPECIFICATIONS SUPERYUPO®

SPECIFICATIONS	THICKNESS (micron)	BASIC WEIGHT
Super YUPO® FEB 95	95	73,2 g/m²
Super YUPO® FEB 110	110	84,7 g/m²
Super YUPO® FEB 130	130	100,1 g/m²
Super YUPO® FEB 150	150	115,5 g/m²
Super YUPO® FEB 200	200	158,0 g/m²
Super YUPO® FEB 250	250	200,0 g/m²
Super YUPO® FEBA 300	300	234,0 g/m²
QFF 350	350	353,0 g/m²
QFF 400	400	414,0 g/m²

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TECHNICAL GUIDEBOOK

SUPERYUPO®
THINK INNOVATIVE. THINK YUPO®.

YUPO®

1 PRINTING RECOMMENDATIONS

1 Acclimatize SuperYUPO® FEB before unpacking for at least 24 hours. In winter we recommend a longer time.

2 **The ideal printing-room conditions are:**
Temperature: 20 – 25°
Relative humidity: 50 – 60% RH
Feeder: Use the settings for normal illustration printing paper.
Delivery: Here, it is important that the sheets will fall gently onto the delivery pile and will not be compressed by the delivery jogger stops. Deactivate them if necessary and reduce the blast air.

3 When printing on SuperYUPO® FEB, **dot gain increases** by approximately **10%** than with illustration printing paper. Please plan for this at the prepress stage or during plate exposure.

4 Use **foil-appropriate inks.** These inks dry oxidatively and their mineral oil content is less than 3%. You can get very good results with the ink series **"Resista Label 5080" by Hostmann & Steinberg.** Additionally some drying accelerator (Speedy Dry) can be added, about 5-10%, if necessary. For **UV inks,** please also make sure to – **use foil ink series.** Please consult your ink supplier.

5 **The use of damping water should be kept to a minimum.** Because the surface of SuperYUPO® cannot absorb the surplus damping water, when excessive moisture occurs, dampening on the sheet builds up, which decreases ink acceptance or the drying process after printing will not work. Therefore we recommend **reducing the damping water** in all print units to the point that the printing begins to "smear / smudge". Then the damping must be increased slightly, until the "smearing / smudging" disappears. It happens that the ink trapping in the e.g. Magenta printing unit is interrupted, although the damping amount on the Magenta printing plate is at minimum. Here it is important to check the damping amount in the previously used printing units (black and cyan), because the effect of damping solution on the printed sheet is cumulate, and it only becomes apparent in the subsequent printing unit. As a general rule: **the higher the coverage of each individual colour on the printed sheet, the better the ink-water balance can be regulated.** When printing images with low ink coverage, place a solid bar on the edge of the sheet.

6 To achieve the best results with SuperYUPO® FEB, **increase the printing pressure** by **10-20%.**

7 I**ncrease the washing intervals** while processing SuperYUPO® FEB. We recommend **washing** the blankets after **approx. 5,000 sheets.**

8 Please use **dispersion-, UV- or print varnish** for special applications and increased **surface protection.** When printing on SuperYUPO® FEB with dispersion varnish it should be insured that the varnish should be dry immediately after leaving the printing machine. Winding the printed sheets also helps to prevent any possible sticking.

9 Higher delivery piles are possible with SuperYUPO® FEB. **Delivery piles of 60 cm** are not a problem with SuperYUPO® FEB. In UV offset printing, inks are already hardened at delivery, thus considerably higher piles are possible.

10 When using **anti set-off powder**, you can generally it based on your experience with illustration printing paper. The **particle size** should be **15-25 µm.**

11 Average **drying time*** of SuperYUPO® FEB in conventional offset printing with oxidative inks:
Ink coverage FEB with oxidative ink
100% within 1 hour
200% within 2 hours
300% within 4 hours
400% within 5-6 hours

* The indicated drying times are based on the careful evaluation of test results, conducted by YUPO® Europe. However, because there may be differences in the results of printing and drying times by chromaticity and printing conditions, please test the print quality before the final printing.

POSSIBLE FACTORS WHICH HAMPER THE DRYING PROCESS	COUNTER MEASURES
• Low room temperature (below 15°C).	• Increase room temperature.
• Too much dampening when printing.	• Reduce dampening, place solid bar on the printing plate (end of sheet), so that a higher removal of ink takes place. Increase alcohol content to reduce surface tension of the water. Visually check printing plates before printing - plates should always look dull and not shiny.
• Rollers in the printing machine (especially in the dampening system) must be adjusted.	• Make adjustment according to the manual of the printing machine.
• Using conventional offset inks or inks that are not suitable For YUPO®.	• Use only inks that are recommended for printing on YUPO®.

SUPERYUPO® – RECOMMENDED INKS * FOR CONVENTIONAL OFFSET PRINTING

MANUFACTURER	PRODUCT NAME
Brancher	Kromoplast
Colorgraf	Syntolith
Epple Druckfarben	Foil
Flint Group	Novaplast
Hostmann Steinberg	**Resista Label 5080**
O & R Inktchemie	44 For Synthetics
Sakata Inx	Ssp-707
Siegwerk	Plastoffset – Tempoplast 2
Sun Chemical	Foils 44
Van Son	Thoughtex Lr
Shackell Edwards	Multibond

* When using special inks please ensure color fastness. Especially for overprinting with dispersion varnish, the colour must have alkali resistance because otherwise the ink could run.

SUPERYUPO® – RECOMMENDED INKS FOR UV OFFSET PRINTING

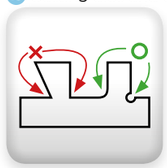
MANUFACTURER	PRODUCT NAME
Brancher	Photon S LAM
Colorgraf	Deltacure Synt
Flint-Schmidt	UF 8160 Series - UV
Hostmann Steinberg	Newv Poly
Hostag Stehlin	Newv Poly
Michael Huber Munchen	Newv Poly
Siegwerk	Sicura Plast SP
Sunchemical	Suncure FLM

12 To **prevent the ghost effect,** it is important to wind the **sheets** to remove drying gases **within 2 days**.For the UV-offset method there is no need to do this.

13 Folds should always be made **parallel to the grain direction** of SuperYUPO® FEB. When producing folding plans or maps, the direction should run **parallel to the side that has the most folds.**

14 If SuperYUPO® FEB should be combined with **normal paper** in an offset printing job, we recommend printing **the entire printing job with oxidative drying inks** to avoid impairment of SuperYUPO® FEB by solvent vapours. If you use UV inks for printing on SuperYUPO® FEB, print the **entire printing job with UV inks.**

15 Cutting dies and drills should **always be sharp and free of notches.** To prevent the emergence of notches and corners (which can lead to tears), the **inside corners must be rounded off.** Please consider this in the design of dies. When stamping and perforating YUPO®, be aware that YUPO® has a **grain direction / direction of expansion.** Holding points for a cut-out should always be attached in the grain direction to prevent tearing. **Perforations** should always start with a cut on the outer edge of the material and continue to run in the grain directions.



2 FURTHER PROCESSING

16 Before the final production, **all glues, designs, laminating films or finishing to be used** should be tested for use with YUPO® FEB

METHOD	POSSIBLE WITH YUPO®?	WHAT MUST BE NOTED?
Thread stitching	Yes	• No air between the individual folds • consider grain direction of YUPO®.
Saddle stitching	Yes	• Consider grain direction of YUPO®
Adhesive binding	Yes	• We recommend to use the hot-melt Adhesive (on EVA – Ethyl Vinyl Acetate base) • In addition, use adhesive amplifier to minimize amount of adhesive. • Longer drying time is required. • Application temperature approx.190°C. • Cold adhesives are recommended only in the combination of YUPO® with absorbent materials
Adhesive folding	Yes	• Consider grain direction of YUPO®. Adhesive must be tested in advance
Drilling	Yes	• Stacking height approx. 2-3cm • Use sharp drills
Stamping/ Perforating	Yes	• See 15
Spiral binding	Yes	• The cut-outs must be circular, to prevent tearing of YUPO®
Embossing	Yes	• No sharp embossing tools should be used. • Embossing pressure 100 – 200 kg/cm. • The temperature of the embossing rollers should be between 60 and 80°C.
Foil stamping	Yes	• Avoid high temperatures, because otherwise the material deforms. • Talk to your suppliers regarding appropriate films.
Folding	Yes	• Please consider the grain direction of YUPO®. • Bunch the folded products to avoid a burst open.
Hot sealing	Yes	• Before sealing, YUPO® should be coated or laminated on one side with LDPE (low density propylene).