Recommendations for printing and finishing of SYNAPS OM

IMPORTANT!

Please consult www.agfa.com/SYNAPS for the most recent version of this document

SYNAPS OM is a synthetic paper based on a high grade polyester.
It is coated 2-sided with an ink receptive layer. SYNAPS OM has no grain direction.

Printing

SYNAPS OM is suitable for offset, HP Indigo (sheet fed), screen, flexo, and gravure printing; SYNAPS OM90F is not suited for screen and gravure printing. It is also suitable for UV curable inkjet printing. It is not suitable for non-UV inkjet printing. It is also not suitable for electrophotography (dry toner) printing.

Offset printing recommendations
No special inks are required. No special drying agents to mix with the inks or fountain solution are recommended. For the best results consult your ink supplier.
Recommended densities (measurement on wet print, white backing) for process inks on SYNAPS OM are: K: 1.50 – C: 1.20 – M: 1.15 – Y: 1.20.
For printing pantone colours or other spot colours, use the (pantone or spot) colour sample book for uncoated paper as a reference.
When the printed job needs to be finished with a dispersion lacquer or a varnish, we recommend printing lower densities, because the printed densities will increase with 0.10 to 0.20 (typically) when dispersion lacquer or varnish is applied.
Note: too high ink densities must be avoided, to prevent drying and finishing problems.

SYNAPS OM will feed like coated paper. For optimum press feed reliability, ensure that sheets are aired (fanned) prior to printing.
Important! To avoid marking, minimize pressure of suckers and feeder-board wheels/brushes or move them outside the print area if possible.
SYNAPS OM has a very smooth surface. Only minimal squeeze (0.05 - 0.10mm) is required to ensure uniform coverage.
No intensive powdering is required. The ink sets very fast on SYNAPS OM.
For an optimum hardening of the ink layer, the printed sheets should be aired regularly.
With heat drying systems adjust temperature taking into account the heat sensitivity of the film. Pile temperature should not exceed 50 °C (122 °F); pile temperature should not exceed 40 °C (104 °F) when using SYNAPS OM90F.

Varnish or aqueous coatings
SYNAPS OM can be overprinted with varnish or aqueous coating (preferred choice).
Important! Always test before deciding to use SYNAPS OM for a specific job!

HP Indigo printing
SYNAPS OM135, OM170, OM230 and OM300 are certified for HP Indigo multi-shot sheet fed presses.
SYNAPS OM450 and OM90F are compatible with HP Indigo multi-shot sheet fed presses.
SYNAPS OM170, OM230 and OM300 are certified for HP Indigo 10000/12000 one-shot sheet fed presses.
SYNAPS OM135 and OM450 are compatible with HP Indigo 10000/12000 one-shot sheet fed presses.

SYNAPS OM can be used for variable data printing with very good printing results. For very long production runs, experience learns that the blanket needs to be replaced sooner compared to paper printing. Adjusting the blanket temperature up to a level just high enough to dry the HP Indigo ElectroInk will extend the lifetime of the blanket.

Canon ColorWave
SYNAPS has been tested with success on the Canon ColorWave 3800 printer. Use the printing mode "quality" or "high quality" for optimal print results.

Latex large format inkjet printing
SYNAPS OM is compatible with Latex large format inkjet printing but you have to take following recommendations into account. The use of SYNAPS OM90F is not recommended for latex printing.
Printing speed has to be slow (unidirectional printing in many passes) in order to avoid waviness of the substrate caused by too high drying settings. Heavy images are more prone to show these phenomena.
Always test on beforehand for critical jobs.

For best wet scratch resistance
SYNAPS OM is more sensitive for scratching when the printed substrate is wet.
Wet scratch resistance can be improved with a dedicated overprint water based dispersion lacquer. Agfa recommends Actega Terrawet Barrier Coating G 9/523. The thicker the lacquer layer, the better the wet scratch resistance (a thick layer can also be obtained by printing multiple layers)!
Always test on beforehand for critical jobs.

Converting and finishing

Guillotining
Use sharp and clean blades. Do not cut lifts higher than 5 cm (2 inches). When using SYNAPS OM90F, it is recommended to air the sheet pile in order to prevent hooking of the sheets on the cut sides.
Laser cutting and engraving
Laser cutting works well. The power of the cutting device needs to be adjusted according to the thickness of the substrate. Laser engraving is also possible on SYNAPS OM.

Die cutting
Use sharp hard steel blades with rounded inner corners. Avoid inside die-cuts less than or equal to 90 degrees. Keep retention points small and few. The best results are obtained on cylinder type presses. Platen type presses are less suitable especially for complex die cut shapes.
Always do a test before deciding to use SYNAPS OM for a specific die cut job.

Drilling
Use sharp and clean drill bits. Drills have to be free of nicks. Use short dwell times during drilling to eliminate heat generation. Don't drill too high lifts. Recommended drills are steel drills coated with Teflon (to prevent sticking). If possible, lower the speed of the drills to prevent heat generation.
Intermediate spraying on the inside and the outside of the drill with 'dry silicone spray' or intermediate drilling in wax paper (lubrication inside the drill bits) will facilitate drilling and will extend the life and sharpness of the drill significantly.
The best results are obtained with drilling equipment that have drill bit lubrication and drill bit cooling.

Rolling trimmers/cutting plotters
Rolling trimmers work well with lighter versions of SYNAPS OM. Heavier versions may give problems, depending on the equipment used. Always test on beforehand.
Heavier versions of SYNAPS OM can be cut on flatbed cutting plotter devices as this type of equipment can cut thicker substrates.

Folding and scoring
Given the fact that SYNAPS has different characteristics compared to paper and some other synthetic substrates, we recommend to perform a folding test before deciding to use SYNAPS for a specific job.
The thinner versions of SYNAPS OM can be folded on a regular folding machine. Folding can be difficult, especially with the heavier versions of SYNAPS OM. Scoring is recommended to obtain a tight fold with the heavier versions of SYNAPS OM. The ridge of the score should be on the outside of the fold.
Avoid folds that cause air entrapment, since SYNAPS OM is not permeable. It is recommended to apply pressure after folding to keep the fold tight.
Cross folding (superimposed or transverse fold) is possible with SYNAPS OM90F. Please consult our 'Recommendations for folding SYNAPS OM90F' on agfa.com/synaps for more information.

Binding
SYNAPS OM is a perfect material for Wire-O©, Unicoil-Spiral© and comb binding. Use round holes to avoid tearing.
For book covers, we recommend applying a top coating on SYNAPS OM to avoid scratching or guillotine pressure markings.
For 'perfect binding' book covers, we recommend to use SYNAPS OM up to OM170. Thicker SYNAPS OM is prone to cause cover gapping on the book spine. As glue for perfect binding books, we recommend to use EVA or PUR glue.
Important! Always do a binding test before deciding to use SYNAPS OM for a specific job!

Perforating and spiral binding
SYNAPS OM can be perforated. Keep hole punches sharp and clean.

Stitching
SYNAPS OM is not suitable for applications where stitching is used as the irregular punches from the needle(s) can promote tearing of the substrate.

Laminating
SYNAPS OM can be laminated with PET/PE film and OPP film. The operating temperature should not exceed
120 °C (248 °F).
Tests with PVC film were not successful.
Always do a test before deciding to use a SYNAPS OM for a specific lamination job.

Hot foil stamping
Hot foil stamping is possible.

Embossing
Embossing on a cylinder press works well with all SYNAPS OM weights.
On a platen press the pressure and evenness of pressure can be a problem especially with higher SYNAPS OM weights and more complex embossing forms.
Lighter SYNAPS OM weights can show a tendency to deform at the edges of the embossment.
A test prior to deciding to use SYNAPS OM with embossing is strongly recommended.