



Prints like paper.

**Frequently asked questions  
about  
SYNAPS OM**

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## 1 Ink - What are the recommended densities to offset print SYNAPS OM?

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.

## 2 Ink - Do I need special offset inks to print SYNAPS OM?

No special inks are required. No need to use special oxidative drying inks. Standard offset inks are perfect to print SYNAPS OM.

No special drying agents to mix with the inks or fountain solution are recommended.

## 3 Ink - Can I print SYNAPS OM with UV curable offset inks?

Yes. You can print SYNAPS OM with UV offset. Set the UV lamp power up to a level just high enough to cure the ink. The thinnest grades or more prone for waviness caused by the heat of the lamps so we recommend to perform a test before you decide to use thin SYNAPS OM.

LED UV lamps generate less heat and are therefore less prone to cause waviness of the substrate.

LEC (Low Energy Curing) UV inks are also compatible with SYNAPS OM.

## 4 Ink - Can SYNAPS OM be overprinted with varnish or aqueous coating (dispersion lacquer)?

Yes. Varnish is in fact a transparent ink so we don't print a too thick layer of varnish onto a full colour job. The coating layer could get saturated when you apply a too thick layer which could result in ink drying problems and offsetting problems. When you apply a varnish the colour densities increase and therefore we recommend printing at somewhat lower densities before you apply the varnish.

When you need to overprint with a varnish, UCR (under colour removal) is recommended.

Because SYNAPS OM has a coating layer that absorbs the ink (and varnish) very well, you will notice a gloss effect on areas with high image coverage and a mat effect on areas with no or little image coverage when you apply a gloss varnish.

To avoid these gloss and mat effects, we recommend to apply an aqueous coating (dispersion lacquer) when you want to protect the printed image on SYNAPS OM because lacquer units on printing presses apply a thicker layer. Due to the fact that dispersion lacquer is instant dry, a printer even has the possibility to apply multiple layers so higher gloss + better image protection can be achieved.

## 5 Ink - Is SYNAPS OM suitable for offset poster printing applications?

Yes. We advise the customer to choose inks with high light fastness properties (scale 1 - 8). Especially yellow and magenta are prone for colour fading after prolonged exposure to sunlight.

Every ink supplier has ink series with higher light fastness properties so talk with your ink supplier.

With dispersion lacquers and overprint varnishes, you increase densities and improve the light fastness properties.

There are special UV coatings in the market with colour protecting properties so when you overprint the posters with such a dedicated UV coating, you achieve higher densities and better print protection.

## 6 Ink - What are the recommendations when ink offsetting problems occur?

Conventional ink types are recommended to print on SYNAPS OM. Special oxidative inks are more prone to cause offsetting problems.

If you print process colours, please follow the ink density recommendations from our printing guidelines (K: 1.50 – C: 1.20 – M: 1.15 – Y: 1.20).

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If you print pantone colours, use the pantone colour sample book as a reference for adjusting the print density.

It is important is that you use the printed sample book for uncoated paper, not for glossy paper. If not, you might print too high densities which can result in saturation of the SYNAPS OM coating layer with possible problems like slow ink setting, insufficient ink drying and offsetting.

Another attention point is the ink/water mix. Best printing results and ink drying properties are obtained when a printer prints 'on the edge' meaning that he prints with a dampening level just high enough to keep the non image parts clean. Lower dampening level means lower ink level and less emulsification on the press => best printing condition.

Please ask the printer to check the recommendations for mixing the fountain solution additive. Maybe he mixes a too high dosage which has a negative effect on the ink drying. When he uses an automatic fountain solution dosage mixing system, please ask him to check if the dosing system works correct (you can ask him to switch off the dosage system, empty the fountain tank and try again with a correct fountain solution mixture made by hand).

When a printer has everything under control on his offset press, no offsetting problems occur with SYNAPS OM.

When printing very heavy and dark images (e.g. >250% image coverage), slight anti set-off powdering is recommended.

## 7 Printing - How can I reduce cost in make-ready sheets when offset printing SYNAPS OM?

In case a customer needs to print short runs with many plate/image changes, the cost of SYNAPS OM can be a disadvantage. A printer can use uncoated paper with the same gauge as the SYNAPS OM for make-ready sheets. This paper is cheap and perfect as a work around solution to tackle the high cost of SYNAPS OM make-ready sheets.

When he prints recommended densities for uncoated paper, he will print too high densities when he starts printing on SYNAPS OM afterwards so he must print to densities that are about 0.25 lower than what is recommended for printing on uncoated paper.

When he then switches over to SYNAPS OM, he should be more or less right on target. Minor adjustments are however still possible.

## 8 Printing - Can I print SYNAPS OM with UV inkjet?

Yes. Our experience is that the UV inkjet printing press operator has to find a good working point for printing UV inkjet on SYNAPS OM. Press settings depend on image coverage and type of inkjet printing press (and especially type of UV lamps).

To achieve a good working point, the operator has to 'play' with: UV-power, vacuum setting, roll tension, printing speed, ink layer (% image coverage).

To avoid waviness of the substrate, please advise the operator to set the UV-power just high enough to cure the ink. LED UV lamps or less prone for waviness of the substrate.

## 9 Printing - Can I print SYNAPS OM on HP Indigo presses?

SYNAPS OM135, OM170, OM230 and OM300 are certified for HP Indigo multi-shot sheet fed presses.

SYNAPS OM90F and OM450 are compatible but not certified for HP Indigo multi-shot sheet fed presses (no certification for OM450 because weight is beyond HP Indigo specification (max. 350gr / 400 $\mu$ )).

SYNAPS OM170, OM230 and OM300 are certified for HP Indigo 10000/12000 one-shot sheet fed presses.

SYNAPS OM90F, OM135 and OM450 are compatible with HP Indigo 10000/12000 one-shot sheet fed presses.

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.

For printing SYNAPS OM on HP Indigo web presses you need to apply a primer before printing.

## 10 Printing - Can I print SYNAPS OM on Canon ColorWave printers?

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

## 11 Printing - Can I print SYNAPS OM on latex inkjet printers?

Latex printing on SYNAPS OM is possible but you have to take following recommendations into account.

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.

We recommend you to search for the best working point and test on beforehand for critical jobs.

## 12 Printing - Can I print SYNAPS OM on Riso duplicators?

No. SYNAPS OM is not compatible with Riso duplicator systems.

## 13 Printing - Can I print SYNAPS OM on Océ Colorwave printers?

No. The print result looks ok but the printed images are very sensitive for marking caused by guiding wheels of the printer. The printed images are also very scratch sensitive so we do not recommend using SYNAPS OM on these types of presses.

## 14 Printing - Can I use SYNAPS OM on desktop inkjet printers?

No, SYNAPS OM is not compatible with desktop inkjet printers. The coating layer of SYNAPS OM rejects the water based ink.

## 15 Printing - Can I use SYNAPS OM for screen printing?

Yes. SYNAPS OM was tested successfully on UV and solvent screen printing presses.

## 16 Printing - Can I use SYNAPS OM on flexo printing presses?

Yes. We tested SYNAPS OM with water based flexo ink (hot air drying) and UV flexo ink (UV lamp curing).

Both tests were successful.

## 17 Printing - Can I use SYNAPS OM on thermal transfer printers?

Yes. We successfully tested SYNAPS OM on a Thermaline T5000R thermal transfer printer equipped with a wax/resin ribbon.

## 18 Printing - Can I use SYNAPS OM on Komori Impremia IS29 or KonicaMinolta AccurioJet KM-1 UV inkjet presses?

Yes. We successfully tested the complete SYNAPS OM range on both digital presses in duplex printing mode.

## 19 Finishing - Can I cut SYNAPS OM on guillotine cutting machines?

Yes. The hardened steel cutting blade has to be sharp and clean for optimum cutting result. Don't cut lifts higher than 5cm (2 inches). The angle of the cutting blade is important. The sharper the angle of the blade, the cleaner the cut.

## 20 Finishing - Can SYNAPS OM be used for 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 to avoid tearing when you take away the waste material. The best results are obtained on cylinder type presses. Platen type presses are less suitable especially for complex die cut shapes. For die cutting the thickest SYNAPS OM gauges, you can consider to use dies for die cutting polycarbonate cards. These dies are very hard and produce the cleanest cuts.

## 21 Finishing - Can I cut SYNAPS OM on laser cutting equipment?

Yes. 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.

## 22 Finishing - Can I cut SYNAPS OM on rolling trimmers and cutting plotters?

Yes. Rolling trimmers and cutting plotters work well with the lighter versions of SYNAPS OM. Heavier versions may give problems, depending on the equipment used. Before you decide to use SYNAPS OM, a test is recommended.

Heavier versions of SYNAPS OM can be cut on flatbed cutting plotter devices as this type of equipment can cut thicker substrates.

## 23 Finishing - Can I drill SYNAPS OM with graphic drilling equipment?

Yes. 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.

## 24 Finishing – Can I stitch SYNAPS OM?

Yes but you have to take into account that the irregular punches from the needle(s) can promote tearing of the substrate so therefore we do not recommend stitching for e.g. flag cord applications or other applications where there is a possible sensitivity for tearing.

## 25 Finishing - Can I fold SYNAPS OM on regular folding equipment?

SYNAPS OM135 can be folded on a regular folding machine. Folding can be difficult with heavier versions of SYNAPS OM. Cross folding (superimposed or transverse fold) is not recommended for all gauges.

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.

It is recommended to apply extra pressure after folding to keep the fold tight.

SYNAPS OM90F can be folded on regular folding equipment. Avoid folds that cause air entrapment, since SYNAPS OM90F is not permeable.

Please consult 'recommendations for folding SYNAPS OM90F' on our website for more specific information.

Important! Always do a folding test before deciding to use SYNAPS OM for a specific job!

## 26 Finishing - Can SYNAPS OM be laminated.

Yes. 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.

## 27 Finishing - Can I emboss SYNAPS OM?

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 thicker SYNAPS OM grades and more complex embossing forms. We recommend using hardened embossing moulds.

Before you decide to use SYNAPS OM for embossing, a test is strongly recommended.

## 28 Finishing - Can I use SYNAPS OM for ultrasonic welding?

No, SYNAPS OM is not suitable for ultrasonic welding.

## 29 Finishing - Can I use SYNAPS OM for book finishing?

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 marking.

SYNAPS OM90F is also perfect material for production of 'perfect binding' books (with PUR or EVA (hotmelt) glue).

For 'perfect binding' book covers, we recommend to use SYNAPS OM up to OM170. Thicker SYNAPS OM is prone to cause cover gapping at the book spine. As glue for perfect binding books, we recommend to use EVA or PUR glue. Always do a binding test before deciding to use SYNAPS OM for a specific job!

## 30 Finishing - Can I use SYNAPS OM for hot foil stamping?

Yes. SYNAPS OM can be used for hot foil stamping.

## 31 Miscellaneous - Is SYNAPS OM writable?

Yes, SYNAPS OM is writable with ballpoint, fountain pen and pencil. The porous coating of SYNAPS OM however makes erasing impossible. When you use an alcohol or solvent based marker pen, the coating layer of SYNAPS OM can be dissolved certainly when you apply more streaks on the same spot.

We also performed a test with a highlighter pen (text marker pen) on SYNAPS OM and we did not notice any dissolving of the coating layer.

## 32 Miscellaneous - Does the whiteness of SYNAPS OM change due to exposure to sunlight?

SYNAPS OM becomes slightly yellowish after prolonged exposure to 'unfiltered' sunlight. After this shift, the level of whiteness remains the same.

After prolonged exposure to 'filtered' sunlight (e.g. on the dashboard of a car), SYNAPS OM becomes however slightly whiter.

Important note: In neither of both tests did SYNAPS OM show any sign of brittleness or deterioration.

## 33 Miscellaneous - Can I use SYNAPS OM for underwater applications?

Yes. When you submerge SYNAPS OM in water the SYNAPS OM coating layer soaks up water which results in a coating layer that becomes more scratch sensitive. This means that, when you would treat soaked wet SYNAPS OM rough (e.g. throwing something heavy on SYNAPS OM or throwing something sharp on SYNAPS OM), you might damage printed SYNAPS OM and lose image parts.

When you submerge SYNAPS OM in water without scratching the coating layer or rough handling, nothing will happen. After drying, the SYNAPS OM coating layer is again as scratch resistant as before the submersion in water.

The wet scratch resistance of SYNAPS OM can be improved significantly 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.

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### 34 Miscellaneous - Does SYNAPS OM qualify for use in direct contact with foodstuffs?

No. SYNAPS OM does not qualify for use in direct contact with food.

### 35 Miscellaneous - Is SYNAPS OM available in sheets and rolls?

Yes. SYNAPS OM is available in sheets and rolls. Please check [www.agfa.com/synaps](http://www.agfa.com/synaps) for more information.

### 36 Miscellaneous - What are the recommendations for waste disposal of SYNAPS OM?

SYNAPS OM has plastic recycling code "7 - Other". SYNAPS OM is a polyester that is quite different from the type of polyester that is used for the production of PET bottles for instance. It can be recycled but post-print SYNAPS OM is to be treated as waste because the ecological cost of collecting and selecting the waste is higher than the ecological benefit. Regulations for waste disposal may differ per country so please consult the local regulations.

### 37 Miscellaneous – Can I clean and/or disinfect SYNAPS OM?

Yes. Our recommendations are as follows:

- Use a common soft kitchen detergent or hand soap diluted with water. Products with low alcohol content (< 40%) can be used to disinfect SYNAPS OM.
- Gently wipe the surface with a soft cloth immersed with the mixture of soft detergent and water.
- Rinse with tap water and wipe dry with a soft cloth.

Not recommended are:

- The use pure concentrated soap - always dilute!
- The use of microfiber cloths because these type of cloths might polish the surface and/or damage the printed image.
- The use of all-purpose cleaning products that contain abrasive particles (like e.g. alum) as these products can damage the printed image.
- The use of disinfectant products with high alcohol content (e.g. 60% isopropanol or 60% ethanol or a mixture of both) as these products can damage the printed image.

### 38 Miscellaneous – Is SYNAPS OM compatible for use in dry ice conditions?

Yes. SYNAPS OM does not deteriorate, become brittle or become permeable in dry ice conditions. Also the printed image stays perfectly intact (tested on offset and HP Indigo printed samples during 5 days in crushed dry ice).

### 39 Sustainability – PVC-free: Why is it important that SYNAPS OM is PVC-free?

The term PVC-free communicates that SYNAPS OM does not hold any chlorine or phthalates, two toxic ingredients of some PVC. Phthalates are additives that make PVC soft and pliable but are reported to be hazardous to health because they easily migrate or evaporate, which makes it easy to inhale or ingest. This is a reason why products containing phthalates have been banned in toys for children under age three by the European Union since 1999. Chlorine is a toxic substance which production results in mercury emissions and releases dioxins in the environment. Dioxin is classified as known to cause cancer to humans by the International Agency for Research on Cancer (part of World Health Organization, WHO).

More on the effect of dioxins: <http://www.who.int/mediacentre/factsheets/fs225/en/>

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