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White Paper

Best Practices to Achieve Maximum Quality and Efficiency Improvements with KODAK SONORA Process Free Plates

The environmental and economic benefits of switching from traditional wet processed plates to process free plates are easy to understand. Eliminating the plate processor and all associated water, energy, chemistry, and waste is good for both the printer's business and the environment, and usually these benefits are more than enough to justify a switch to process free plates.

However, while cutting costs and reducing environmental impact delight business owners, the operators and managers who work every day with the plates and the press must see improvements as well if process free plates are to be fully embraced by the print industry.

Who Benefits from Process Free Plates?

- Business owners
- Prepress operators
- Press operators
- Print buyers

Through over 10 years of experience working with printers using our process free plates, Kodak has gathered evidence from prepress and press operators in the field showing that process free plates can deliver significant operational improvements in addition to economic and environmental benefits.

- Prepress operators value process free plates because there is no more plate processing equipment to monitor and maintain, and there is no more plate chemistry to manage. The task of making plates is more streamlined and efficient with the elimination of the processing step.
- Press operators appreciate process free plates because the quality of plates coming out of prepress is consistent now that the variability of processing is gone. The plate is no longer a variable that they have to think about when running the press.
- Because of the increased stability of process free plates compared to processed plates, many printers are reporting more consistent and accurate colors in the final print output.

This document will outline some of the quality and efficiency benefits that printers can experience when they move to process free plate making with KODAK SONORA Process Free Plates, and it will describe best practices in prepress and in the pressroom that enable printers to maximize those benefits.

Variability

To understand the extent of the benefits of process free plates, it is important to start by exploring variability in plate processing.

There have been many technological advances around plate processing and plate chemistry in the last 5 years or so that have made plate processing easier and more sustainable. For instance, new advances in plate developers enable very long bath lives and low replenishment rates, so chemistry doesn't need to be changed as often – reducing waste, environmental impact, and labor costs. The bath life of KODAK 400 xLo Plate Developer for KODAK ELECTRA XD Thermal Plates is up to 12 weeks or 8,000 m^2 for high-volume users.

Also, Kodak's newer plate processors are designed with intelligent controls that automatically monitor most variables, such as developer temperature and activity, making adjustments and alerting operators as needed. Prepress operators can now simply enter a range of tolerances for different processing variables, and the processing equipment helps keep variation to a minimum.

Some Plate Processing Variables

- Preheat temperature
- Developer activity
- Developer temperature
- Roller settings
- Throughput speed
- Replenishment rates and antiox settings

However, even with tight controls, more stable developers, and automated processing equipment, unexpected results due to processing are still possible. Variables such as preheat temperature, developer activity, developer temperature, processor settings, and processor speed can all affect plate quality. Also, even if errors are caught before the plates are sent to the pressroom, having to remake a plate reduces efficiency and increases waste.

When the variability of processing and the processing step itself are eliminated, the printer will start to see an improvement in both operational efficiency and quality.

When Processing is Eliminated

Improved Efficiency

When a printer switches from processed plates to process free plates, one of the first benefits apparent in the prepress department is a dramatic improvement in efficiency. No more time or manpower is spent on running plates through the processor, changing developer, or maintaining the processor.

In addition, there is no longer a need to measure plates, which saves time. More importantly, removing the variability of wet processing ensures that the image on the plate remains consistent job after job, day after day, week after week.

Eliminating these tasks can be especially important in smaller shops, where prepress operators not only manage plates but also handle file and image preparation. Interrupting this work with tasks related to plate processing can lead to mistakes.

For printers that have high volumes or tight deadlines, having to remake a processed plate can cause significant delays. However, a process free plate can be imaged and then put immediately on press, with minimal interruptions to the production schedule.

Plate Making Tasks that Use Time and/or Manpower	
Traditional Plate Making with Processed Plates	**Plate Making with Process Free Plates**
Imaging Plates Processing Plates Changing Developer / Cleaning Processor Maintaining Processor (service, replacing parts, etc.) Managing Plate Chemistry Inventory Managing Waste from Processor Measuring Plates	Imaging Plates

PRESS

Improved Quality

Because the variability of processing has been removed, pressroom operators can now easily trust the quality of the plates being sent from the prepress department. After the initial setup calibration is complete (required whenever a printer changes to a different type of plate), operators no longer have to make adjustments on press due to variability of the plate.

Because there is less variability in the dot, there could also be improvements in print quality. Many customers using SONORA Plates have reported more consistent and accurate colors on print jobs.

For every printer, good process control is essential for consistent, high-quality print. SONORA Plates remove all the variability and control measures needed for the processing step in prepress, so it is easier to identify and improve process control in other areas in order to maximize print quality.

Best Practices

To achieve the maximum efficiency and quality benefits for process free plates, printers need to incorporate best practices into both the prepress department and the pressroom. Most of these best practices apply to any thermal plate, but some are specific to process free plates.

Best Practices: Plate Handling

Because SONORA Plates do not receive a protective layer of gum during processing, extra care should be taken to avoid scratching the plate, although SONORA X Plates offer the same scratch resistance as most processed plates. All plates are susceptible to scratching, so many printers already follow best practices to prevent plate scratching. Some areas to watch out for scratching are:

- Any manual handling of plates
- Loading plates into the platesetter's cassettes
- Sorting plates on the stacker, then moving them to the pressroom
- Mounting plates onto the press

Printers should review the recommended lighting, temperature, and humidity specifications for any thermal plate to ensure that storage and operating environments enable optimal product performance.

Best Practices: Imaging

SONORA Plates are imaged the same as any other thermal plate, so all best practices for imaging are the same as with processed plates.

There is only one major change for the platesetter that a printer might need to make when switching to SONORA Plates from processed plates, and it is a very good change. It is now time to retire any debris removal system (UDRC) attached to the platesetter. SONORA Plates are non-ablative, so no UDRC is necessary. Eliminating the UDRC improves the working environment in prepress for employees, reducing the noise level of the CTP device by up to 75%. It also reduces the cost of maintenance and the cost of the expensive air filters and purifiers needed to prevent ablative material from damaging CTP electronics and lenses.

Note that removing the UDRC may not be possible with other process free plates. A UDRC is required on KODAK Platesetters with the AGFA AZURA TE Plate, which is a process free plate, and failure to use a UDRC with this plate could result in excessive buildup of coating in the platesetter.

Best Practices: Measuring the Plate

Measuring the plate before it goes to press is not necessary with SONORA Plates, so the best practice is to stop this practice completely, saving time and reducing plate handling. The printout contrast of SONORA Plates is strong enough to read type as small as 10 pts. and is sufficient for placement of the correct plate on press.

With traditional wet processed plates, typically control tonal elements are measured using a plate reader after the plate has been imaged and processed, prior to sending the plates to the pressroom. This step is necessary to monitor and correct the variability of the wet processing system. With SONORA Plates, this variability is eliminated, thus removing the need to measure the plates. Even Fogra agree that measurement of the plate at this stage is not necessary to achieve the PSO standards.

Initial platesetter calibration does require measurement of the press sheets (without the intermediate step of measuring the plates), but this is also recommended as best practice for wet processed plates to be sure that the final printed tonal range matches the customers' needs.

Best Practices: On Press

To get the maximum benefits of process free plates in the pressroom, press operators should become familiar with how process free plates work on press. Once they understand how the technology works, best practices are the same as for other thermal plates:

- Follow manufacturer recommendations for daily checks and routine maintenance for the press fountain system, blankets, form rollers, and other press components.

- No special inks are needed. SONORA Plates are compatible with all standard sheetfed inks. For UV inks, SONORA Plates are approved for applications where run length is up to 10,000 impressions, depending on press conditions.
- No special fountain solutions are needed.
- To ensure optimal performance for run lengths, it is recommended that customers undergo a complete pressroom chemical audit to identify and remove any harmful items. Harsh alkaline pressroom chemistries can negatively affect the performance of digital plates.

Conclusion

Offset printing has come a long way in the past 20 years. Removing film and film processing was a major step that improved both quality and efficiency for printers. Although some printers were reluctant to switch to CTP at first, it is now the dominant technology for offset plate making and its benefits are well understood.

Process free plates are the next step. Removing the plate processing step reduces both variability and time-consuming tasks, leading to improved efficiency and quality. A printer merely has to follow best practices, which are similar to the best practices for traditional processed plates, in order to gain the maximum benefits of switching to process free.

More information on SONORA Plates can be found at www.kodak.com/go/sonora.

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