Xerox® Color 800i/1000i Press
Metallic Dry Inks

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Xerox® Metallic Dry Inks provide an alternative to traditional foil stamping and offset metallic inks with a cost-effective, short-run, inline digital alternative. What has been conventionally achievable using offset printing can now be delivered through a single digital production press running up to 100 pages per minute. Eliminated are the time investment, custom dies, materials, waste, and workflow steps that are cost prohibitive for short runs and variable-data jobs. Xerox® designed Metallic Dry Inks with the concept of streamlined digital workflows, fast turnaround time, and impressive metallic effects in a wide variety of static and variable applications.

Xerox had to make sure the image quality performance of the Metallic Dry Inks met expectations. If the flop index (a measure of the light reflectance or shine) of the metallic dry inks is not high enough, the resulting application’s value will not meet the customer requirements and will not reach the acceptable level for bringing production in-house.

At the same time, the metallic dry ink performance cannot negatively impact the CMYK image quality performance. Ideally, the desired metallic image is attained in one pass as on the Color 1000i Press.

The system is capable of being successfully supported with standard operator skill sets and does not require “press master” expertise, a key to widespread adoption of the technology. Adding metallic dry ink into a CMYK printing process has traditionally required a significant negative productivity impact. The Color 800i/1000i Press is capable of running metallic dry ink at rated print speed for the media size and weight being run. Also critical to success is the fact that the capital and operational costs are kept fairly low, so that the premium value from using the metallic inks results in solid profits and new business opportunities.

Printing companies and enterprise print operations can expand their businesses by applying silver or gold dry inks to company logos, brand collaterals, graphic images and photos, headlines, names, or virtually any...
visual or text element. Popular applications include menus, invitations, key fobs, stickers, folders, business cards, lottery tickets, art posters, award/recognition certificates, letterhead/insignias, window clings, newsletters, direct marketing campaign pieces, greeting cards, photo books, and photo gifting.

In recent years, metallic printing that can reflect light has been growing in popularity for its versatility and ability to create a dramatic impression. It is used for various application purposes in the printing industry such as greeting cards, book covers, labels, and packages. Xerox venture partner, Fuji Xerox, made it possible to produce reflective pigment by adapting the emulsion aggregation (EA) method used to produce Color Press toner, thereby succeeding in developing silver and gold toner that is capable of the energy-efficient, low-temperature fusing achievable with EA-Eco toner while maintaining a high sheen.

With the conventional pulverization method, it was only possible to produce unevenly shaped toner particles whose reflective pigment particles were not oriented consistently. Also, the conventional toner particles had pigment particles that were not completely contained within the toner particles and protruded outside, resulting in image defects due to insufficient charging and transfer defects from electricity leakage caused by the protruding pigment. Therefore, it was difficult for this toner to be used with the xerographic system. To address this, Fuji Xerox utilized and adapted the EA method to orient the flat reflective pigment particles in the same direction, thereby developing ellipsoid-shaped toner particles that can fully contain the pigment particles. This new method allows the toner to meet both the basic performance requirements for toner as well as the performance requirements for metallic printing. In this way, this toner can be used with the Color 800i/1000i Press's xerographic system.

By making the shape of each toner particle into a flatter ellipsoid shape, it is possible to align the orientation of the reflective pigment particles that are contained within the toner particle with the long direction of the toner particles. Hence, when toner is transferred onto media (paper or film), its pigment particles lay parallel to the media, allowing for higher reflection of light from the pigment after the image is fused onto the media to achieve gloss index and create a metallic appearance.

This reflective pigment does not allow light to pass through it, and therefore the color of the underlying media does not show through in areas where this toner is printed. This means that images with a highly metallic appearance can be printed not only onto plain white paper but also onto various other kinds of media, such as media that already has printed text, dark substrates, textured stocks, synthetic materials, and transparent film.

► The Xerox Color 800i/1000i Press and Xerox Metallic Dry Inks enable fast turnaround times and impressive metallic effects in a wide variety of static and variable applications.

► JUDGES’ ANALYSIS

Using a fifth housing station on its Color 800i/1000i Press, Xerox figured out a way to not only engineer reflective pigments, but to apply them to achieve a high sheen gold and silver. The metallic pigments open the door to migrating lucrative foil stamping or metallic ink offset applications to personalized and print-on-demand jobs.