



**Transforming Wide-Format  
with New Advances in  
White Ink**

**Canon**

**Wide-format Impressions**

*Produced by the PRINTING United Alliance and NAPCO Research for its members.*

# Transforming Wide-Format with New Advances in White Ink

---

## INTRODUCTION

For print service providers (PSPs), the introduction of white ink formulations years ago profoundly changed the wide-format industry. Suddenly, print platforms were designed primarily for printing process colors on white, and light media could print pure white on a whole new class of substrates. In addition to enabling white graphics, white ink could be printed as a basecoat for CMYK images to enhance their brightness, opacity, and color fidelity on all media, dark or light.

The ability to print white ink opened new applications for wide-format print platforms, making it possible to print bright whites on transparent substrates for window graphics, backlit displays, product packaging, and more. The ability to print white as a basecoat for CMYK images has enabled PSPs to achieve new vibrancy levels for full-color graphics on clear, dark-colored, and reflective substrates. Overall, the advent of white ink has been a game changer for the industry by dramatically increasing the performance and versatility of wide-format printers.

## TRADITIONAL WHITE INK CHALLENGES

Working with white inks, however, has presented challenges over the years. Because of the ink's increased viscosity, white ink particles are much heavier than those in colored inks. Accordingly, white ink typically requires more complex maintenance and finishing processes to ensure optimum print quality.

For example, many white ink formulations require manual agitation or shaking of ink cartridges, bottles, and bags before printing to ensure color consistency and opacity. Computerized circulation systems have been implemented on some printer models to automate this process.

White ink has presented other challenges for PSPs, including its heavier particles settling in a printer's lines or clogging its printheads. For non-UV inks, such as resin and solvent formulations, the heavier particles of white ink are evaporative in nature, which means they dry quickly and can easily clog printer nozzles and lines.

Preventing these occurrences has typically required frequent purging of the lines, sometimes even while printing, resulting in considerable ink waste, increased production costs, and more significant environmental impact for jobs printed using white ink.

Traditional white ink formulations have also required printers to operate at very low speeds (in quality mode) or print a graphic's white elements in multiple passes to achieve consistent ink coverage. These factors have lengthened the turnaround times for white ink applications, leading to production bottlenecks, delayed print delivery, and additional costs.

Once printed, traditional white ink formulations also lack durability. As a result, white ink applications have required lamination to maintain their quality over time. Issues with yellowing have also been common for white ink applications, especially when graphics are exposed to sunlight and other outdoor elements.

## NEW WHITE INK ADVANCES ADDRESS THESE CHALLENGES

Fortunately, new advances in white ink formulations have eliminated many of these issues for PSPs. For example, Canon's UVgel white ink is tailor-made for today's wide-format buyers' pace, quality, and cost demands.



Amid the many advantages and opportunities of white ink is the ability to print or create an underbase on transparent or translucent materials. | Credit: Canon U.S.A. Inc.

After years of research and development by Canon engineers, UVgel white ink is now available for the Canon Colorado M-series of UV printers. With UVgel inks, PSPs can print white just like any other color with complete confidence in its long-term performance across a wide range of profitable applications.

## FORMULATED FOR SIMPLICITY, CONSISTENCY

Unlike many other white inks on the market, UVgel white ink is formulated to be non-evaporative, which means its ink particles do not dry in the system or clog printer lines and nozzles. To further ensure consistent, error-free white ink coverage, the Colorado M-series is engineered to suspend the ink's heavy titanium dioxide particles for extended durations of time.

The printer also features an advanced white ink delivery system that positions ink bottles upside down directly above the ink reservoir. This ensures that all ink contents are deposited into the reservoir, thus minimizing ink waste. While in the reservoir, the inks are agitated, keeping them dispersed for optimum consistency.

As ink flows into the printheads, a heating mechanism reduces its viscosity and generates a convective current that continues to circulate the white ink throughout production. The Colorado M-series is also equipped with an advanced recirculation pump that sits between the white ink reservoir and printhead to further ensure superior imaging and opacity from one job to the next.

## BRIGHT, DURABLE, SUSTAINABLE

Canon UVgel white ink's unique formulation also enables a faster build-up of dense and opaque white images than alternative white inks and in fewer passes. Canon UVgel white ink can be printed in as many as five layers, achieving smooth, even, error-free results regardless of the thickness of the print.

To expedite production, UVgel white ink prints two to three times faster than other white ink formulations on the market. Operating costs remain low with UVgel white ink, as applications use up to 50% less white ink than those produced with alternative white ink formulations.

Once printed, UVgel white ink is highly durable and scratch-resistant, ensuring that images maintain their integrity and original whiteness over time, with no yellowing and no need to laminate.

Using UVgel white ink can also help PSPs meet their sustainability goals. Not only is the volume of white ink required per application minimized, but UVgel white ink produces prints that do not emit toxic volatile organic compounds (VOCs) or hazardous air pollutants.

## 4 WAYS TO LEVERAGE WHITE INK:

### 1. Window Graphics and Backlit Displays

White ink can be printed on clear substrates as a stand-alone color or as a basecoat for CMYK prints for eye-catching window graphics and backlit displays. For CMYK applications, consider printing white ink “sandwiched” between two layers of CMYK images for graphics that can be viewed on both sides of the substrate.

### 2. Labels and Packaging

Retail packaging is often comprised of clear plastics for pouches, shrink wraps, bags, and labels, all ideal backdrops for white ink text and graphics. Printing white ink as a basecoat for CMYK graphics helps images pop, making packaging stand out on crowded retail shelves.

### 3. Privacy Films and Other Décor Elements

Today’s open-concept offices often separate workspaces and meeting rooms using glass or plexiglass walls or dividers. To minimize distractions and provide privacy for meetings, white ink can be used to create privacy screens and decorative patterns on these décor elements while keeping the space light and airy.

### 4. Any Application Involving Dark or Reflective Substrates

Direct printing on dark-colored and reflective substrates with CMYK inks has been problematic over the years. To print vibrant, saturated CMYK on colored substrates such as fabrics, papers, plastics, metals, and wood, PSPs can print a basecoat of white beneath the graphic and then follow up with CMYK printing for images that truly pop, even when printed on a black surface. White ink formulations, such as UVgel white ink, quickly and effectively print pure white graphics on dark and reflective substrates.



In this bus shelter, careful design and the use of a white ink underbase allow this design to “glow” in areas when backlit. | Credit: Canon U.S.A. Inc.

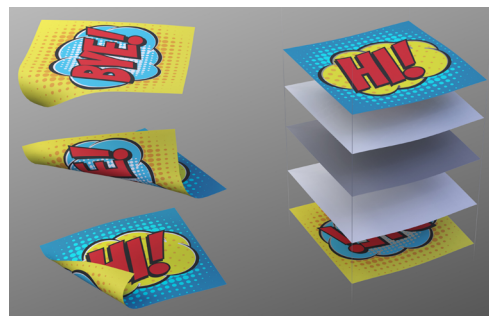
# UVGEL WHITE INK PROVIDES AN ADVANTAGE

## Versa-Tags

### Beyond Decals: Elevating Automotive Graphics with Premium Quality White Ink

Based in Cuba, Missouri, Versa-Tags Inc. is a third-generation, family-owned print provider with roots in the automotive industry. Versa-Tags originally operated as a screen printer, specializing in custom-printed decals, window stickers, key tags, magnets, windshield advertisements, classic license plates, and more. In 2012, they expanded into digital wide-format printing.

Since then, wide-format applications have been the company's main growth driver. Given the breadth of applications, Versa-Tags runs on clear and reflective media, and the ability to print quality, opaque white ink has been essential to the company at every step.



The Canon Colorado M-series combined with PRISMAguide can create five-layer print jobs for double-sided print applications. | Credit: Canon U.S.A. Inc.

“Without white ink, you are locked into only certain applications and into printing on white substrates,” says Nathan Garden, president of Versa-Tags. “We are very diverse in the types of decals we manufacture and the materials we use.”

With the introduction of white ink into its shop, Versa-Tags has seen its customer base expand well outside the automotive industry. “We never know who is going to come knocking on our door now and what requests we’ll get,” says Garden. “For us, the best way to operate is to be as versatile as possible.”

To meet the diverse needs of its customers, Versa-Tags recently purchased three Canon Colorado M-series UV printers equipped with UVgel white ink. “We liked the print quality of the Colorados, and we liked the workflow of printing roll to roll as our other digital presses are flatbeds,” says Garden.

## OPACITY, DURABILITY

Versa-Tags produces most of its prints on transparent or reflective substrates on its Colorado M-series printers. However, the company also prints on colored media, bright chrome polyester, and black substrates. According to Garden, the company runs white ink every day.

“Our jobs require a good opaque white,” he says. “For example, when printing on black material, we need to back it up with quality, opaque white to achieve the right colors. We have been very impressed with the opacity of UVgel white ink.”

He adds that the ink consistently maintains its brightness over time. “We have seen some white inks in the past that have yellowed,” says Garden. “But we haven’t seen any of these issues with the Canon white ink.”

Garden has also found that UVgel white ink offers the durability customers require. “It doesn’t need lamination,” he says. “However, it is easy to laminate if you want to — or if you are adding some sort of resin on a print, for example, for a spot feature.”

## LOW MAINTENANCE, HIGH PRODUCTIVITY

For Garden, another distinguishing feature of UVgel white ink is its incredibly low maintenance requirements. “The white inks we have used in the past had to keep moving, churning, or being agitated in some way,” says Garden. “This has presented challenges for us with other presses. But the maintenance is easy with this ink, with no need to agitate the cartridges or bottles.”

According to Garden, very little training was also needed to get supervisors and operators up to speed on how to handle the new ink. “Today, we run all three Colorados with just one operator,” he says. “So, we can take on more work and have more throughput, which makes our employees that much more valuable to us.”

Garden also highlights different white ink modes as a productivity driver for the company, allowing his team to dial in just the right print speed and ink density for the job. “This is a great feature to have because, for example, we can run a little faster with less ink printing for down-and-dirty applications such as regulatory stickers for cars being sold in a dealership,” he says. “We can hit the right quality for that job, at the right speed, to meet the customer’s need while keeping the costs down.”

## QUALITY RESULTS, EVERY TIME

Most of all, Garden says UVgel white ink reliably delivers the premium quality look and feel VersaTags customers expect from the company’s products.

“White is a fifth color,” he says. “Whenever you use white ink for a job, you are laying a fair amount of ink down. Compared to other white ink we have used, UVgel white ink is a little bit thinner and smoother. It just doesn’t make the decal build up like we have seen with other presses. So, the final product has that sleek, high-end appeal our customers are looking for.”

He continues, “We are so confident in these inks that we will leave the Colorados running when we leave for the day,” says Garden. “That just happened last week. Our operator was locking up the building for the weekend, and the press was still running. He asked me, ‘Is that OK?’ And it is totally OK. We just left the material on and let the press run with no issues at all.”

## SCREEN WORKS

### Creating Letter-Perfect Signs and Window Clings that Deliver for Brands

Based in Novi, Michigan, Screen Works is a 35-year-old provider of printing services for businesses and educational institutions. It specializes in signage and other graphics to help customers achieve their branding goals.

Founded as a screen printing business, Screen Works began delivering digital printing services in the early 2000s and has since expanded into all manner of wide-format printing for a diverse B2B clientele.

In June 2023, Screen Works invested in a Canon Colorado M-series white ink roll-to-roll printer. According to Screen Works Owner Amit Somin, the company had been eyeing the Colorado since its introduction a few years ago. The addition of UVgel white ink prompted Somin and his team to take the leap, bringing the Colorado M-series into its 14,000-square-foot operation.

“The Colorado was on standby for us until it came with white ink,” says Somin. “I think we may have been one of the first five customers to purchase the new M-series.”

## EFFICIENCY, OPACITY, BRIGHTNESS

Since then, Screen Works has kept its Colorado M-series printer busy producing primarily double-sided window clings, a core application for its customers.

“There are two different ways we use the Colorado, one for three-layer printing and the other for five-layer printing, which is the most common for window clings,” says Somin. “Most companies that do not have white ink have to print two separate clings and then join them together. By printing on the Colorado directly, we avoid all those steps. We do it all in one go, which is great.”

For Somin, one of the top benefits of using the Colorado for these jobs is the opacity of its white ink. “The biggest issues involved in printing a double-sided cling come from putting the graphics up against the glass, and you have daylight showing through it,” he says. “So, the white ink needs to be truly opaque, and it is. The white is very opaque, which we like.”

The UVgel white ink, Somin adds, maintains its brightness over time as well, with absolutely no yellowing. “We are not laminating the prints, either,” he says. “And many of them are displayed outdoors, facing UV, facing the sun.”

Somin also points to the Colorado’s low maintenance requirements as another distinguishing feature. “We haven’t faced any issues with the recirculation of the white ink or an excessive need to purge it,” he says.



## SUPERIOR IMAGE QUALITY

However, the image quality achieved on the Colorado sets the printer apart for Somin and his team. “On any white ink printer, the biggest issue to watch for is banding,” he says. “Many times, banding is hard to detect. Especially if you are running a multi-layer print, it can be hard to see.”

He adds that the Colorado delivers the exceptional image quality Screen Works customers require — and several other advanced features they also value.

“The print quality on the Colorado is great,” says Somin. “When not printing white, we also have the ability to do matte and gloss finishes together and load two rolls at a time allowing the printer to automatically switch between rolls. These advantages outperform anyone else in the market.”

## FASTSIGNS OF FORT LAUDERDALE

### Building New Profit Centers with the Wow Factor of White Ink

Since its inception more than two decades ago, FASTSIGNS of Fort Lauderdale has been delivering wide-format printing services to a nationwide customer base. Initially specializing in the medical industry, the company has since broadened its market reach. Today, it serves all types of businesses with exterior, interior, and lobby signs, vehicle graphics, ADA and wayfinding signage, digital signage, trade show displays, window graphics, and more.

While FASTSIGNS of Fort Lauderdale has enjoyed growth and success over the years, the addition of white ink capabilities during the pandemic has been the company’s greatest catalyst for growth.

“For 15 years, we survived without white ink, never thought we needed it,” says Sebastian Spada, owner of FASTSIGNS of Fort Lauderdale. “Then we bought a machine that had white ink capabilities, and we started seeing that we were missing a market when it came to clear materials, acrylics, Lexan, and second surface.”

With its initial white ink printers installed, FASTSIGNS soon began regularly printing white on clear substrates, but not without challenges. These included heavy maintenance demands, issues with color consistency, and an inability to achieve reliable print quality. That changed in 2023 when the company purchased a Canon Colorado M-series UV printer with UVgel white ink.



The use of white ink as a basecoat for CMYK graphics makes retail packaging stand out. | Credit: Canon U.S.A. Inc.



## MINIMIZING MAINTENANCE, WASTE

“What determines how well a machine uses white ink is its ability to recirculate it or keep that white ink moving because white ink settles, has big molecules, and tends to clog up printheads,” says Spada. “One of the big differentiators of the Colorado is in its ability to manage white ink internally, within the machine. Because of this, maintenance is minimal. I think our team spends maybe five minutes a week on it.”

He adds that other white ink printers in the FASTSIGNS shop have required white to be printed on white media in order for it to pop. “Sometimes, to get the print to come out perfectly, we were doing it two and three times,” says Spada. “With the Colorado, we don’t have to throw any prints away. They come out perfectly every time.”

## SERVING HIGH-END MARKETS

While the Colorado M-series white ink printer’s unique advantage is simple, automated maintenance, its superior image quality has made the most significant difference to FASTSIGNS and its customers.

“There has been a big uptick in the amount of artwork being produced today on acrylic,” says Spada. “Much of this work involves second surface printing, and we have been able to capture that high-end business with the Colorado. It creates a beautiful product, and even though we have only had the printer for a year, it has already paid for itself because we are producing products that we could not otherwise produce.”

As any wide-format print provider will attest, achieving exceptional quality requires exceptional inks. “Printing for the interior design market used to be a real bear for us because printing has to be perfect,” he says. “The ink on the Colorado is amazing. For example, even though the Colorado is a CMYK machine plus white, it will print out just as good a product as other devices that include additional colors to expand their gamut. We have a machine that runs light cyan and magenta — and when you put up a Colorado print next to one printed on that printer, you can’t tell the difference.”

Spada adds that lamination is not necessary on Colorado M-series prints, either, because the inks are highly durable and scratch-resistant. “We only laminate for installation reasons, if at all, to make our installers more efficient,” he says.

## BRINGING WORK BACK IN-HOUSE

In addition to boosting print quality for FASTSIGNS’ new high-end clients, Spada notes that the Colorado’s accelerated print speeds have also helped the company expand at the lower end.

“We recently got into labels, a market that we normally outsourced in the past — we are talking 5,000- to 10,000-label jobs,” he says. As a case in point, Spada cites the company’s work for a utility company where FASTSIGNS is tasked with printing labels in volume to mark the company’s cables.

“Print speed with white always depends on how much white ink you are putting down,” says Spada. “We are printing such a minimal amount of white with the Colorado to get these jobs done. It doesn’t slow the machine down.”

## HANDLING TRICKY APPLICATIONS

Perhaps, though, notes Spada, the Colorado's performance for one of FASTSIGNS' largest customers has made the biggest difference in the company's growth and outlook.

The customer, a machine manufacturer that exchanges dollar bills for coins, calls on FASTSIGNS to produce graphics for these machines, an application involving second surface printing of white ink on clear vinyl.

"They sell 600 of these machines every month," says Spada. "When we were producing that product on a different printer, there were all sorts of issues with the white not being consistent, or streaking, and with the clear vinyl shrinking once installed. They went through several vendors, including us, and could not find a product that was stable. We were on the verge of losing this client."

When FASTSIGNS switched these jobs over to the Colorado, the difference in print quality — and customer sentiment — was night and day, says Spada.

"Not only did we keep the account by printing on the Colorado, but this company is also now our number three customer," he says. "They pretty much give us all that business now, where there were other print providers in the mix before."

Best of all, notes Spada, FASTSIGNS is now charging more for these production runs because of the premium quality results achieved with the Colorado M-series printer.

## SETTING UP FOR SUCCESS

Spada says that while the Colorado M printer with white ink has delivered on its promise for FASTSIGNS of Fort Lauderdale, so has its manufacturer, Canon.

"Out of all the equipment I have purchased, and it has been substantial, the Canon people did, by far, the best job of delivering, assembling, and placing the equipment," he says. "I have had vendors pull up a truck and drop the printer off in the driveway. That was not the case with Canon. After they set it up, they kept coming back to tweak the machine to make sure it was running perfectly. I didn't call them. They would show up. That is really impressive. Really a Wow. No other manufacturer does that."

---

# WHO WE ARE

---

## Wide-format Impressions

*Wide-format Impressions* serves as a resource for senior-level executives, business owners, and managers of printing and signage companies providing wide-format services. It covers industry trends, emerging technologies, and news in the visual communications industry.



PRINTING United Alliance is North America's most comprehensive member-based printing and graphic arts association, comprised of the industry's vast communities. The Alliance serves industry professionals across market segments with preeminent education and training via iLEARNING+, workshops, events, research, government and legislative representation, safety, and environmental sustainability guidance, as well as resources from our leading media brands – *Printing Impressions*, *Packaging Impressions*, *Wide-format Impressions*, *In-plant Impressions*, and *Apparel*. A division of PRINTING United Alliance, Idealliance is a global leader in standards training and certification for printing and graphic arts operations across the entire industry supply chain. PRINTING United Alliance also produces the PRINTING United Expo, the most influential days in printing. The expansive display of technology and supplies, education, programming, and services are showcased to the industry at large and represents all market segments in one easily accessed place.

---

# WHO WE ARE

---

**Canon**

Canon U.S.A. Inc. provides industry-leading enterprise, production, and large-format printing solutions, all of which are supported by exceptional professional service offerings. Our ultimate strength lies in the expertise of our people and a shared culture that prioritizes our customers. The Large Format Division is dedicated to delivering quality, customer satisfaction, and expertise in display graphics, industrial print production, and photography printing. Our innovative hardware and software solutions empower customers to reach their creative potential and maximize productivity. They enable users to produce stunning prints with ease and confidence. Our commitment to building lasting partnerships ensures that we provide reliable, high-performance solutions tailored to the needs of large print shops, manufacturers, and small businesses.