

Technical white paper

# HP 821, 831, 871, 881, and HP 3M 891 Latex Inks: designed for sustainable impact

HP's water-based Latex Inks offer many advantages across the entire product lifecycle in comparison to eco-solvent, solvent, UV-curable, and UV-gel inks.

## Introduction

HP 821, 831, 871, 881, and HP 3M 891 Latex Inks used in HP Latex HP 300, 500, 1500, and 3000 series printers (*Sometimes referred to as third-generation HP Latex*) include significant innovations that take the benefits of HP Latex Inks to a new level. HP Latex Inks provide outdoor durability and versatility across all common media types used in sign and display applications in combination with high-quality odorless prints and reduced environmental impact.

## Health and environmental performance

HP Latex Printing Technologies address environmental and health concerns across a broad range of attributes throughout the entire lifecycle of a print: from production to disposal. The water-based formulation of HP Latex Inks provides a more comfortable print production environment without trading off performance. HP Latex Inks also allow print service providers to produce odorless prints for indoor display in sensitive environments such as hospitals and healthcare.

These HP Latex Inks contain up to 70% water and have a flashpoint greater than 110 °C, making them non-combustible and non-flammable. In contrast, solvent-based inks typically have more volatile components and flashpoints around 60°C to 70 °C, and may require special transportation, handling, and storage not needed for HP Latex Inks.

No special ventilation is required with HP Latex Inks<sup>1</sup> and they contain no Hazardous Air Pollutants (HAPs). Printing with HP Latex inks avoids the problematic reactive monomer chemistry<sup>2</sup> and ozone generation associated with UV printing.

HP Latex inks do not contain nickel or heavy metals and are PVC-free. Finally, the latex polymer in HP Latex inks is not related to natural or synthetic latex, so it does not cause a latex-related allergic reaction.

As of April 2020, these HP Latex inks have a hazard warning label for reproductive toxicity due to new toxicity data for a co-solvent used in the ink, 2-pyrrolidone. HP conducted a risk assessment that shows that these inks and printers continue to be safe for their intended purpose, when set up and used according to instructions in the HP Safety Data Sheet website and other materials accompanying the product.<sup>3</sup>

## Certifications

HP Latex Inks qualify for certifications that demonstrate they meet some of the world's most rigorous and comprehensive standards for low chemical emissions in indoor air for the finished print. HP Latex Inks are UL GREENGUARD GOLD certified for low chemical emissions in indoor air with no restrictions for wall coverings based on room size or area covered. Also, no wait time is necessary before installation (or prior to applications with lamination).<sup>4</sup> In addition, prints produced using HP Latex Inks on HP PVC-free Wallpaper meet AgBB criteria for health-related evaluation of VOC emissions of indoor building

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<sup>1</sup> Special ventilation equipment (air filtration) is not required to meet U.S. OSHA requirements. Some models include a condensate collection system. Special ventilation equipment installation is at the discretion of the customer—see the Site Preparation Guide for details. Customers should consult state and local requirements and regulations.

<sup>2</sup> Acrylate monomers present in uncured UV inks and UV-gel inks can damage skin.

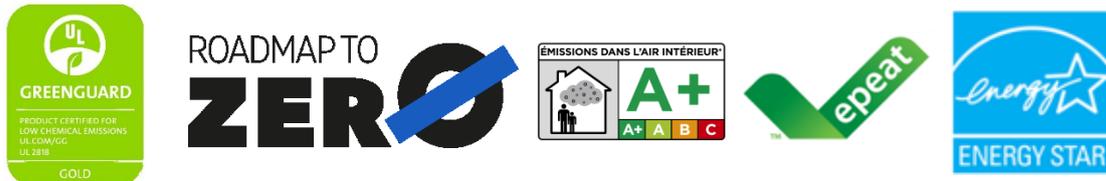
<sup>3</sup> 2-pyrrolidone: This component showed developmental effects only at high doses that were toxic to pregnant test animals (OECD Testing Guideline 414: Prenatal Developmental Toxicity Study). Uptake by people of small doses is not expected to cause developmental toxicity. This component has not caused adverse effects on sexual function or damage to fertility in an animal study (OECD Testing Guideline 443: Extended One-Generation Reproductive Toxicity Study).

<sup>4</sup> GREENGUARD GOLD Certification to UL 2818 demonstrates that products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg) or [greenguard.org](http://greenguard.org).

products.<sup>5</sup> These prints are rated A+ (very low-emission) according to the *Émissions dans l'air intérieur* statement on the level of volatile substances in indoor air.<sup>6</sup>

HP large format printing materials portfolio includes a wide range of FSC®-certified papers, as well as HP PVC-free Wallpaper and HP PVC-free Durable Smooth Wallpaper. HP Latex inks printed on HP PVC-free Durable Smooth Wallpaper qualify for LEED credits in the low emitting category and meet the limits for formaldehyde release in EN 15102 for wall coverings.

HP Latex inks also conform to the Zero Discharge of Hazardous Chemicals (ZDHC) Roadmap to Zero Level 1 Manufacturing Restricted Substances List (MRSL) Version 1.1, a list of chemical substances banned from intentional use during textile production.<sup>7</sup> Additionally, certain HP Latex printers meet the requirements of Electronic Product Environmental Assessment Tool (EPEAT) which is a comprehensive environmental rating to help identify “greener” electronic components across the complete product lifecycle, including ENERGY STAR certification for superior energy efficiency.<sup>8 9</sup>



## Recyclability

HP 821 and 831 Latex Ink Cartridges contain up to 34% and 39%, respectively. After use, HP 821 and 831 Latex Ink Cartridges and HP 831 and 881 Latex Printheads are eligible for recycling through the HP Planet Partners Program in some countries.<sup>10</sup> With the HP 871, 881, and HP 3M 891 Latex Ink supplies, up to 70% of the weight of the used ink cartridge is a cardboard container that can be recycled through local municipalities.

HP offers the HP Large Format Media take-back program in the U.S. and Europe through which most HP printed signage media can be returned. HP papers that are recyclable can go directly to locally available recycling programs.

## Summary

Water-based HP Latex Inks are designed for sustainable impact throughout the product lifecycle. HP Latex Inks meet a variety of stringent human health criteria represented by UL GREENGUARD GOLD and ZDHC. The ink cartridges comply with EU RoHS requirements, and the inks comply with EU REACH and other applicable world-wide chemical notification requirements. Finally, the HP Ecosolutions Trained Printing Company Program<sup>11</sup> for HP Latex Printing Technology users provides convenient web-based training to help print service providers gain knowledge and provide value to the growing number of clients looking for graphics solutions with reduced environmental impact.

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<sup>5</sup> HP WallArt printed on HP PVC-free Wallpaper and other prints on HP PVC-free Wallpaper printed with HP Latex Inks meet AgBB criteria for health-related evaluation of VOC emissions of indoor building products ([link](#))

<sup>6</sup> *Émissions dans l'air intérieur* provides a statement on the level of emission of volatile substances in indoor air posing health risks if inhaled—on a scale from A+ (very low-emission) to C (high-emission). Wall decorations printed with HP Latex Inks and HP PVC-free Wallpaper are rated A+ according to *Émissions dans l'air intérieur* ([link](#))

<sup>7</sup> ZDHC is an organization dedicated to eliminating hazardous chemicals and implementing sustainable chemicals in the leather, textile, and synthetics sectors. The Roadmap to Zero Programme is a multi-stakeholder organisation which includes brands, value chain affiliates, and associates, that work collaboratively to implement responsible chemical management practices. For more information, see [roadmaptozero.com](http://roadmaptozero.com).

<sup>8</sup> Applicable to select HP Latex printers. EPEAT registered where applicable/supported. See [epeat.net](http://epeat.net) for registration status by country.

<sup>9</sup> Applicable to select HP Latex printers. ENERGY STAR and ENERGY STAR mark are registered trademarks owned by U.S. Environmental Protection Agency. See [energystar.gov](http://energystar.gov) for certification status by country

<sup>10</sup> Visit [hp.com/recycle](http://hp.com/recycle) to see how to participate and for HP Planet Partners program availability; program may not be available in your jurisdiction. Where this program is not available, and for other consumables not included in the program, consult your local waste authorities on appropriate disposal.

<sup>11</sup> Visit [hplatexknowledgecenter.com/blog/hp-ecosolutions-training](http://hplatexknowledgecenter.com/blog/hp-ecosolutions-training) for more information