

Epson DURABrite Inks are an evolving pigment-based ink technology first introduced in the Epson Stylus C80 ink jet printer. DURABrite Inks are optimized for plain and matte papers, yet the newest formulation of DURABrite Inks (currently featured in the Epson Stylus C64, Epson Stylus C84, and Epson Stylus CX6400), adds improved printing on glossy papers—especially on the new DURABrite Ink Glossy Photo Paper. DURABrite Inks are featured in most of the Epson printers and all-in-ones designed for dedicated productivity.

DURABrite Inks are water-, smudge-, and light-resistant on all supported papers—plain, matte, and glossy. They are the ideal solution for printing everyday text and image documents, yet also offer the flexibility to print photos. DURABrite Inks are useful where high quality, long-lasting output is desired.

This technical brief will provide detailed information on the goals and advantages of DURABrite Inks.

Goals of DURABrite Inks

DURABrite Inks are comprised of pigment-based inks. The goal of DURABrite Inks is to provide superb print quality, water-resistance, and light-resistance on a variety of media, including plain paper. The key differences among conventional pigment ink, conventional dye ink, and DURABrite Inks are:

Key Differences	Conventional Pigment Ink	Conventional Dye Ink	Epson DURABrite Inks
Characteristics	Comprised of insoluble pigment particles	Formed from color-forming, water-soluble molecules	Comprised of insoluble pigment particles
Color Gamut	Poor	Excellent	Excellent on Plain and Matte Papers; Very Good on DURABrite Ink Glossy Photo Paper, Good on other glossy papers
	<p><i>Pigment particles sink into the valleys of the paper. High scattering and uneven light reflection result in reduced color gamut.</i></p>	<p><i>Coloring is high because ink dyes the fiber of the paper. Light reflects evenly off the surface producing a superb color gamut.</i></p>	<p><i>Ink remains near the surface of the paper so there is even light reflection, producing an excellent color gamut.</i></p>
Light-Resistance	Excellent <i>Inks have excellent light-resistant properties.</i>	Fair to Good <i>The dye inks are dependent on special paper to resist fading.</i>	Excellent <i>DURABrite Inks are extremely light resistant, even on plain paper.</i>
Water-Resistance	Excellent <i>Pigment particles are insoluble.</i>	Good <i>Inks are water-resistant on many glossy photo papers but not on matte papers.</i>	Excellent <i>Inks are water-resistant on a wide variety of media, including plain paper.</i>
Media Selection	Poor <i>Not conducive to plain paper printing due to poor output quality on that media; generally limited to signage media</i>	Excellent <i>Widest media selection: Plain, Matte, and RC (Resin Coated) Photo and High Gloss papers</i>	Excellent <i>Wide media selection: Plain, matte, and glossy papers</i>

Advantages of DURABrite Inks—Wide Media Selection

DURABrite Inks are optimized for plain and matte papers, yet also produce quality results on glossy papers. The newest formulation of DURABrite Inks produces improved output on glossy papers with the use of black ink in addition to the three color inks. Epson's new DURABrite Ink Glossy Photo Paper is specifically optimized for use with DURABrite Inks and delivers long-lasting color prints that are resistant to smudging and fading.

DURABrite Inks are compatible with a variety of papers, including¹:

Matte Surface Papers	Glossy Surface Papers	Specialty Media
<ul style="list-style-type: none"> • Plain Paper • Epson Premium Bright White Paper • Epson Photo Quality Ink Jet Paper • Epson Matte Paper Heavyweight • Epson Double-Sided Matte Paper 	<ul style="list-style-type: none"> • Epson DURABrite Ink Glossy Photo Paper • Epson Glossy Photo Paper • Epson Premium Semigloss Photo Paper <p><i>Note: The Epson Premium Glossy Photo Paper is not compatible with DURABrite Inks</i></p>	<ul style="list-style-type: none"> • Epson Photo Quality Ink Jet Cards • Epson Ink Jet Transparencies

Advantages of DURABrite Inks—Durable Output

With its special formulation of pigment inks, DURABrite Inks offer water-, smudge-, and light-resistance on all supported paper types, including plain paper. They have greater durability properties than conventional dye-based inks.

- Water- and Smudge-Resistant Prints:** Conventional dye-based inks are comprised of color-forming molecules that are absorbed into the paper or captured in the coating of RC (Resin Coated) papers, much like a watercolor paint. DURABrite Inks consist of insoluble pigment particles, much like an oil paint, that “rest” on the paper’s surface. Although conventional dye-based inks are water-resistant on specific glossy photo papers, they do not have water-resistance on matte papers. DURABrite Ink is water-resistant on glossy, matte, and even plain papers:

Conventional Dye-Based Ink



Conventional dye-based ink particles are absorbed into the fibers of plain paper and are soluble in water.

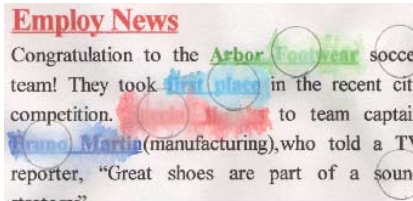
DURABrite Inks



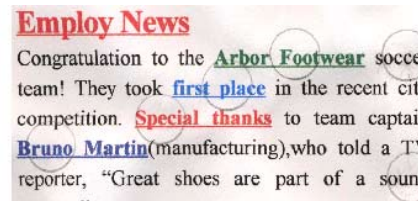
DURABrite Inks pigment particles “rest” on the surface of plain paper and are insoluble in water.

The water- and smudge-resistant properties of DURABrite inks prevent accidental damage caused by moisture and spills. Many competitive printers use a water-resistant pigment black, but DURABrite Inks are the only ink system that is pigment-based for black and color printing.

With competitors’ inks, only black is water-resistant



DURABrite Inks have water-resistant properties for black and color

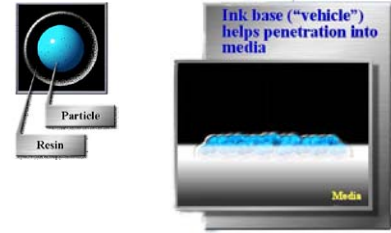


- Light-Resistant Prints:** DURABrite Inks are fade-resistant, so cherished photos and important documents will stand up to harsh outdoor sun or indoor lighting. What’s more, DURABrite Inks have high light resistance—even on plain paper. No competitive printer currently offers light resistance on plain paper.²



Advantages of DURABrite Inks—Great for Text Documents and Photos

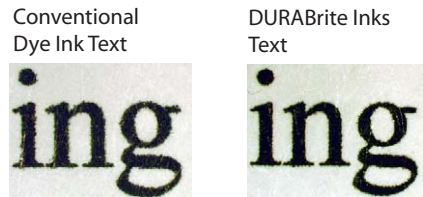
The newest formulation of DURABrite Ink uses an exclusive technology where each pigment particle is encapsulated in a resin. A unique polymer pulls the particles apart so they are suspended in the solution and never coagulate. The ink base then helps the DURABrite Ink pigment particles penetrate into the paper.



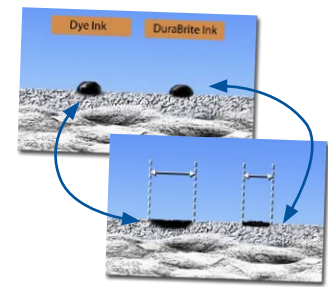
Using this technology, DURABrite Inks have several benefits for text printing:

1. **Extra-sharp text and graphics, especially on plain paper:** Because conventional dye-based ink acts much like a watercolor paint, its molecules are absorbed into plain paper. The spread of ink into the paper's fibers is known as feathering or dot gain. When printing on RC papers, dot gain of conventional dye-based inks is controlled because the coating catches each ink droplet.

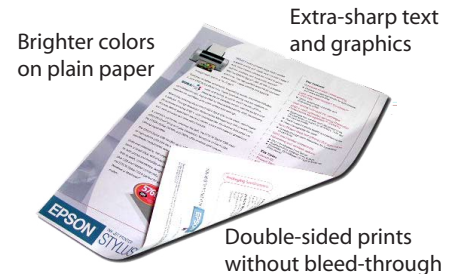
DURABrite Inks' pigment particles "rest" near the surface of the paper and are not absorbed into the fibers like conventional dye inks. As a result, DURABrite Inks have a much smaller spot size than dye-based inks and text printing will be especially sharp:



With the same size ink droplet, DURABrite Inks have a smaller spread into the fibers of plain paper than dye inks



2. **Double-Sided prints without bleed-through:** DURABrite Inks use a special technology that controls the penetration level of the ink and keeps the colorant near the surface. Additionally, output on plain and matte papers is optimized with a higher optical density.
3. **Brighter colors:** DURABrite Ink uses an innovative formulation of color inks, producing brighter output on plain, matte, and glossy paper.



While DURABrite Inks produce excellent text and everyday documents, they also have the flexibility to print photos:

1. **High quality, long-lasting output:** DURABrite Inks deliver long-lasting water-, smudge, and light-resistant prints ideal for printing cherished photos. The best papers for printing photos with DURABrite Inks (listed in order) are³:

- Epson Matte Paper Heavyweight
- Epson DURABrite Ink Glossy Photo Paper
- Epson Glossy Photo Paper
- Epson Premium Bright White Paper
- Plain paper

2. **Epson core printing technologies:** Printers featuring DURABrite Inks use the Epson core printing technologies which combine high resolution and small variable-sized ink droplets to precisely print crisp details in photos as well as producing improved color range and accuracy. Plus, the newest printers with DURABrite Inks feature BorderFree printing, making it easy to produce full-bleed snapshots right out of the printer—without trimming or perforations.

DURABrite Inks have the flexibility to print photos on plain, matte, and glossy papers



Advantages of DURABrite Inks—Low Cost of Ownership

DURABrite Inks offer low cost of ownership with:

- Excellent output on plain papers—Because you don't have to use specialty papers to obtain the best print quality, DURABrite Inks offer convenience and cost savings. DURABrite Inks also offer the flexibility of printing on matte, glossy, and semi-glossy papers.
- High-yield, individual ink cartridges—Individual ink cartridges let you replace only the ink that has run dry. If you print large print runs or presentations that use primarily one or two colors, you will see a great cost savings. When comparing printers, remember to consider both the cost and the yield of the ink cartridges—lower cost cartridges with lower yields can be much more expensive to use over the long term.



Summary

Epson DURABrite Inks combine the durability qualities of pigment ink with the color qualities similar to dye inks to produce:

- Water-, smudge-, and light-resistant prints, even on plain paper
- Optimization for plain and matte papers with quality results on glossy papers
- Sharp, dark text printing without feathering

With high-quality, durable output, DURABrite Inks are the ideal choice for printing reports, web pages, greeting cards, presentations, report covers, resumes, menus, and your favorite photos. DURABrite Inks produce great photo image quality with water-resistant and light-resistant properties unrivaled by dye-based ink.



For complete details on how DURABrite Inks compare to other Epson ink technologies, refer to the *Epson Ink Solutions* document.

DURABrite Inks have previously been featured on the Epson Stylus C80, Epson Stylus C82, and Epson Stylus CX5200, and are currently featured on the following Epson printers:

Epson Stylus C64³



Epson Stylus C84³



Epson Stylus CX5400
All-In-One Printer



Epson Stylus CX6400
All-In-One Printer³



Visit www.DURABrite.com for the latest information on DURABrite Inks, testimonials, and more.

¹ Because the Epson Stylus C80 uses a different variation of DURABrite Inks, it supports different papers. While current models support Epson Glossy Photo Paper, the Epson Stylus C80 does not support those papers, but does support Epson Premium Glossy Photo Paper (not supported on the current models).

² The initial formulation of DURABrite Inks, used in the Epson Stylus C80, was not rated for lightfastness on plain paper.

³ The EPSON Stylus C64, Epson Stylus C84, and Epson Stylus CX6400 include the latest formulation of DURABrite Inks with improved printing on glossy papers.

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