Océ
CrystalPoint

OCÉ CRYSTALPOINT TECHNOLOGY

Canon's patented Océ CrystalPoint® technology was developed to deliver high quality color and monochrome output independent of media type, making it ideal for a wide range of applications including CAD, GIS, and graphics. Its unique technology offers users the best qualities of traditional inkjet technology combined with the best features of LED/toner-based printing systems—and in a sustainable eco-friendly process.

Similar to toner based systems, Océ CrystalPoint technology gives you water-fast, direct dry prints. When you add the media independent quality as well as the consistency of the output, Océ CrystalPoint technology capitalizes on the best aspects of toner based systems. And much like inkjet-based systems, Océ CrystalPoint technology has high accuracy of printing, system versatility, and cleanliness (no ozone or system contamination). This "best of both worlds" design provides the foundation of Océ CrystalPoint technology based systems, delivering high quality, productivity, and application versatility.

How Océ CrystalPoint technology works

SOLID-IN SOLID-OUT (SISO) TONER CONCEPT

The process of the Océ CrystalPoint technology is based on a Solid-In Solid-Out (SISO) toner concept, whereby Océ TonerPearls® are melted into a toner gel that is jetted and crystallized onto the media. No water is applied in the printing process so media does not get wet, no drying time is required, and there are no media shrinking issues. This process has three steps:

- Océ TonerPearls
- Toner Gel Jetting
- Toner Crystallization

Step 1: Océ TonerPearls—Solid-In (SI)

The Océ CrystalPoint printing process starts with the patented Océ TonerPearls. These round shaped pearls have several advantages:

- The solid form is a very clean way of handling toner. Dust is prevented, so no dirty hands when refilling and no dust in the air.

- The spherical shape of the Océ TonerPearls means they are easily separated and transported into the system.

- The see-through cartridge makes it easy to view the remaining toner level in the system for each color.
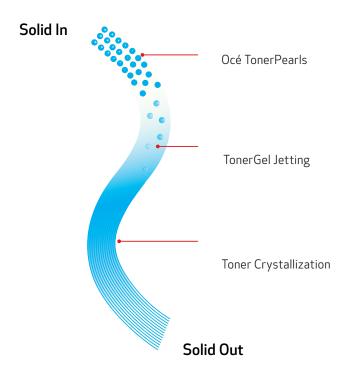
Step 2: Toner Gel Jetting

After the Océ TonerPearls are fed into the system, they are melted into a gel form. This gel is then jetted onto the media. Due to the nature of this gel layer, the toner will not feather on plain paper like typical thermal/ aqueous inkjet will. The gel adheres on the media exactly where it is applied, resulting in very crisp lines and texts and no blurring of colors.

Step 3: Toner crystallization—Solid-Out (SO)

The third and final element of the Océ CrystalPoint technology is the toner crystallization. The Océ TonerPearls contain a crystallization agent that controls the length of the gel phase of the toner after jetting. This ensures the toner will start crystallizing only after the gel has created a "good grip" onto the media. After crystallization, the toner is therefore extremely well bonded to the media. The whole crystallization process only takes a few seconds, resulting in direct dry prints.

Solid In

Océ TonerPearls

TonerGel Jetting

Toner Crystallization

Solid Out

A GREEN CONCEPT

Océ CrystalPoint technology's SISO toner concept also supports green technology efforts:

- Solid Océ TonerPearls ensure no system contamination with "powder" toner or dust.

- The system does not emit ozone like conventional LED print technologies. Ozone emissions can cause sick-building syndrome, which is why Canon has made innovations to Océ LED technology like incorporating a catalytic converter to mitigate ozone emissions. With Océ CrystalPoint technology, Canon has eliminated ozone emissions entirely.

- Océ TonerPearls are odorless, unlike ink from thermal inkjet systems. This improves the working environment, which is an important element of sustainability.

- The system does not need to use coated media, thus saving on the environmental impact of paper coatings.

- Océ CrystalPoint technology has very good deinking properties, making the prints much more environmentally friendly than standard inkjet prints. The toner can be separated from the media making it easier to recycle the paper.

Océ PAINT Technology

To further improve the consistency and quality of the output from Océ CrystalPoint based systems, the Océ ColorWave® 500 printer and Océ ColorWave® 700 printer feature our unique patented Océ PAINT® technology (Piezo Acoustic Integrated Nozzle Technology). With any printer, dust particles and paper touches can cause printing nozzles to fail, resulting in a thin white line on prints. Océ PAINT technology applies sophisticated diagnostics, maintenance, and error corrections to overcome common nozzle issues that occur with conventional inkjet technologies—even while printing.

Océ PAINT technology:

- Ensures consistent, high quality prints

- Increases throughput

- Expands system lifetime

Thanks to Océ PAINT technology, no user intervention and no daily maintenance is required. The system will perform maintenance—including nozzle failure correction and drop size control—fully automatically, ensuring consistent print quality and high reliability.

HOW OCÉ PAINT TECHNOLOGY WORKS

Océ PAINT technology leverages the piezo elements at the heart of Océ CrystalPoint print technology. As each toner drop is generated, the printer measures the nozzle's acoustic pulse to detect if it's working correctly. An integrated camera also detects "skewed" drops. The printer can then take effective counter measures. It can clean a dirty nozzle, adjust for nozzle failure, and correct the drop size without any user intervention.

The Océ ColorWave 500 printer and Océ ColorWave 700 printer perform the following steps automatically:

- Before printing, the printer checks the status of each printing nozzle and cleans a specific nozzle, if required, in just seconds. This decreases maintenance and waste and extends the life of the system

- During printing, the printer can detect and compensate a nozzle failure on the fly, so a print is not ruined and high throughput is maintained

- Over the entire system lifetime, the printer measures and corrects the actual drop size to ensure consistent print quality and color matching, print after print, year after year

The net result is consistent, high quality professional output without hassle or user intervention.

Key benefits of Océ CrystalPoint technology

By combining the advantages of both LED and inkjet technology, Océ CrystalPoint technology enables:

Consistent high quality output with sharp information

Océ CrystalPoint technology produces highly accurate fine details and sharp lines with no toner feathering. The solid toner also produces a shine when placed onto the media which boosts the image quality on plain papers, unlike the inkjet technologies where the image would be viewed as dull or flat, or even over-saturate the media. Patented Océ PAINT technology ensures automatic on-the-fly diagnostics and maintenance to ensure high quality over years of use.

High quality results on low cost uncoated media

Inkjet systems typically require coated substrates to optimize print quality, particularly with heavier coverage applications. And, when using media that is not coated, such as inexpensive engineering bond, the coarse fibers in the media cause the ink to feather or run. This means either compromising print quality or using more expensive coated media. However, Océ CrystalPoint systems can output high quality, independent of media type, due to the inherent qualities of the solid toner technology.

Versatile application capability

Users can print high-quality documents on a large range of media from inexpensive and recycled bond to presentation media such as semi-gloss, polypropylene, fabrics, wallpaper, and even vinyl. And, because the gel is crystallized as soon as it hits the media, it dries instantly, which means your print will come out dry, cut, stacked/collated, and ready to be used, avoiding the need for long finishing time. Because the print media does not need a heat application, specialized and exotic substrates can be used, such as Tyvek® and satin fabric. These types of media would literally melt inside a traditional LED toner printer. The wide range of compatible media combined with the high print quality, translates to an abundance of applications that can be printed.

Water-fast output requires no lamination

Output can be used in wet environments with no risk of smearing or information loss. Make notes on documents with markers without any smearing, and fold with no risk of fold-lines resulting in information loss. Particularly when combined with tear-resistant media such as Tyvek, documents are ideal for use in heavy-duty areas like the oil industry and field maps for emergency situations.

Océ CrystalPoint and Océ PAINT technologies are part of the Océ ColorWave 500 system and Océ ColorWave 700 system.

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