

Inkjet Codes with SigNature[®] Molecular Tags for Supply Chain Traceability and Brand Protection

BEST-SELLING LEGACY PRINT SOLUTION



Established in the 1970s, continuous inkjet printing (CIJ) is still the coding option of choice among many industries today, and for good reasons. CIJ coding is an affordable, high-volume solution, compatible with multiple substrates, fast-drying, durable, and meets identification requirements across a wide range of products and packaging. The aim of every manufacturer is to keep production lines moving, without sacrificing quality compliance in the proper

identification marking of goods. Whether it's a date code on a food product, batch identifier for a cosmetic item, or unique serialization identifier for a mission-critical aviation component, CIJ has proven to be the most efficient and best-selling coding solution currently available.

GOVERNMENT REGULATIONS AND CONSUMER PRESSURE ESCALATE

The demand for product traceability and product source substantiation has grown exponentially, with pressure coming from governments and savvy consumers. End-users, both institutions and consumers, want to know: *Where does my product come from? Is it authentic? Is it really made from recycled materials? How do I know this actually contains fair trade materials?*



To properly answer questions about traceability, many industries have relied on a "paper trail". The inefficiency and risk associated with this method are substantial and well-documented. In the age of cloud-computing and emerging blockchain-based tracking applications, supply chain management software is only as good as the data entered. Physical authenticity and source traceability of goods must be verified with absolute certainty, if the resulting data is to be trusted. Without certainty, traditional documentation isn't worth the paper it's printed on.

STRATEGIC PARTNERSHIP LEADS TO INNOVATION



In response to the urgent need for reliable, affordable security technology, Videojet Technologies and Applied DNA Sciences have created the world's first molecular-based security print platform. The platform is comprised of co-branded Applied DNA SigNature® molecular inks, and a co-branded Videojet Technologies CIJ printer with security modifications that enable the use of only customer-specific SigNature molecular-tagged inks. Approved customers will have one, or several, unique SigNature molecular tag(s) created to identify a manufacturing location, with a corresponding CIJ printer programmed to only accept that uniquely tagged ink cartridge. Each printer can have its own custom tag, if a customer desires. The full platform is a carefully designed, close-looped system developed by Applied DNA and Videojet's leading scientists and security experts.

READY-TO-SHIP SOLUTION

The initial rollout, now available, includes Videojet's newly released 1860 CIJ printer, re-branded as the **1860M**, which includes specific security upgrades to accommodate customer-specific SigNature molecular inks. There are currently two SigNature molecular inks qualified – an overt black ink and a covert, UV-fluorescent ink.

The first SigNature molecular ink available is **V4221M**, an aerospace-approved coding ink (commercially known as V421-D). This durable black ink was developed to meet the specific application needs of the US military and aviation industry as unique identifier (UID) coding for an array of flight critical components. Initial qualification testing, performed under Applied DNA's Rapid Innovation Fund contract awarded by the Office of the Secretary of Defense, confirmed that SigNature molecular tagged ink does not impact printer uptime or operation. Beyond its application in critical flight components, this ink is most commonly used as a date and lot code marking solution for food, tobacco, coffee, baby, health and personal care products. [Full manufacturer data sheet is available upon request.](#)





For customers requiring a discreet and covert coding option, there is SigNature molecular-tagged ink **V4259M** (commercially known as V4259). Intended as a complement to V4221M and applicable to the same wide range of substrates, this ink is clear and fluoresces blue under ultraviolet light. V4221M and V4259M can be used together on one item, for customers requiring an invisible security option to track and secure their products beyond traditional overt product marking.

INTRODUCING CERTAINT® WITH CIJ

CertainT (pronounced *certainty*) is the tri-fold platform that represents the full spectrum of services that Applied DNA offers to its customers. CertainT greatly enhances and complements quality assurance, compliance, and industry best practices.

CERTAINT INCLUDES 3 ELEMENTS: TAG, TEST AND TRACK

1. **TAG:** SigNature molecular tags are present in the CIJ printed codes to provide traceability, transparency, and trust in supply chains. Each molecular tag is created as a unique sequence and added to a Videojet ink designed to adhere to the substrate after printing. Molecular tags are designed to be robust, safe, and inert, and have no impact on the performance of the ink. Our SigNature molecular taggant technology has been used by European law enforcement since 2009 to help convict over 115 criminals charged with cash-in-transit crimes. The US Defense Logistics Agency has used SigNature molecular taggant-embedded inks to secure over 800,000 microcircuits. Over the last 3 years, Applied DNA's SigNature T tags for textiles have been applied to over 160 million pounds of US grown cotton.

2. **TEST:** In-field testing can be performed at multiple points in the supply chain using our mobile SigNify® IF molecular tag reader. After a CIJ code is swabbed and the sample prepped, authentication results can be retrieved in as little as 35 to 45 minutes. In addition to in-field testing, the full spectrum of lab services consisting of forensic level authentication analysis and reporting are available for all samples submitted to our ISO 17025 certified forensic laboratory in New York. Applied DNA can generate a Certificate of DNA Analysis (CoDA), or a full Expert Witness Report (EWR), that an Applied DNA Sciences scientist will be prepared to testify to in a court



of law.

3. **TRACK:** Gather data to support product claims of authenticity, origin, and provenance. The CertainT cloud-based portal can be configured, along with VideojetConnect Remote Services, to customers' specific needs and allows for easy access to key data and customized reports. The aggregation of manufacturing site and downstream test data can be viewed on a consolidated basis to help gauge compliance throughout the entire supply chain.



CertainT is about gaining consumer confidence through **Traceability**, **Transparency** and **Trust** in supply chains.

The Applied DNA-Videojet SigNature molecular tagged ink solutions are an economical and seamless way to effectively monitor your supply chain, while delivering on your brand promises to customers.

Applied DNA's forensic-based CertainT platform ensures:

- Quality expectations are met
- Brand claims are substantiated
- Mitigation of brand liability and risk
- Authentication testing protocols validate and prove supply chain integrity
- Prevention of counterfeit and product diversion with increased awareness, systematic testing, and secure protocols.

Every customer's requirements and goals are different. For more information about our solutions, including pricing, please contact us to set up a meeting. We look forward to hearing from you.

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