



Formulated for optimal
performance and
maximum uptime

Videojet

Inks and fluids expertise



**“Our chemically-advanced
and proven inks are designed
for today’s applications and
production environments.**

**We’ll stick our
reputation on it!”**



Anthony Selmeczy
Ph.D.
Lead Chemist

Lin Zhu
Ph.D.
Director – Ink Development



Selection, quality & expertise

Over 40 years of ink and fluid technology, starting with those created for the first commercial inkjet printer, goes into every ink that Videojet formulates and delivers today. With over 640 application-unique fluids, Videojet manufactures more fluids and supplies than any other industrial coding and marking manufacturer.

Uptime advantage

Minimize the frequency and duration of planned and unplanned downtime through our specially formulated inks that are optimized to the hardware solution you have specified. We can help you foresee problems and recommend solutions that will get you to optimal coding performance, right from the start.

Code Assurance

By taking a systems-based approach and by testing more rigorously than anyone, we help ensure consistent quality codes throughout the expected lifetime of your product. This will give you confidence that your code integrity will be supported – whatever the environment.

Built-in productivity

Just as you are always improving your processes to become more efficient, we are constantly researching new ink formulations that help meet your challenges such as faster line speeds, more code content in less space, and more diverse packaging types.

Simple usability

Our goal for ensuring superior usability is simple: No mess, no waste, and no mistakes! We make ink replenishment clean and simple through Smart Cartridge design. You can keep track of your fluid levels through built-in cartridge intelligence. Supplies management can be made easy with our tailor made fluid contracts.



Optimal printer performance achieved through superior ink and fluid formulations



Videojet ink development

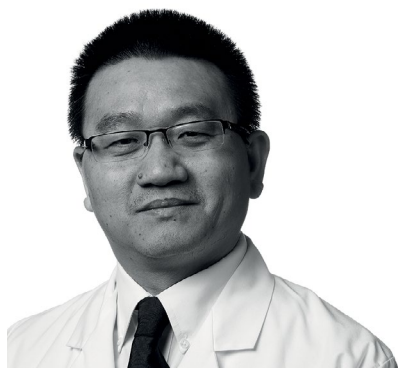
“We ensure Inks and their raw materials meet purity and filtration standards to minimize the risk of contamination that could impede critical printer operation”

Long-standing supplier relationships and experience in selecting highest grades of specialized chemicals provide consistent, proven performance.

Chemical stability is constantly monitored and evaluated. In-house analytical laboratories employ sophisticated and analytical equipment to test 100% of ink batches produced.

All inks and fluids pass rigorous development tests that prove their robustness prior to release. Tests include:

- printer/ink qualification across a full-range of temperatures
- accelerated aging
- raw material and process variation control



Frank Xiao
Ph.D.

Staff Chemist
Bottling, secondary packaging, “green” ink,
pigmented wire and cable

Sherry Washburn
M.S.
Lead Chemist
Food processing and postal inks



Industry-specific ink formulations:

- | | |
|--------------------|---------------|
| Aerospace | Automotive |
| Wire & cable | Beverage |
| Pharma | Dairy |
| Fresh foods | Frozen foods |
| Building materials | Personal care |



Partner with Videojet

Understanding what customers value, selecting the appropriate inks for applications, and determining how to integrate marking and coding into production processes can be challenging undertakings. Videojet has the experience and technology to assist through all aspects of industrial marking and coding.

With over 325,000 installed printers coding well over a billion products every day, Videojet delivers marking and coding solutions to a wide range of industries and applications.

Videojet experts help customers utilize these solutions to grow market share, increase throughput, improve operational efficiency and meet regulatory requirements.

Inks for 1000 Line and other Videojet Continuous Inkjet printers

Over 340 inks are available for use in Videojet continuous inkjet printers. Most inks have a combination of the special properties listed below. Your Videojet representative will help you choose the best inks for your particular applications. From inks that penetrate thin layers of condensation and withstand the pasteurization process, to those that offer outstanding adhesion to steel, aluminum, glass, metal and wax coated substrates, Videojet engineers both standard and custom solutions to address unique customer requirements.



Food grade

Since 1991, Videojet has been producing food grade inks in its dedicated ISO9001:2008 qualified Food Grade Ink Production Facility which operates under Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) processes. All raw materials used in these inks are food grade quality. Videojet manufactures over 20 unique food grade fluids including some that are Kosher.

Ideal for: eggs, pills, capsules, candy and confectionery; certain incidental food-contact products such as flavor packs contained within a food package

Fast dry

Ideal for rapidly moving production lines including those running web-based films and production lines that have tight material handling control, these Videojet inks dry and cure very quickly. They incorporate special fast-dry solvents and compatible resin technology necessary when there is little time between each code and when those codes come into contact with typical conveyor components and each other.

Ideal for: high speed consumer packaged goods including food packages using films and stretch/shrink wraps; for decoration and branding

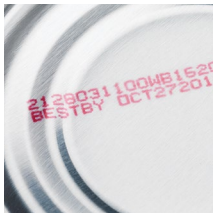
Non-transfer/high temperature resistant

After being extruded and before being wound onto spools, coded cables and wires are often still warm. Warmth, plasticizers in the cable jacket, and the pressure between one cable and another on the spool can all challenge ink code adhesion. Codes on cooked and stacked food cans may also have direct contact with other cans. Videojet special non-transfer/high temperature-resistant inks are designed to minimize code offset and transfer.

Ideal for: PVC, PE, PP, cross-link PE, cans

Mike Kozee
Ph.D.

Extrusion, security
and product decoration



Retort & thermochromic Black to Red/Black to Blue

These inks are designed to produce a color-changing quality assurance indicator to alert the manufacturer that food has passed through a critical retort process. Cooking sterilization temperatures between 115-130°C (239-266°F) for 20-45 minutes or longer to preserve flavor and texture. MEK-free ink formulas are available.

Ideal for: soups, vegetables, sauces in aluminum and tin-free steel cans; chopped meat in polyester, nylon, aluminum, and polypropylene film laminated pouches; single serving plastic tubs and trays

Condensation-resistant/ caustic-removable

When applied immediately after the cold-filling process, these inks penetrate the condensation layer to adhere to beverage cans and bottles. Videojet condensation-resistant inks are durable during pasteurization and refrigeration/re-cooling. Videojet caustic-removable inks are soluble to common caustic wash solvents used in the recycling/refilling process. Certain inks can perform as a single-solution for bottlers producing a mix of returnable and non-returnable beverages.

Ideal for: bottles, cans and bulk water containers

Solvent/chemical- resistant; heat cured

When subjected to temperatures around 175°C (350°F) for 30 minutes, codes printed with Videojet solvent/chemical-resistant inks become cured and resistant to offsetting/transfer and removal by steam, general abrasion, and many solvents.

Ideal for: automotive and aerospace parts exposed to environmental solvents including, oil, lubricating fluids, antifreeze, and diesel fuel; electronic components and parts (extruded and molded connectors and housings subjected to cleaning solvents and defluxers); personal care products containing certain soaps and isopropyl alcohol

Inks for Videojet Continuous Inkjet (CIJ) printers

Additional inks feature unique properties, benefits and substrate compatibility to meet specific application requirements:

- Non-bleed bar code
- IPA/Alcohol-resistant colors
- Color variants (red, blue, violet, gray, green)
- High visibility colors
- Chemical-resistant
- MEK-free high durability plastics
- Egg shell
- Foil/thin films
- Electronics



Light/fade resistant

Videojet engineer inks with special dyes and/or pigments to resist the fading effects of UV light exposure. These inks are ideal for coding on materials that may be temporarily or permanently exposed to outdoor sunlight. Even products or fixtures exposed to longer term indoor artificial lighting exposure can benefit from UV fade resistance and code longevity.

Ideal for: extruded window frames, cable/wire temporarily stored outdoors and building materials

Invisible Fluorescing UV readable

Packages, bottles and certain products may require discrete fluorescing codes and brand information that are only visible under UV lighting. An unobtrusive solution for coding and tracking products through the supply chain, invisible fluorescing inks are also employed where the available package/label "real estate" is limited or is obscured by package graphics or secondary codes.

Ideal for: automotive parts, aerosol cans, pharmaceuticals, retort processed food containers and cosmetic packaging

Oil penetrating

Metal automotive parts and extruded metal pipe sometimes contain lubricants that aid in their forming, bending or machining processes. Along with these lubricants, oils used as rust-preventatives can inhibit ink adhesion unless special ink chemistry is employed. Unique ink solvents and resins in Videojet's oil penetrating inks help the inks to achieve excellent adherence through these protective layers.

Ideal for: automotive parts, formed metal extrusions and stampings, and plastic components formed using mold release compounds

John Garrett
B.S.

Sr. Chemist
Substrate analysis



Flexible films/plastics

BOPP, HDPE, PE, PVC, PP, PET, acrylic, ABS, polystyrene and treated polyethylene film can all present challenges to an ink's adhesion due to their inherent "slick" surface properties and use of various plasticizers. The formulation of Videojet's flexible films/plastics inks focuses on the toughest of these materials to provide optimal adhesion and code durability.

Ideal for: *food packaging bags and pouches, cups and tubs, shrink films, cosmetic and chemical bottles*



High contrast

Opaque pigmented inks are formulated to create highly visible codes, typically on dark colored surfaces. They also resist the pressure and heat of packaging environments and product-to-product contact during processing. With a range of colors available, some are uniquely designed to create high visual contrast on both light and dark colored surfaces to eliminate the expense of switching inks.

Ideal for: *extruded products including cable, wire, pipe, hoses and belts; glass and plastic bottles and containers*



Heat/steam cure

Extruded rubber products, such as hoses, belts and tires, undergo a unique two-step manufacturing process. After extrusion, they are cured (vulcanized) for approximately 30 minutes at 175°C (350°F) using pressurized steam heat. Many other inks fade or disappear during this process while Videojet's heat/steam cure inks provide good color retention and adhesion throughout the curing process and beyond.

Ideal for: *automotive radiator hoses, transmission belts, tires, and extruded butyl rubber moldings*

Videojet 1000 Line ink delivery systems

The Smart Cartridge™ fluid system provides a self-contained, intelligent design for simple usability



Videojet 1000 Line inkjet printers feature the leading Smart Cartridge™ ink delivery system

Designed to:

- **Reduce mess:**
With the Smart Cartridge™, there is no pouring of fluids to refill the ink well. The advanced needle-and-septum design keeps fluids from spilling and leaking. Each cartridge is easy to remove and replace – and the septum seals itself every time the cartridge is handled.
- **Minimize waste:**
The Smart Cartridge™ is designed to help eliminate fluid waste. With its downward-facing outlet, gravity and the contour of the inner bottle, minimal fluids are left in the cartridge.
- **Deliver virtually no mistakes:**
Smart Cartridge™ technology helps ensure that compatible fluids are used every time. When a new cartridge is installed, it synchronizes with the printer and draws fluid from the cartridge after the system validates the fluid's compatibility.

Bulk Fluids System extends run times with Videojet 1000 Line inkjet printers

Fewer cartridge changes, longer run times and less printer intervention are all made possible with the Bulk Fluids System. Designed especially for high-volume print applications, it feeds 1000 Line printers with 5 liters (1.3 gallons) of ink or make-up. The Bulk Fluids System employs Videojet's Smart Cartridges™ for clean, easy and foolproof fluids usage.





Inks for Videojet/Wolke Thermal Inkjet printers

Wolke Premium Black

Wolke Premium Black is a high-contrast, high-reliability, fast-drying thermal inkjet ink that has been engineered by Videojet for optimal performance with Videojet and Wolke thermal inkjet systems.

Key advantages of this ink are:

- 33% darker than Universal Black 7482
- Excellent decap time provides enhanced recovery over prolonged line stoppages
- High bar code quality

Wolke Universal Black

Wolke Universal Black ink (WLK667482) has been the standard thermal inkjet ink used in a variety of pharmaceutical, tobacco, and food applications. Delivering the optimal combination of long decap time (0.5-2 hours) and short drying times, these inks are ideal for printing on varnish-free chipboard boxes and other paper substrates. This premium thermal inkjet ink delivers high quality print even after long printing breaks.

Specialty inks

Many thermal inkjet applications call for colors beyond black. Videojet offers spot colors including red, blue, and green. Both water-based and solvent inks are available for printing on coated substrates.



Ink is delivered by cartridges designed to fit Videojet and Wolke printheads



by **VIDEOJET**

Inks for large character markers and case coders



“We follow the general mantras of finding best technical solution, making it printer friendly and then testing it like our customers would in the real world.”



Russ Peters
B.S.

Technician Manager
Ink/Printer environmental test and qualification

Videojet 2300, 2120, Patrion Plus, Unicorn and the complete Marsh line

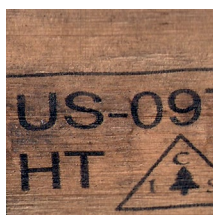
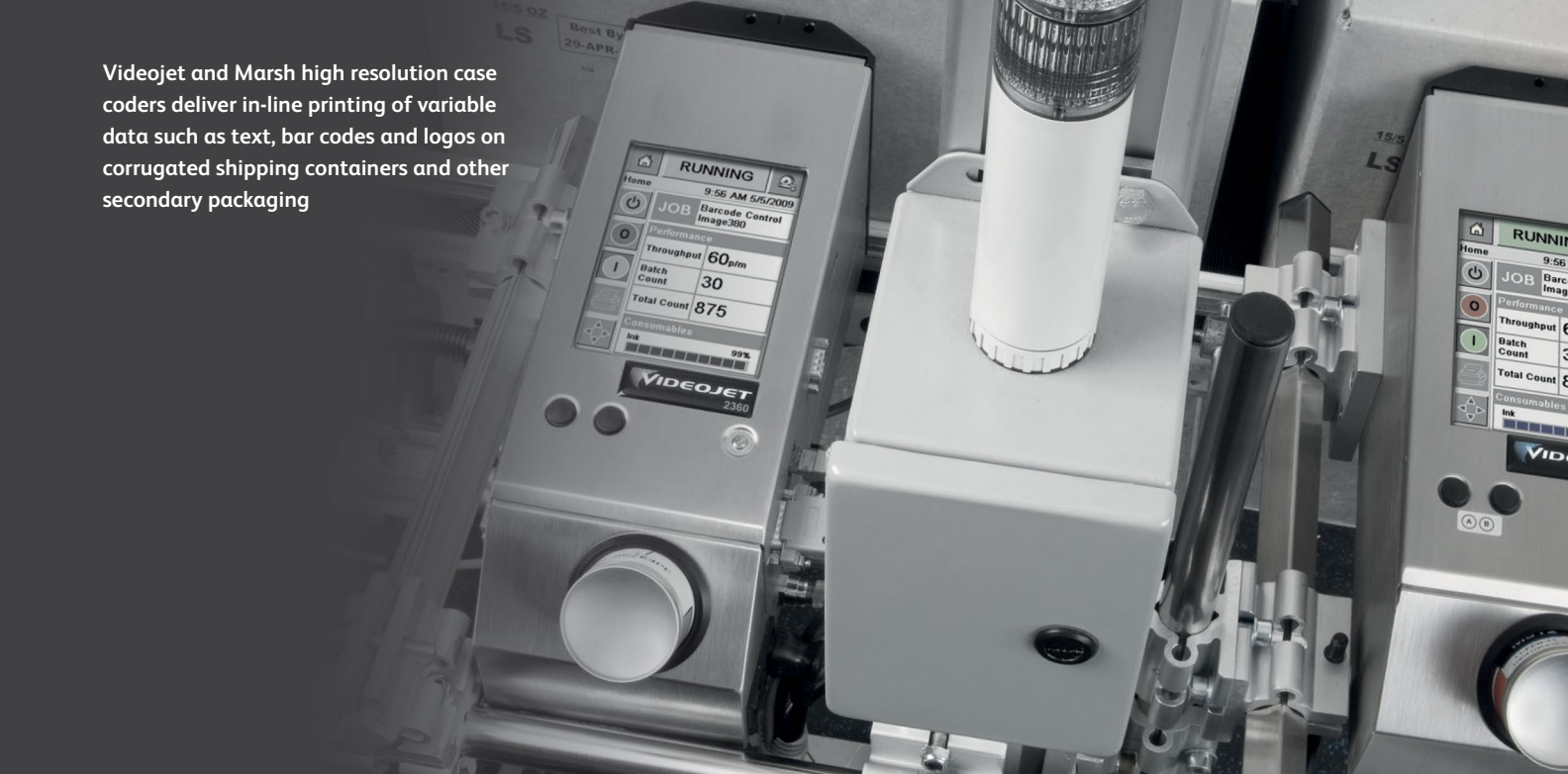
Videojet offers over 60 quality Videojet/Marsh brand inks to ensure maximum performance large character markers and case coders.

Both general purpose and specialized inks suit industry and environmental needs.

- Inks for high resolution printing are supplied in non-pressurized ink cans for mess-free ink delivery
- Inks for low resolution printing are water-, alcohol- or MEK-based to accommodate porous or non-porous material

Certain Videojet/Marsh inks are designed to dry in just a few seconds. They adhere to an array of products and packaging materials including metal, plastic, poly, woven poly, and claycoat.

Videojet and Marsh high resolution case coders deliver in-line printing of variable data such as text, bar codes and logos on corrugated shipping containers and other secondary packaging



Large Character porous surface

Certain materials such as bulk paper products and bags may require large production codes that can be easily distinguished in dim warehouse lighting or read at great distances from the product. Videojet/Marsh inks for porous surfaces are designed to economically produce large and highly visible codes. The inks dry primarily through a combination of absorption into the porous surface and the evaporation of solvents.

Ideal for: paper bags, pet food bags, gypsum board, plywood, roofing materials packaging, bulk paper products, corrugated boxes and trays



High-resolution porous surface

Meeting the challenges of secondary cartons, lumber and pulp products of varying quality, surface finish/treatments and recycled content, these inks achieve consistent code quality when printing higher resolution bar codes and multi-line production codes. Black, red, blue, green, purple and orange inks are composed of pigments in a glycol and oil-based formula to produce crisp, sharp codes.

Ideal for: corrugated shipping boxes, crates and board material, lumber and bulk pulp/paper and porous extruded materials



Premium Roast



Solvent-based non-porous surface

Materials such as shrink and plastic wrap, non-porous containers and films are inherently resistant to code adherence. These materials also require inks that do not smear in typical product-to-product or production line contact. The formulation of Videojet solvent-based inks for non-porous surfaces helps them to bind well to these resistant surfaces and dry quickly using ethanol and other fast-dry solvents.

Ideal for: shrink wrapped water and beverage trays, extruded pipe, highly varnished secondary boxes



Environmentally-friendly inks and processes

Green coding

One component of ink, the solvent, is employed as a carrier of both the dye and resin and is crucial to facilitating the application process. Many chemicals can be used as an ink's solvent including methylethylketone (MEK). With the goal of reducing VOCs/HAPs, food packaging migration, carcinogens and allergens while meeting different green requirements of many industries, Videojet offers dozens of inks that employ alternative solvents such as ethanol, acetone and water.

“The world is always changing and to formulate reliable inks, we’ve built a system to track the 40+ year history of all the raw materials we use.”



John Garrett

B.S.

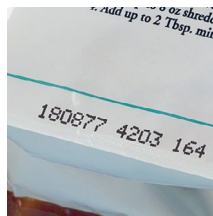
Sr. Chemist
Substrate analysis



Low-odor

Certain consumable goods and foods tend to acquire odors from their environment during manufacturing, packaging and coding processes. To address this, Videojet's low-odor inks have been specially formulated with solvents and compatible resins/dyes that are virtually odor free. They are designed to reduce the need for air venting and offer the least impactful coding process possible.

Ideal for: *bread and pastry packaging and other food packages that are coded in close proximity to the food filling process and tobacco products packaging*



No-MEK

Even though MEK is not classified as a HAP (hazardous air pollutant) nor an ODC (ozone depleting chemical), local regulations and preferences can limit use of MEK-based inks. The MEK-free ink range matches to a wide variety of surfaces, coding processes and durability requirements. Some of these inks can also offer increased printer operating efficiency to further reduce solvent consumption

Ideal for: food containers, cans, pouches, bottles, etc., comprised of LDPE, HDPE, polypropylene, polystyrene, PVC, ABS, polycarbonate, stainless steel, tinplate, aluminum and glass

Fast dry

As a fast drying solvent, acetone is free of Volatile Organic Compounds (VOCs) and provides good code durability. Codes printed with Videojet's fast dry inks dry quickly to prevent smearing and offsetting.

Ideal for: high speed production lines that commonly incur product-to-product contact from adjacent products, or products that come into contact with production line rails and belts shortly after coding due to manufacturing line constraints; geographies with more stringent VOC permit requirements and regulations, or companies that have adopted specific corporate initiatives for VOC reduction

Inkjet printing vs. labeling

The choice of Videojet inks over labels on packaging can aid in compliance with government regulations while helping to meet a company's recovery, recycling and reuse targets.

In terms of sustainable packaging, only a very small amount of ink is used with inkjet coding compared to the amount of waste associated with labels and adhesives.



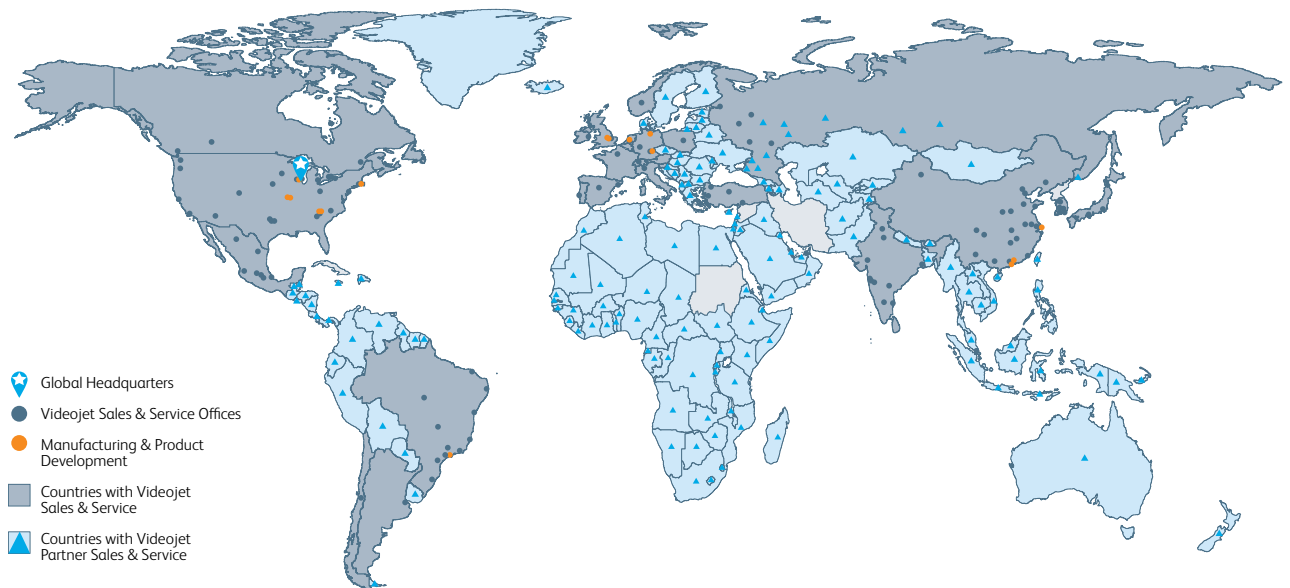
Peace of mind comes as standard

Videojet Technologies is a world-leader in the product identification market, providing in-line printing, coding, and marking products, application specific fluids, and product life cycle services.

Our goal is to partner with our customers in the consumer packaged goods, pharmaceutical, and industrial goods industries to improve their productivity, to protect and grow their brands, and to stay ahead of industry trends and regulations. With our customer application experts and technology leadership in Continuous Inkjet (CIJ), Thermal Inkjet (TIJ), laser marking, Thermal Transfer Overprinting (TTO), case coding and labeling, and wide array printing, Videojet has more than 400,000 printers installed worldwide.

Our customers rely on Videojet products to print on over ten billion products daily. Customer sales, application, service, and training support is provided by direct operations with over 3,000 team members in 26 countries worldwide.

In addition, Videojet's distribution network includes more than 400 distributors and OEMs, serving 135 countries.



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