



## Application Note



### Chemicals

## Continuous inkjet performance in chemical applications

### The challenge

Chemical facilities are often characterized by temperature extremes and dusty production environments. These conditions, as well as the chemicals being produced, can negatively affect code quality and be taxing on printing equipment. In less than pristine conditions, Continuous Inkjet (CIJ) printers are vulnerable to ink contamination and clogged printheads, which can result in increased maintenance requirements and costly unplanned downtime.

### The Videojet advantage

With 40-plus years of experience, Videojet is a trusted leader in CIJ printing technology. We offer 1000 Line printers with IP65 ratings and optional 316 steel construction that are engineered to perform in tough conditions. Performance is maximized through anti-clog CleanFlow® technology that helps keep ink from clogging the printhead. And with simple fluids replenishment, via needle and septum cartridges, ink contamination is avoided. This combination helps keep your printer clean and running longer, even in harsh environments. Add a simple user interface with networking options, and you have simplicity that performs—and clean, consistent codes, time after time.

### The customer need

Many operations in the chemical industry can be typified by hot and dusty environments. Problematic for some CIJ printers, the presence of dust in an ink system can affect its stability, causing misaligned codes and clogging of the printhead. This clogging leads to poor print quality, degradation of printer performance and increased maintenance. Changing environmental conditions within a chemical manufacturing facility can also be troublesome. Temperature fluctuations can alter print characteristics leading to poor print quality and missing data, both of which can require product rework or product disposal. To help mitigate these issues, CIJ printers must maintain clean printheads and ink reservoirs. Code reliability and printer success is also determined by whether the equipment is engineered to reliably produce high quality codes regardless of the rigors of the production environment.

### Dust particulate and compressed air systems

Dust particulate in the air is hard to control and it can easily accumulate. The minuteness of dust can be problematic for manufacturing equipment and with printers, it can lead to printhead build-up and poor print quality. To maintain print quality, printheads often require more frequent cleaning (versus in non-dusty environments). This means more downtime for printer maintenance. To address this issue, some producers use supplied air to eliminate dust from their printheads, but compressed air and a system to remove harmful impurities can be expensive. Beyond the initial costs of compressors and a distribution system for the air, ongoing power and maintenance requirements can add significant operational costs.

### Ink supply contamination and antiquated printers

Ink contamination is also an issue in dusty environments. Dust can contaminate ink during the replenishment of fluids. Many older CIJ printers require operators to add fluid to internal canisters or to load fluid bottles inside disorganized printer cabinets. These types of refill systems make ink increasingly susceptible to dust or other containments. When contaminants enter the printing system, code quality is affected and most often causes codes that are incomplete or missing altogether, which can create rework or scrap. To remedy this situation, recurring printer maintenance usually needs to be instituted.

Another pitfall with these antiquated systems is that with system refills, fluid spills are common, messy, and incur incremental maintenance expense for clean-up. Accidentally loading the wrong fluid can also lead to inferior quality codes, costly printer maintenance, and having to dispose of inaccurately coded products. Advanced CIJ printers now offer simplified sealed cartridge systems that help to reduce the risk of ink contamination, spillage, and incorrect fluid replenishment.

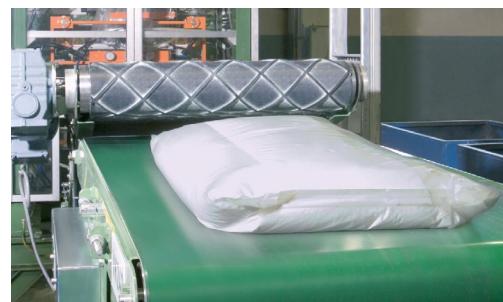
## Reliability, CIJ printer construction and design

To achieve reliable operation, the design and internal construction of a CIJ printer should be engineered to address the challenges of its operational environment. With chemical production, the cabinet ideally should have an IP65 rating to help ensure that the equipment is dust-tight and protected against water. Moreover, to hold up against corrosive chemicals, CIJ printers also should have stainless steel construction. While some CIJ printers use 304 stainless steel, 316 stainless steel is superior and ideal for harsh environments. This superiority is due to the addition of molybdenum, an element that has the ability to withstand corrosion from many acids including chloride, sulfuric, hydrochloric, hydrofluoric, and most organic compounds. For an inkjet printer to run optimally and reliably in a chemical production environment, both an IP65 rated design and 316 stainless steel construction are ideal.

## Videojet 1000 Line CIJ printers

Engineered to address the challenges of chemical production in dusty environments, Videojet 1000 Line printers provide consistent, high quality codes with minimal maintenance. Features of select models include:

- Tough 316 stainless steel construction and optional IP65 protection for reliable performance in harsh conditions
- No need for compressed air to keep the printhead clean, saving money and related maintenance costs
- Anti-clog CleanFlow® printhead design, reducing maintenance intervals, downtime and expense
- Easy-to-install SmartCartridges™ and dynamic filtration system that helps eliminate ink contamination



## The Bottom Line

For effective, reliable coding in harsh chemical production operations, it is important to have a printer that addresses your unique challenges such as temperature extremes and dust. Videojet 1000 Line CIJ printers are built tough and are uniquely engineered to provide clean, consistent codes, minimal maintenance and ease of use.

**To find out more about our proven CIJ solutions for chemical production, ask your Videojet representative for more information, a production line audit or for sample testing in our sample laboratory.**

Call **+971 4 550 8713**  
Email **MEA.Sales@videojet.com**  
or visit **<http://www.videojet.eu/me/en>**

Videojet Technologies Inc.  
3rd Floor, Al Zahrawi Building #34  
Dubai Healthcare City  
Oud Metha  
P.O.Box 71569  
Dubai  
United Arab Emirates

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