



Application note



Continuous Inkjet

Choosing the optimum ink for printing on shell eggs

The challenge:

Printing on eggs requires special inks to meet various retail and regulatory requirements. There are certain important ink characteristics that an egg producer should be concerned with, and understanding how well printer suppliers meet these characteristics is vital.



The Videojet advantage

Videojet develops and manufactures its ink in several Videojet facilities around the world. Egg inks are developed to meet government standards for food grade ink.

They are manufactured in ISO-9002 certified facilities that have instituted HACCP control systems and that follow Good Manufacturing Practices (GMP).



The key requirements for egg shell marking

Several important requirements will affect your choice of ink to produce properly-coded eggs that will comply with relevant regulations:

Regulatory compliance

Inks used for egg coding must comply with government regulations governing food marking inks.

These broadly state that inks printed on food items must be safe for human consumption, both when the food item is raw and when it is cooked. Egg coding must not weaken the egg shell or penetrate through the shell. Once dry, the ink should remain on the egg shell and not contaminate the egg during the cooking process.

Fast drying

Eggs move very rapidly through an egg grading system.

Since ink coding is applied on eggs as they are transported in the tracks, the ink does not have much time to dry. Complete drying is important because smeared egg codes may be unreadable. Inks dry quickly in less than 4 seconds, ensuring that printed information is legible when the carton is opened by the consumer.

No substitutions

Because regulations require that inks used for egg coding be food grade, printers must be replenished with identical food-grade fluids.

Coding eggs with non-food grade ink is a regulatory violation that can have serious consequences. In addition, adding non food-grade fluid to a designated food-grade printer will contaminate the printer, requiring a service call to completely clean out the entire printer and the replacement of expensive components. The result is the printer being offline for a significant amount of time, negatively impacting productivity.

Legibility

Codes on eggs must meet basic requirements for legibility.

The ink color should be bold enough to be easily visible (red is the most commonly-used color). The ink should not spread on the egg surface so that codes become unreadable. The ink should adhere to a damp egg when necessary, cutting through the moisture so that codes do not inadvertently rub off during packing.

Videojet inks exceed these requirements



Compliant inks

Videojet produces several colors of inks formulated specifically for printing on shell eggs.

These inks are designed to adhere well to the egg shell without altering the shell's composition or physically damaging the shell. The inks can even adhere to the shell even if the eggs are cooked in boiling water. Videojet inks are authorized by the US Department of Agriculture (USDA) and meet the requirements found in European Union Regulation 1333/2008 to identify shell eggs.

These inks are manufactured in a dedicated food-grade ink production facility that is ISO-9002 certified and is operated under Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Point (HACCP) processes. All raw materials are of food-grade quality and are stored separately in the dedicated facility, ensuring batch-to-batch consistency and no risk of contamination.

Legibility

Videojet inks are designed to be highly legible, 'low bleed' inks.

Our new faster drying ink is based on formula that produces smaller droplets with high color contrast, enabling placement of information in a limited space with higher resolution than competitive inks for higher readability.



Fast-dry ink

Faster dry time also produces a small dot on the egg, so more information can be printed in a limited space.

These new inks feature higher condensation resistance that allows excellent print quality even when condensation forms on the eggs. This is especially important as condensation, which can form shortly before printing, can alter the drying process and make the ink more susceptible to smearing.

The right ink, every time

Our Videojet 1000 Line continuous inkjet printers support a rapid-change ink cartridge that makes changing ink simpler than loading bread into a toaster. Each ink cartridge is coded so that the printer knows exactly what ink has been loaded. This prevents the printer from inadvertently using non-food grade fluids, saving downtime and maintenance cost by preventing ink contamination.



The bottom line

Implementing a reliable shell egg coding system requires proper planning to eliminate disruptions and to achieve optimal performance. Videojet has an extensive team of sales, application and service personnel to help you implement the best egg coding solution.

Our solutions team works closely with leading egg grader manufacturers to ensure proper integration. If necessary, we can even enhance our solution offering to meet unique needs for your operation. Combine this capability with our extensive ink development and manufacturing capabilities, and feel confident we can meet your needs.

Ask your local Videojet representative for assistance on how to specify and design an egg system that will perform reliably for years to come.

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