



Application Note



Cosmetics, Personal & Home Care

Optimizing code quality on plastic bottles and containers

The challenge

Colored plastic bottles, jars and containers help personal and home care products stand out on crowded consumer shelves and enhance your brands. However, codes on colored plastic often are difficult to read, may rub-off or may be challenging to correctly place on a package. Unclear, non-permanent or misplaced codes can diminish brand reputation.

The Videojet advantage

Videojet offers a wide range of solutions for achieving your desired code on colored plastic bottles, jars and containers.

- With over 640 application-unique fluids, Videojet manufactures more fluids and supplies than any other industrial coding and marking manufacturer and can help you determine which ink is best for your plastic package
- Videojet offers the widest selection of laser marking systems, providing a permanent code solution for virtually any application
- Videojet's advanced thermal transfer overprinting technology produces high-quality coding directly to pre-printed labels placed on bottles, jars or containers

Over 80% of personal & home care bottles, jars and

containers are made from HDPE or PET¹. These substrates pose coding challenges due to material surface, shape and color. Follow these three steps to ensure the optimal coding solutions for your colored plastic package.

1. Evaluate your code needs

An optimal code solution is specific to the product and package. Before you determine the best coding solution for your products, it is important to think about why you are coding and define your code goals. First, consider the following questions:

Should the code stand out?

While high contrast codes can make it easier for the customer to find a code, not all products require prominent coding for consumer attention. For example, expiration dates should be clearly visible to consumers, however standard batch / lot information used for recall or tracking may not require the same high contrast. High contrast codes, if not necessary for consumers, may also detract from brand image. Determine if your code content requires a high contrast code or if a less prominent code is more desirable for your product.

Will the code rub-off?

While permanent codes are usually optimal, plastic packaging includes slick plasticizers which support plastic flexibility but make coding adhesion difficult. Also, many personal and home care products contain ingredients that can easily remove ink codes. Fragrances, cleaning products and detergents which, if spilled, often smear or remove ink codes on plastic. Additionally, some personal and home care products are used in wet environments which can erode a code over time. However, a permanent code is important for many products to protect customers and the brand. For example, many home care chemicals can be harmful to consumers, therefore must be correctly marked. Evaluate your product characteristics to determine if a permanent code is important.

Where should the code be located?

Often overlooked, code placement can impact both contrast and permanence of a code. If possible, considering coding on a label instead of directly to the plastic can increase code contrast and permanence, especially on dark colored bottles. Often special print windows – areas on a bottle or label which have been pre-printed with a different color – can also increase code contrast.

¹ Euromonitor packaging database. Based on 2012 package type estimates.

2. Determine the optimal coding technology

There are a variety of different coding technologies which can code on plastic. Each provide different trade-offs to be evaluated against your coding needs.

Continuous Ink Jet (CIJ). CIJ is an extremely versatile ink-based coding technology which is ideal for curved surfaces and high-speed lines. Ink codes are generally durable, however, can be susceptible to inadvertent rub-off or wear over time. Code degradation is normally caused by plastic type, product spillage or product use environment. Most of these causes can be mitigated through ink formulation. Choosing the right ink is imperative to ensure your colored bottle, jar or container has a lasting code. Different inks are designed for adhesion, dry time, and durability. While black is generally the standard CIJ ink color, often it is not ideal for dark or metalized packages. A black or dark blue ink on a black or dark bottle may provide less contrast than a yellow, white or red ink. With over 640 application-unique fluids, Videojet offers a wide range of CIJ ink colors which can provide ideal adhesion and contrast on your plastic bottles, jars and containers.

Laser Marking. Lasers provide a permanent code either directly to the bottle or on the label by reacting to the plastic surface to create a code. While permanent, some codes produced by laser marking on certain types of bottles or on clear labels produce codes with little contrast. Lasers are ideal for household cleaning products which may require an extremely permanent code, bath and shower products which are used in wet environments, or branded goods which do not want the code to distract from the package design. Videojet is a leader in marking and coding laser options with CO₂, Fiber and UV laser technology, and has the broadest range of lens sizes, enabling more coding options with lower power.

Thermal Transfer Overprinting (TTO). TTO technology uses an electronic printhead to heat and press melted resins onto flexible packaging. While not suitable for coding directly onto plastic bottles, jars or containers, TTO can be an ideal option for printing on pre-printed labels or thermal sleeves, prior to application. TTO provides high code contrast and good adhesion on most label types and can print bar codes, logos, color numbers, ingredients, graphics and other data all in high resolution, meaning no degradation to your packaging design.

3. Do sample tests

Due to variability between plastics and colors, it is important to test your coding solution before starting production. These tests can help determine if the technology meets your coding needs in terms of contrast, permanence and placement.

Videojet offers a sample lab service and can provide you with various codes using different technologies on your packaging. The lab can suggest the optimal technology for all of your packaging and send samples to help you make an informed decision before you invest in a coding solution.



Black CIJ code on a colored bottle



White CIJ code on a deodorant container



Laser code in a knock-out box



Laser code direct to spray bottle

The bottom line

Plastic bottles, jars and containers are advantageous for conveying your brand position but can be difficult to code. Videojet can help you code on your plastic bottles, jars and containers. Our experienced sales team can help you determine your coding requirements, discuss the trade-offs of the different coding technologies, and provide you with code samples on your packaging to help you be confident in your coding decision. With a wide range of advanced coding technologies and over 640 application-unique fluids and supplies, Videojet has a coding solution for your plastic packaging.

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