



Application note



Confectionery

Coding solutions for increased packaging complexity in candy and confectionery



According to Nielsen, 64% of consumers polled noted that they had chocolate as a snack in the 30 days prior to the poll, the highest percentage among the various categories. Global sales for chocolate and confection total close to \$90B.* The growing demand for confectionery products creates new challenges for coding of various packaging types and materials.

The Challenge:

As packaging substrate types and formats grow, so does the challenge for effective coding on these materials. For candy and confectionery producers who print on the individual pieces as well as outer packaging, variations in line speed, product sizes and packaging types can become increasingly more complex to manage. For instance, the individual products being produced need to be coded at higher rates than the packages in which they are being placed.

Videojet Advantage:

Candy and confectionery companies look to Videojet to provide innovative printing solutions. Partnering with our customers, we thoughtfully evaluate and test each packaging substrate in our sample lab facilities before recommending an ideal coding solution for each package and brand. Our diverse product offering includes solutions for virtually every application and substrate, including:

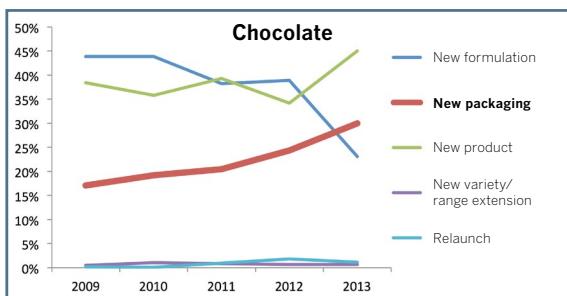
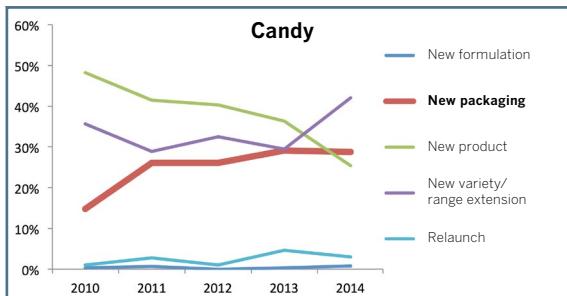
- Continuous Inkjet (CIJ) non-contact printing with specialized inks for varying packaging materials
- Laser marking systems for permanent codes on many different package types
- Thermal Transfer Overprinting (TTO) ribbon-based technology for flexible plastics and films

Consumer tastes and packaging trends



Trends in the confectionery market

Despite the popularity of confections like chocolate and candy, concerns related to unhealthy lifestyle choices, or foods that can attribute to obesity are being closely scrutinized in the marketplace. As a result, innovation has come in the form of more packaging type choices including smaller, less caloric serving-sized packages.



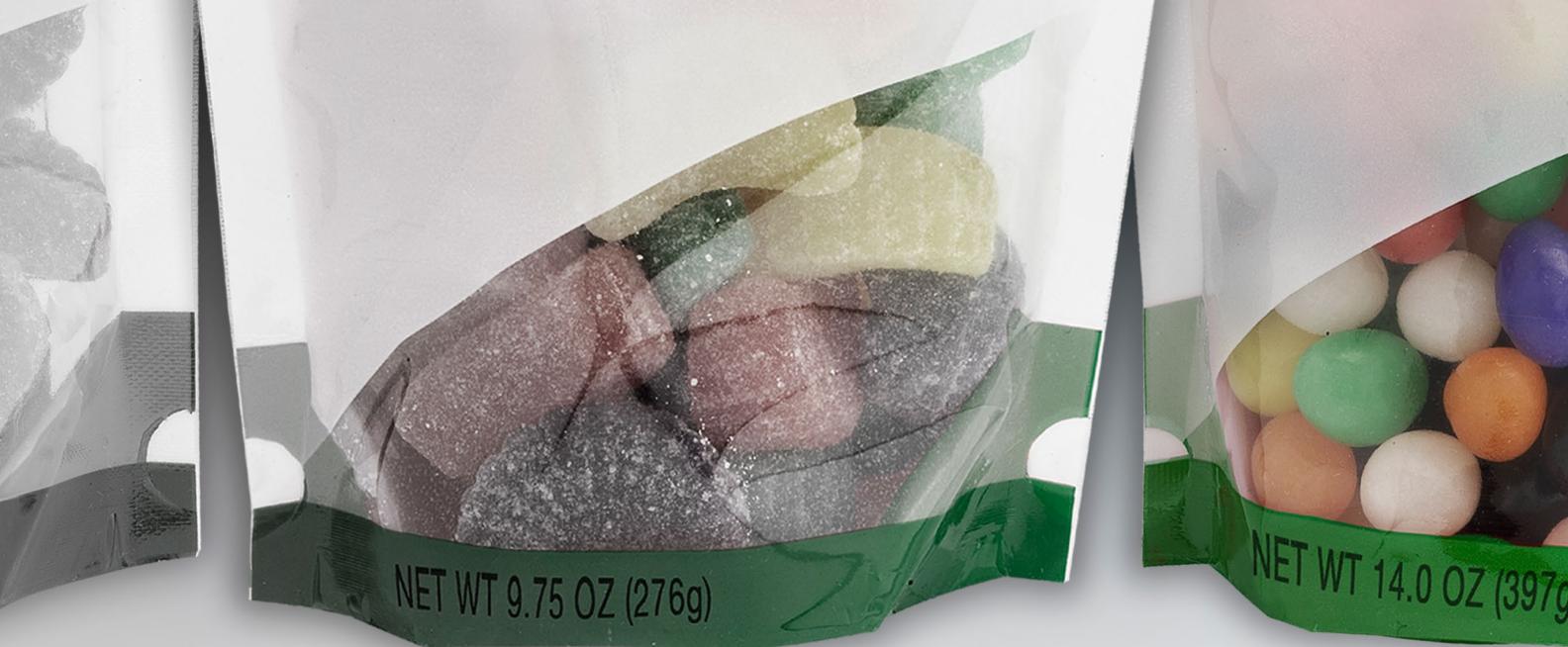
Candy and confectionery manufacturers message their products as a special treat or indulgence. This messaging helps consumers to validate their purchasing habits. To secure more purchases, confectioners are initiating more front-of-packaging messaging and they are also marketing larger size portions with the caveat of multiple smaller packets contained within each bag that offer lower calories per the smaller serving size.



Many retailers are also requiring that candy and confectionery manufacturers provide special packaging designs (particularly case carton packaging) that allow for shelf-ready display of specific sized products that fit neatly onto retail shelves.



Soft & Chewy Candy



Flexible and shelf-ready packaging

Flexible packaging is strongly preferred by candy and confectionery manufacturers due to its versatility. Most notably are the stand-up pouches, both with and without zippers. According to a Packaged Facts survey conducted in 2014, 44% of chocolate candy buyers purchase chocolate candy that is packaged in a stand-up pouch, an increase from 36% in 2013.¹ A critical feature of such packaging is that it creates a strong shelf presence and allows for more product image presentation than flat bags. Since it's been suggested that half of all consumers buy on impulse,² strong brand image presence becomes even more important for confectionery manufacturers.

Aside from the need for shelf-ready packaging, retailers are also asking for low-pack fin seal packaging. This packaging is particularly popular in channels such as convenience and drug stores for end-cap displays. This packaging configuration allows retailers to simply hang the products behind one another with the hole punched in the packaging.

In contrast, small snack-sized products contained within larger packs, such as family-size bags, are not intended for individual retail sale and are therefore not usually coded. This is changing, however. While there currently isn't legislation mandating that these individually packaged products have a production date, time or production line information coded on them, consumers and retailers alike are finding a need for this information. Therefore, some candy and confectionery manufacturers are trying to get ahead of legislation such as the *Consumer Product Safety Improvement Act* by voluntarily coding on the individually packaged products. These manufacturers simply want to provide consumers with the added peace of mind that each product coming from their plant can be traced to where it was produced. Select manufacturers are going as far as providing QR codes for consumers to go online and find out where the product originated.



¹ Packaged Facts survey: *Chocolate Candy in the U.S.*, July 2014

² Mintel Report: *Sugar, Confectionery and Breath Fresheners*, December 2014

Videojet coding solutions



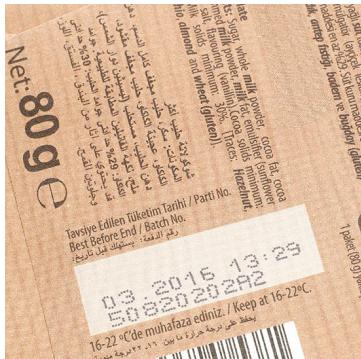
Continuous inkjet



Thermal transfer overprinting



Laser marking

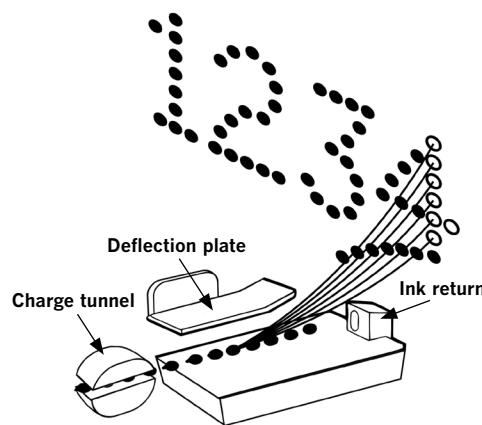


Whether cardboard or polypropylene, metalized nylon or PET packaging, Videojet coding solutions can keep up with today's candy and confectionery production line speeds. For applications requiring varying speeds, a high-speed CIJ printer can be used to print on the individually packaged products while a TTO or laser printer can be used on the outer bag (an optimal solution depends on the packaging material). Following is more information on these different technologies.

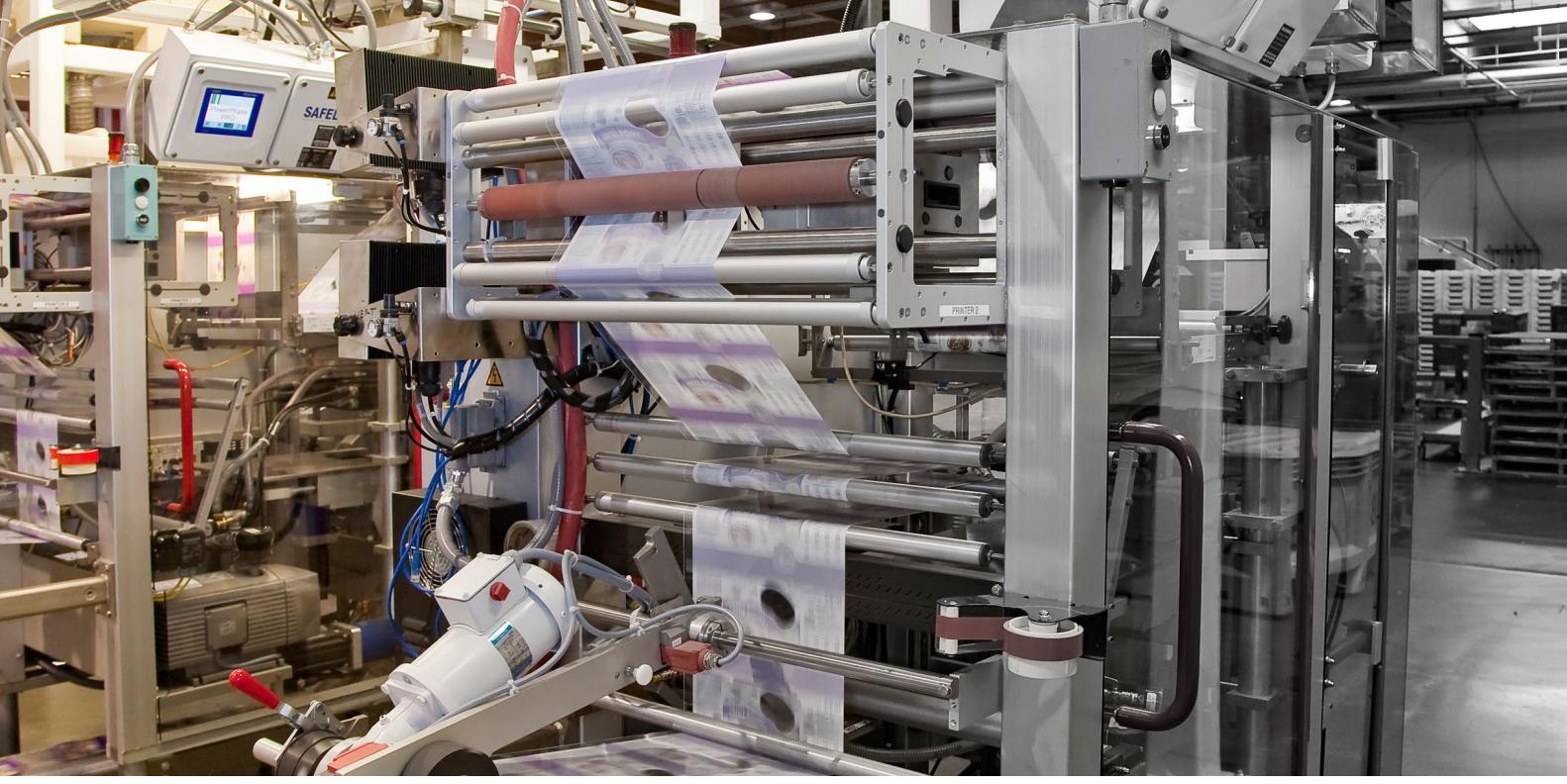
Continuous Inkjet (CIJ)

With CIJ, printed characters are made up of individual ink drops. The motion of the product or film provides one axis (length) of printed characters and the printhead provides the height axis by applying different charges on the ink drops and causing them to hit the film at different points.

CIJ printers produce simple lines of code and are ideal for flow wrapping applications. They are cost-effective for low-to-medium volume producers and are easily integrated into existing production equipment. CIJ inks are fast-drying and can accommodate high-speed confectionery lines. This coding technology is also non-contact and will not puncture packaging.



CIJ technology diagram

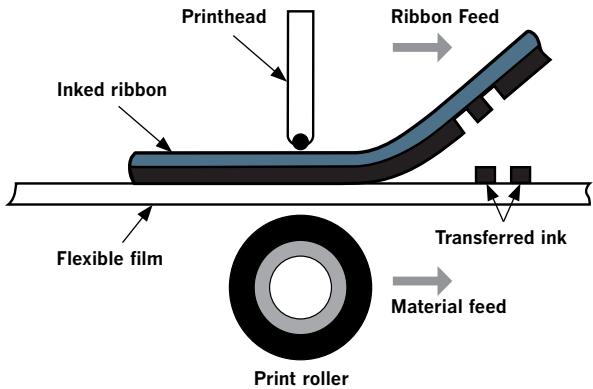


Thermal Transfer Overprint (TTO)

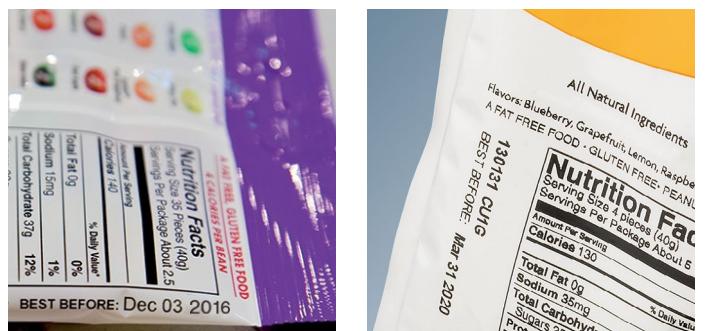
Unlike CIJ, TTO uses ribbon that once used, can be disposed of without special hazardous substance handling. Like CIJ, TTO will not puncture packaging. TTO has virtually instant dry time and thus is ideal for flow wrappers that don't provide much time before products come into contact with rails or other products. One of the main advantages of this technology is its ability to print high resolution information like logos, nutritional facts, batch numbers and best by dates. This high resolution capability helps enable confectionery companies to use generic film for different products and code the product-specific information during packing. This saves in changeover time and inventory holding costs.

TTO printers must be integrated directly with the packaging equipment. While the function may be the same, packaging equipment from different manufacturers is built differently and can require specialized brackets and other accessories. Therefore, it is important to find a company with the right experience, software, and accessories to complete the integration seamlessly.

Finally, TTO printers have shown to be extremely reliable and require minimal maintenance as compared to other coding technologies. Some TTO printers also maximize ribbon use, which leads to ribbon savings and reduces downtime required for ribbon replacement.



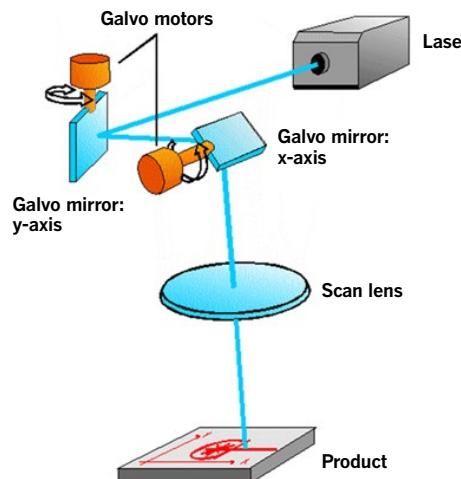
TTO technology diagram



Laser Marking

Laser marking is ideal for high volume operations. Instead of “printing” on products in the traditional sense, products are engraved with their respective coding data. Inherently ink and fluid-free, lasers don’t have the same concern of ink odor and its potential to affect uncovered product. However, unlike CIJ and TTO printers, lasers do require a fume extractor and filter (which are the only consumables for this coding technology) that immediately remove any particles generated in the laser marking process. With correct laser configuration, there is little risk of puncture to packaging. However, a good alternative to avoid this challenge altogether is to code on the flap of the wrapper and avoid exposure to the main layer of protection on the package.

Laser is a great choice for fast speeds and low maintenance. Videojet offers larger marking fields that can code two packages virtually at the same time and save you the unnecessary expense of purchasing two lasers to do the same amount of work. A large marking field also helps optimize power settings and avoid film burn-through. Videojet also offers options for enclosures, which are regulatory requirements in some countries when operating a laser.



CO₂ laser technology diagram



The Bottom Line

Consumers and retailers alike are encouraging manufacturers to make changes in candy and confectionery packaging. Packaging changes include more variations in size, types and materials. With these changes come new coding needs and challenges. Videojet offers CIJ, TTO and laser coding technologies to help producers address these varied needs.

Ask your Videojet representative for more guidance, a production line audit, or sample testing on your substrate.

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