

Proficient printing



Primera Technology Europe explores how to print EU Regulation 1169/2011 compliant labels

Food allergens can be life threatening and the only way people can manage a food allergy is to avoid the foods that make them ill.

In the UK, it is estimated that one to two per cent of adults and five to eight per cent of children have a food allergy. This equates to around two million people living in the UK with a food allergy; this figure does not include those with food intolerances [1]. Taking this into account, there are even more people living with a food allergy or food intolerance than the numbers suggest.

An allergic reaction can be produced by a tiny amount of a food ingredient that a person is sensitive to (for example, a teaspoon of milk powder, a fragment of peanut or just one or two sesame seeds). Symptoms of an allergic reaction can range from mild symptoms, such as itching around the mouth and rashes, to more severe symptoms, such as vomiting, diarrhoea, wheezing and, on

occasion, anaphylaxis shock. An allergic reaction can even cause death.

Therefore, the European Union installed a new consumer regulation that focuses on allergens in food. Since 13 December 2014, the EU Food Information for Consumers regulation (No. 1169/2011) (FIC) outlines the requirements for businesses that are providing food sold pre-packed and non pre-packed (loose), such as food sold in a restaurant or takeaway.

As of 13 December 2014, all food businesses need to provide information about the allergenic ingredients used in the food they sell or provide.

Declaration

There are 14 major allergens which need to be declared. They are:

- Cereals containing gluten, namely wheat (such as spelt and khorasan wheat), barley, rye and oats

- Crustaceans such as prawns, crabs, lobster and crayfish
- Eggs
- Fish
- Peanuts
- Soybeans
- Milk
- Nuts, namely almonds, hazelnuts, walnuts, pecan nuts, Brazil nuts, cashew, pistachio, Macadamia or Queensland nuts
- Celery
- Mustard
- Sesame
- Sulphur dioxide or sulphites (where added and is >10mg/kg in the finished product – often found in dried fruit and wine)
- Lupin
- Molluscs such as clams, scallops, squid, mussels, oysters and snails.

Compliance

In order to have food product labels that are compliant to the EU regulation, it's not enough to just list allergens that are included in your product; you also have to use a certain font size depending on the size of your label. In addition, those allergens must be highlighted in a certain way.

A product label is the first source of information for people with a food allergy and/or intolerance to help them decide if they can buy and eat that product without risking an allergic reaction. And, recent studies have shown that the readability of information is



a key factor to the consumer's purchasing decision.

Food producers have to face the challenge to design a product label, which both contains all of the information required by the authorities and is attractive to customers.

To capture all ingredients listed on a product label at a glance can be quite difficult, especially when the product itself is rather small – like chocolate bars, seasonings and mixed spices, jam and honey jars or promotional packs.

For the production of these labels, manufacturers need a printing process that guarantees razor sharp printouts, even with a very small font size on a small label.

In all of these cases, the printed quality and appearance of labels are extremely important. Providing a professional appearance on packages can easily make the difference between a product selling well or simply sitting on the retail shelf.

But finding a cost effective and convenient way to produce high quality, full colour labels has not been easy. Until now, the usual choices for professional label printing were flexo printing, offset printing (traditional or digital) and thermal transfer printing. These methods are normally only attractive for long runs due to the high set-up costs, or provide printouts with a very low resolution.

What are the alternatives?

The printing technologies mentioned above are not appropriate for labels with regularly changing contents or for manufacturers who have various products in smaller quantities. Colour inkjet and colour laser label printing are alternatives; both technologies provide high resolution, durable labels that are ideal for primary label applications.

Colour inkjet for short-run label printing

Inkjet technology has been in widespread use for many years in home, office and even professional photo and poster printing applications. But because it had not been used extensively in the label industry, many people assumed that it was not robust or waterproof enough to produce primary product labels.

With today's state of the art inkjet technology, the opposite is true. Label printers utilising the latest thermal inkjet technology produce full colour product labels at up to 4,800 dpi – about 240 times higher resolution than flexo – in up to 16.7 million colours.

For applications requiring longer term exposure to water, chemicals and other elements, the latest inkjet label printers offer the option to use either pigment or dye-based ink.

Dye-based inks are able to provide more



“To capture all ingredients listed on a product label at a glance can be quite difficult, especially when the product itself is rather small”

granular and therefore softer colours, which look more vivid and brilliant, but will reflow when in contact with water unless printed on special coated label material. The print is water resistant as long as the label does not rub against anything disturbing.

By contrast, pigmented inks tend to be lighter in colour than dye, but they are more UV resistant. Dye-based ink fades in daylight within months; pigmented ink withstands for years.

Colour laser for short to medium run label printing

Sheet fed colour laser printers are usually not the best choice for printing quantities of self adhesive labels due to a limited number of substrates and maintenance issues as a result of adhesive bleeding, paper jams, thickness limitations and more.

However, a new breed of colour laser label printers has emerged: those with straight paper paths. A straight paper path eliminates virtually all of the issues previously associated with the technology for printing onto self adhesive label materials.

Thicker and stiffer substrates, such as polyesters, can be fed without incident along with the usual plain papers in matte, semi gloss and gloss varieties. These new colour laser printers allow companies to produce labels that rival the cost and quality of virtually any other process, regardless of equipment cost.

Advantages

The advantages of colour inkjet and colour laser label printing over other label printing technologies include:

- **Lower cost per label means higher profits** – printing only the number of labels you need is always a better choice and will cost less. Why order thousands, or even tens of thousands, of labels from an outside vendor when you only need 500? You'll also save money by eliminating obsolete label inventory
- **Time savings** – because you print the labels when and where you need them, and only in the quantities you need, you'll save time and be able to get your product to market faster
- **Fast adaption** – since ingredients or legal requirements can change from one day to the next, manufacturers have to be able to adapt their product labels immediately without additional costs for new printing plates or cutting dies.

To summarise, the need for short to medium run, full colour label printing – especially for EU regulation compliant labels – is essential for food manufacturers of all types and sizes. While there are several available options on the market today, many are too expensive or are designed for far larger production than is needed in many cases.

Further, the print quality of even high volume, full colour labels on flexo or digital offset can be limited, thereby limiting the sales potential of the labelled products.

Two digital technologies stand out for producing high quality, low cost output in short to medium sized runs: inkjet and laser-based colour label printing. ■

REFERENCE

[1] www.food.gov.uk/sites/default/files/food-allergen-labelling-technical-guidance.pdf.