

Coding inks and ribbons for food packaging

Making it easy for you to retain your food safety certifications

Food production has come a long way from its unregulated early days, with an ever-growing requirement to keep consumers safe. Regulations constantly evolve and new ones appear that must be complied to, ensuring food is safe for consumption and that the food manufacturer is certified to the required local and international standards.

With coding and marking a mandatory part of the packaging of food, Domino is leading the industry by ensuring that its coding inks and ribbons are not only suitable for the intended application but are produced in a way that clearly satisfies the requirements of food contact packaging laws and our customers' exacting standards.

Domino recognises the challenges of operating in an increasingly complex global food supply chain, including stricter regulations and emerging food safety risks. In response to these challenges, many of our customers in the food industry have committed to the Global Food Safety Initiative (GFSI) benchmark standards to implement adequate food safety management systems and best practices, at every step of the value chain.

At Domino, we are committed to playing our part in supporting our customer's certification against food safety standards such as ISO 22000 and GFSI recognised schemes such as:

- ◆ BRC Global Standard for Food Safety
- ◆ BRC-IOP Global Standard for Packaging and Packaging Materials
- ◆ BRC Global Standard for Storage and Distribution
- ◆ CanadaGAP (Canadian Horticultural Council On-Farm Food Safety Program)
- ◆ Global Aquaculture Alliance Seafood - BAP Seafood Processing Standard
- ◆ FSSC 22000 Food Products
- ◆ GLOBALG.A.P. Integrated Farm Assurance Scheme, Product Safety Standard and Harmonized Produce Safety Standard
- ◆ Global Red Meat Standard (GRMS)
- ◆ IFS Food
- ◆ IFS Logistics
- ◆ IFS PACsecure
- ◆ PrimusGFS Standard
- ◆ Safe Quality Food Code

What do the regulations say about coding inks?

The coding of packaged foods although essential, is a very small component of the manufacturing process. Therefore, regulations do not tend to specifically pick out the coding inks, but rather include them in the inks that are used in the packaging materials. This is true for most packaging, but what happens when the ink is in contact with the food? The ink that is being used to code the outside of a bag of confectionery isn't the same and shouldn't be used to code onto eggshells or even on the inside surface of confectionery packs for promotional coding.

For those applications where the code is applied to the outside of the pack, known as non-Direct Food Contact (nDFC), the regulations in Europe, the US and in China require:

EU – In order to comply with EC 1935/2004 legislation, packaging inks for food contact materials must be made to Good Manufacturing Practice (GMP). Packaging materials shall be manufactured in compliance with good manufacturing practice so that, they do not transfer their constituents to food which could endanger health, or bring about an unacceptable change in the composition of the food, or bring about a deterioration in the organoleptic characteristics. With specific legislation in Commission Regulation (EC) No 2023/2006.

USA – In order for food manufacturers to comply with GMP requirements in 21 CFR Part 110.80 “Appropriate quality control operations shall be employed to ensure that food is suitable for human consumption and that food-packaging materials are safe and suitable.”. It is important that no material harmful to health can migrate through the packaging into the food. In order to ensure this is the case packaging inks must be made to GMP to show the traceability of each ink batch.

China – In order to comply with GB 4806.1-2016 – General Safety Requirements for Food Contact Materials and Articles, packaging inks must be made to GMP and GB 31603 – 2015 - GMP of food contact materials.

When coding onto eggshells or the inside of food packaging, known as Direct Food Contact (DFC) applications, the regulations continue to require that the printing inks need to be made to GMP, and also includes a permitted list of safe materials allowed for DFC applications.

Many food manufacturers may also refer to the ‘Swiss List’, a list of positively allowed food packaging ink components. While this is part of Swiss national law, many manufacturers may refer to it to support their due diligence approach. Domino has a range of inks that meet this highest standard too.

It can be seen from the above that the terms “must be made to GMP” is continually mentioned, but what is the relevant GMP and how do you as a food manufacturer know that the ink has been made to an appropriate GMP.



Good Manufacturing Practices (GMP)

The term GMP is widely used but often has no specific requirements set out. Quality control of raw materials, traceability of materials and other manufacturing processes are usually included. But as a customer how do you know that the material you purchase from one supplier is made to the same standard as that purchased from another: ‘Good’ can be a relative word.

In response to this, Domino took the proactive decision to join the European Printing Inks Association (EuPIA) in 2008, and is still the only supplier of coding and marking equipment to be a member. EuPIA has for many years put special emphasis on Food Packaging and Consumer Safety, developing strategies and concepts that have defined how ink manufacturers can contribute to the food packaging supply chain and so enhance consumer safety. As part of this EuPIA has developed the Good Manufacturing Practice (GMP): Printing Inks for Food Contact Materials which was first published in 2008, and updated in 2016.

The EuPIA GMP assists in controlling food safety hazards in the design and manufacture of inks, varnishes and coatings designed to be printed onto Food Contact Materials (FCM),

and formulated for use on either the non-food contact or the food contact surfaces of food packaging and articles intended to come into contact with food. Ink products developed and manufactured in compliance with the EuPIA GMP support food manufacturers in supplying food and drink products compliant to the legislation in Europe for materials and articles intended to come into contact with food such as the Framework Regulation (EC) No 1935/2004, and GMP Regulation (EC) No 2023/2006



The EuPIA GMP was to initially support compliance with EU laws, however it was also written with reference to ISO9000 and ISO22000 standards, providing a robust approach to setting GMP standards.

To demonstrate to our customers that Domino is committed to the principles of protecting food consumer safety within the areas under our control, we have signed the EuPIA Compliance Commitment related to the manufacture and supply of food packaging inks.

This means Domino is committed to:

- ◆ the principle of placing consumer safety first
- ◆ compliance with relevant legislation currently in force and the resultant legal requirements in order to ensure a high level of consumer safety
- ◆ the principles of transparency and information sharing to enable compliance within the packaging supply chain, whilst preserving appropriate commercial confidentiality and respecting competition law rules
- ◆ the supply of products fit for the intended purpose as mutually defined between each company and its customers
- ◆ the concept of risk and exposure assessment in accordance with internationally recognized scientific principles
- ◆ the principles and implementation of Good Manufacturing Practices, including audit processes;

- ◆ the principle of continuous improvement in consumer safety following any new scientific findings
- ◆ following EuPIA crisis management procedures, or equivalents, to resolve any incidences related to a food packaging ink.

How does a European Association’s GMP help in a global industry?

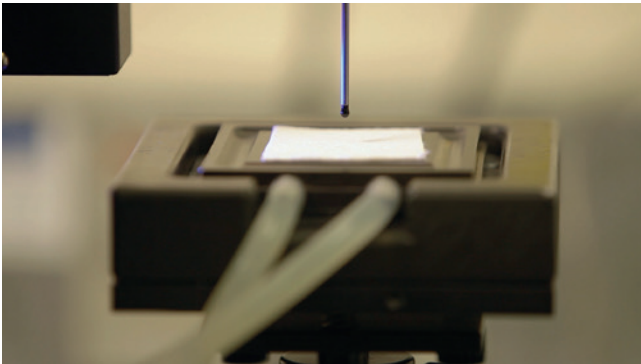
Across all food safety regulations there is one underlying constant, the need for food contact materials to be made to an appropriate GMP. Although regulations often detail which components cannot be used such as in the “Swiss List”, the actual GMP to be used is left to the manufacturer. Therefore the GMP is likely to vary between manufacturers and may only be a company’s own internal GMP standard. The challenge with this is how can you be sure that the inks you purchase are to the same standard from all suppliers? By purchasing from Domino, who follow an independent documented GMP, this problem is removed.

Globally the EuPIA GMP is the only independent document relating to Printing Inks for Food Contact Materials, so gives food manufacturers the confidence that the inks purchased are traceable to consistent manufacturing processes, and that the components will not vary. This will ensure manufacturers continue to be compliant to local legislation.



How can you ensure that the ink you buy is correct for your packaging and food type?

An ink designed and manufactured to EuPIA GMP standards does not mean that it is the correct ink for all applications. . For this reason, the EuPIA GMP also requires the application of inks to be carefully controlled and specific requirements are required for direct food contact (DFC) or non-direct (nDFC) applications.



To comply with this aspect of EuPIA GMP Domino has undertaken a programme of training and certifying all sales, support and development staff to be able to identify food applications and recommend the appropriate ink depending upon the application's food contact categorisation. This is a global programme within Domino which will give you confidence that your local representative understands the coding application and recommends safe, compliant solutions.

The requirement in the EuPIA GMP states:

“Sales and customer technical support employees consulting customers on FCM printing inks shall be trained at least on legal background, EuPIA Statement of Composition and intended uses of DFC and non-DFC inks.”

With the certification of all relevant Domino staff, you can be assured that when a Domino representative arrives at your facility they can help you solve your coding requirement, with not only an ink or ribbon that gives you the physical performance you require, but that the ink recommended is safe for the application and your customers.

Supporting you to achieve your own food manufacturing GMP and local and international food safety standards

With Domino's active EuPIA GMP program you can be confident that the inks and ribbons you purchase for coding and marking will support your status within local or international food safety certification schemes, including those approved by GFSI. For example:

- ◆ Food businesses holding GFSI-accredited scheme certificates need to be confident of ingredient and component traceability.
 - Compliance with the EuPIA GMP means that Domino can demonstrate good traceability from the raw components to the finished products, including all critical controls during manufacture. In addition to EuPIA GMP requirements, Domino applies a Hazard analysis and critical control points (HACCP) approach to its ink manufacture.
- ◆ Food and Drink manufacturers holding these scheme certificates must carry out threat and vulnerability assessments.
 - Domino is almost unique amongst packaging suppliers in that it designs and manufactures inks and printing equipment. This means an extremely short supply-chain into the food manufacturer, greatly reducing the opportunities for threats & vulnerabilities, making Domino a very low risk in your threats & vulnerabilities assessment.
- ◆ Food & Drink manufacturers must risk-assess all their suppliers.
 - As a supplier to food and drink manufacturers, Domino's membership and application of EuPIA policies and EuPIA GMP allow manufacturers to rate us as low risk. This low risk status makes Domino an 'easy partner to manage'. We provide Technical Data Sheets (TDS) with each ink which outlines the application they are intended to be used for, as well as being able to supply

statements of Composition for customers to complete risk assessments.

- Domino has its own in-house team of highly qualified and experienced formulation chemists, a wide array of analytical techniques and equipment, and a group of regulatory experts who constantly monitor changes to laws and regulations, means that Domino can achieve two key things required by food & drink manufacturers who hold GFSI standards (eg BRC Food 7):

- The confidence that the chemistry and safety of ink components are understood and properly managed (eg registration and labelling)
- Support in selecting appropriate ink (chemistry) to suit the food contact packaging and food type



So why choose Domino?

Domino's commitment to food safety is part of our values and vision. As new regulations come into force, and current ones are improved, Domino is committed to meeting these requirements, so that you can continue to make products to the latest and highest standards without worrying about your coding and marking ink.

The food industry is heavily regulated for good reason, but regulation adds extra work, complexity and pressure for manufacturers. Domino does not just want to supply customer's product, rather we want to be a partner to help food manufacturers maximise their potential, without the need to spend large quantities of time and money certifying a small but essential part of their production process.

By choosing Domino as your coding and marking supplier you are reducing the risk of product contamination by your coding and marking materials, giving you time to concentrate on ensuring that the other larger parts of your business are safe, that your company's aspirations are met, and your customers are loyal to your brand.