Fluorinated substances in paper and board food contact materials (FCM)

Fact sheet, July 2016

Fluorinated substances
Fluorinated compounds constitute a large group of chemical substances that are persistent and bioaccumulate. Several of them are suspected to be carcinogenic, immunotoxic and endocrine disruptors. They can be used to treat the surface of food contact materials (FCM) of paper and board (e.g. cookie sheets, food paper and fast food packaging). Only a few of them are assessed by the European Food Safety Authority (EFSA). There are no specific regulation for these substances in paper and board.

Recommended limit for the content of organic fluorine in paper and board
The Danish Veterinary and Food Administration discourages the use of fluorinated substances in paper and board and has set a recommended limit for the total content of organic fluorine in paper and board FCM. Since the limit is set for the total content of organic fluorine it includes all organic chemical substances with a content of fluorine. The limit is:

0.35 µg fluorine / dm² paper (0.35 microgram fluorine per square decimeter paper)

The recommended limit is so low that fluorinated substances are not intentionally used as treatment of the paper, if the threshold is met. This can also be the case if the threshold is not met and in these instances the Danish Veterinary and Food Administration will pay attention to the company’s management and documentation at the inspection. The Danish Veterinary and Food Administration will adjust the recommended limit when further tests of the analysis methods and studies of the background level are completed.

Control of fluorinated substances in FCM and food businesses
In Denmark, all types of FCM, including paper and board, must be accompanied by a declaration of compliance (at the marketing stages other than the retailer stage). This declaration must document that the product is in compliance with the requirements for FCM in regulation 1935/2004. This includes the requirement that no FCM must release taste, odor or substances in harmful amounts to food (article 3).

Companies can make sure that the requirement of regulation 1935/2004 is met for the fluorinated substances by documenting the absence of these substances or by documenting that a possible content of fluorinated substances do not migrate to food in amounts that can endanger human health.

The recommended limit is not in itself legally binding. However, if a FCM company indicates that it complies with the limit, it is considered as a claim that must be documented and controlled.
If the use of fluorinated substances in the production of your paper or board is not mentioned in the declaration of compliance, you can require documentation from your supplier concerning possible content or absence of these substances in the products.

**Control of fluorinated substances in retail businesses**

It is not a legal requirement that paper and board FCM must be accompanied by a declaration of compliance at the retail stage. However, the company can require documentation from the supplier of paper and board concerning possible content or absence of fluorinated substances in the products.

Please notice that there are requirements for labeling as well as any instructions for use at the retail stage.

**Analytical control of fluorinated substances**

If a company wants to test the content of total organic fluorine in paper and board FCM, there is a described method available. The determination of total organic fluorine, which includes all fluorinated compounds in the material, can be carried out with a method developed from the European standard DIN EN ISO 10304-1 (D20). In the analysis the paper is burned. This process converts the organic fluorine to hydrogen fluoride, which is collected in a liquid and analyzed for fluoride with an analysis method that uses ion chromatography. It is important that companies applying this method of analysis ensure that inorganic fluorine is subtracted from the result, since inorganic fluorine can cause an error in the analysis method for total organic fluorine.