

Food Safety: safe use of adhesives for food packaging

ECMA Recommendation

Committed to spread best practice in carton manufacturing, ECMA recommends with general reference to Chapter 4 “Recommendations for GMP compliance” of the sector GMP, the hereafter included approach regarding adhesives.

<http://www.ecma.org/industry-topics/food-safety/-gmp/>

Require compliance with the FEICA Guidance for a food contact status declaration for adhesives. (September 2014)

<https://wall.feica.eu/Content/Uploads/113B96C9-CC15-468B-BDFA-BC87B786C3DF/PostFiles/48a79126-5d8b-483e-b3a7-d5022b641f41.pdf>

In confirming compliance the adhesive supplier adheres to certain rules, regarding the selection and evaluation of the used raw materials and the composition of the adhesive in view of a given application. FEICA Guidance compliant adhesives respect the substance rejection list. The adhesive manufacturer has to check for all used raw materials if they are covered in applicable food contact legislation, and if not has to perform an extended risk assessment for the migratable substances (molecular weight < 1000 Dalton).

Clear flow charts on the pages 12 and 14 of the Guidance document explain well, the requirements for the adhesive producers and the evaluation of adhesives by downstream users.

Require adequate information

Although there is currently not yet a legal EU harmonised obligation to issue a declaration of compliance, the adhesive supplier is - in the context of the Union Guidance on Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food as regards information in the supply chain - obliged to communicate “adequate information” allowing the downstream user to perform further compliance work.

https://ec.europa.eu/food/sites/food/files/safety/docs/cs_fcm_plastic-guidance_201110_reg_en.pdf

Converters are in the position covered in paragraph 6f of section 4.3.2 “Recommendations for adequate information for non-plastic intermediate materials.” “In case that further steps of the compliance work need to be performed by the downstream operator, the identity of the substance (chemical name and CAS number), together with relevant information has to be provided.”

Chapter 4 of the FEICA Guidance includes a template for food contact declarations. This declaration should contain an overview of the present substances with restrictions, information on the dual use substances and on the relevant non authorised substances (e.g. NIAS, reaction by products) which may appear. To perform cost efficient safety assessments it is also critical to agree on the confidential exchange of information regarding the concentrations of the restricted substances.

Obtaining the concentrations and the restrictions (SMLs and other limits) allows the carton maker to perform a simple worst case calculation (100 % migration) for the used adhesive and to add this up with the migration which may come from the non adhesive sources.

Obtaining from the supplier also the maximum quantity of the adhesive in grams that can be applied on packaging around 1 kg of food in order to remain compliant with all restrictions in worst case conditions, allows a first rough practical safety screening in the adhesive selection process.

Address specific areas of concern

Mineral oils are present in certain adhesives. Carton makers are recommended to ask after the measures taken regarding mineral oils.

In case mineral oils are used, how has the adhesive supplier specified the mineral oils? Absence of the



polycyclic aromatic hydrocarbons? Has the adhesive supplier been replacing the not assessed substances by FCM's on the Union List ? (FCM 94/95 only restricted by the overall migration limit of 60 mg/kg food and FCM 93 with an SML of 0,05 mg/kg food)

FEICA issued a specific Guidance related to the food contact status of adhesives and mineral oil hydrocarbons (2017)

https://www.feica.eu/application/files/6915/4142/8246/feica_guidance_fc_status_adhesives_mineral_oil.pdf

BPA and phthalates, classified as endocrine disrupting chemicals are of particular concern.

Carton makers are recommended to discuss the measures taken in relation to BPA and the phthalates (DiBP, DBP, BBP, DEHP ...).

How is compliance ensured with the existing SMLs? In case certain substances are absent from the formulations, how has the adhesive supplier ensured the safety of any used alternative substances?

France adopted for those substances the strictest limits.

While the SML for BPA at the European level is currently at 0,05 mg/kg of food, France adopted in 2015 a ban on BPA in food packaging.

Hereafter an overview of SMLs applicable for food packaging made of paper and board:

SML mg/kg in food or food simulant	Council of Europe	BfR Germany CEPI CITPA Food Contact Guidelines	DGCCRF France
Phthalates			
DBP + DiBP	0,3	0,3	0,012
DBP		0,3	
DiBP		0,3	
DEHP	1,5	1,5	0,3
BBP	30		3
DINP + DIDP			0,9

The single compliance with the FEICA rejection list, stipulating phthalates should not exceed concentrations above 0,1% is in this context not a guarantee for food safety. This approach is coming from the REACH regulation oriented on the environment and worker protection. Material safety data sheets (MSDS) are never sufficient for food safety.

Food safety a shared responsibility in the supply chain

The safe use of substrates, inks and adhesives is a shared responsibility of all involved actors, requiring adequate information sharing, up and down the supply chain. As specified in section 4.4.5 of the ECMA GMP, the suitability of the used raw materials needs to be discussed with the customer in relation to a number of parameters, such as the total packaging concept and the conditions of use. Also the final sealing of the cartons at the filling stage should in this context be taken in account.