

CHAPTER 6

BISPHENOLS, PHTHALATES AND SUBSTANCES RELEASED FROM PACKAGING



CONTACT BETWEEN MATERIALS AND FOOD

Food can acquire chemical substances after harvesting, during processing, packaging, storage and domestic use. Materials and articles intended to come into contact with food, commonly called food-contact materials (FCMs), include plastics, coatings, adhesives, paper, cardboard, metals and equipment components.

Migration does not depend solely on the nominal material: its actual composition, temperature, contact duration, surface area, type of food and compliance with conditions of use all matter. Compatibility with fatty foods and high temperatures, for example, requires specific testing.

BISPHENOL A AND OTHER BISPHENOLS

Bisphenol A (BPA) has been used in the manufacture of certain polycarbonates and resins, including those used in coatings. In its 2023 reassessment, EFSA raised health concerns about dietary exposure to BPA, contributing to subsequent changes in European legislation.

Regulation (EU) 2024/3190 introduces a ban and relevant restrictions on BPA and certain other bisphenols in food-contact materials, with exceptions and transitional provisions. Manufacturing dates and conditions for placing products on the market can affect the legal assessment; it would be incorrect to describe the change as the instantaneous disappearance of all existing articles.

PHTHALATES AND PLASTICISERS

Some phthalates have been used as plasticisers, particularly in certain flexible materials. Not all phthalates share the same toxicological characteristics. Assessments must concern individual substances and, where appropriate, combined effects recognised in group assessments.

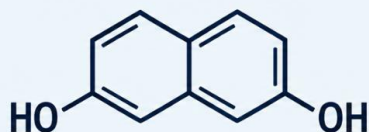
The possibility of migration does not mean that all packaging contains phthalates or that every plastic package releases significant amounts. In many cases, the main risk factors are non-compliant formulations, improper use, or temperatures and contact times exceeding those specified by the manufacturer.

NON-INTENTIONALLY ADDED SUBSTANCES

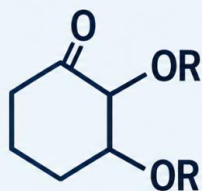
In addition to intentionally used substances, materials and processes may generate reaction or degradation products and impurities. These are often termed non-intentionally added substances (NIAS). Identifying them and assessing their migration is analytically complex.

Investigations into food-contact materials may include overall and specific migration tests, tests using food simulants, and targeted or non-targeted analyses. Examining a real sample can be useful but does not automatically replace an assessment of the material's compliance for all intended uses.

Main sources and possible substances



Bisphenol A (BPA)
and other bisphenols



Phthalates
(plasticisers)



NIAS
(non-intentionally
added substances)

RULES AND INFORMED CHOICES

Regulation (EC) No 1935/2004 sets general principles for food-contact materials; Regulation (EU) No 10/2011 governs plastic materials and articles within its scope. Rules concerning bisphenols have evolved further through Regulation (EU) 2024/3190.

Consumers should follow instructions for use, avoid heating food in containers not designated as suitable and replace damaged articles when necessary. The food-contact symbol is not a certification that every migrating molecule is absent: it indicates intended use within the applicable rules.

SCIENTIFIC AND REGULATORY REFERENCES

- Regulation (EC) No 1935/2004, food-contact materials [↗ Source](#)
- Regulation (EU) No 10/2011, plastic materials and articles [↗ Source](#)
- Regulation (EU) 2024/3190, bisphenols in food-contact materials [↗ Source](#)
- EFSA, Bisphenol A [↗ Source](#)