Cosmetic Packaging
Safety Evaluation
Cosmetic

The packaging of a cosmetic product is not only a simple container to put the product. It is an important communication tool to drive consumer purchases, transmits the brand identity and becomes an essential element to assess product safety.

Mérieux NutriSciences offers an innovative service to meet the needs of both packaging producers and professionals responsible in charge of cosmetic products, ensuring the safety and suitability of the packaging to the end-users and consumers.

- **General and migration tests** are pivotal to make sure packaging complies with cosmetic regulations, thus assuring a sufficient degree of inertness even with aggressive products.

- **Stability tests** are based on international guidelines and verify that the product does not undergo unacceptable changes during its life-cycle.

- **Risk Assessment.** The packaging of cosmetic products must not release dangerous substances, which could jeopardize the safety of consumers. The study of the case-by-case interaction is of utmost importance as is the highlighting of the elements to estimate the toxicological risk:
  - **Screening test.** A valid support, especially when the exact composition of packaging materials is unknown or suspected presence of NIAS (Non-Intentional Added Substances), also resulting from cosmetic-packaging interaction or the increasing use of recycled plastics.
  - **Specific migration test** for particular suspicious and dangerous substances such as metals, bisphenols, phthalates or additives. Specific migration tests can also be performed with alternatives to food simulants but representative of specific cosmetic matrices.
  - **Determination of mineral oils** (MOSH and MOAH) that could contaminate the cosmetic product.
  - **Set-off studies** to evaluate the migration by diffusion in components of prints and labels.

To protect consumers, Regulation (EU) no.1223/2009 on cosmetic products approached the problems related to the safety of packaging: the person in charge of the assessment of such products must consider all the ingredients, including the characteristics of the material and their possible interactions with the product.
Packaging

Product stability and PAO

Stability studies are based on international guidelines and verify that the product does not undergo unacceptable changes during its life-cycle:

- **Organoleptic and sensory properties.** Appearance, colour, odour and flavour, as applicable.
- **Physical-chemical properties.** pH value, viscosity, density and, if necessary, ingredient formulation.
- **Microbiological properties.** Microbial count and preservation challenge test.
- **Monitoring of active substances.** UV filters, antioxidants, antimicrobial agents.
- **Screening of aromatic substances.** Qualitative and quantitative fragrance alteration.
- **Period After Opening (PAO).** Simulation of useful lifespan.
- **Thermal shock.** Protocols that provide alternate cycles at different temperatures.
- **Light stability (Xenon test) of finished products.**
- **Photostability** of chemical UV filters.

Mérieux NutriSciences cooperates with trade association

*Mérieux NutriSciences was involved in the drafting of the first Italian guidelines for the Cosmetic Packaging (Cosmetic Contact) for the definition of the packaging characteristics as part of the safety evaluation of the cosmetic product, published by the Italian Institute of Packaging.*

In 2016, the Italian Packaging Institute (I.I.I.) started a permanent working group that led to the drafting of the first Italian guidelines for cosmetic packaging* and the experts of Mérieux NutriSciences were part of this project since the beginning.

In 2017, the Cosmetic Packaging Commission of the I.I.I. reunited the working group to define a method for testing packaging in direct contact with cosmetics. The purpose of this work is to assess packaging chemical inertia, in order to meet the legislative requests in the field of packaging raised by Regulation (EC) no. 1223/2009 on cosmetic products, considering the wide experience gained in the field of food contact materials.

*“Guidelines for the definition of the packaging characteristics as part of the cosmetic product safety assessment: operational suggestions for the Regulation 1223/2009 requirements on packaging” and “Guidelines for the safety assessment of the cosmetic product by analytical approach on primary plastic packaging”*