

Building a Better Molecule

Price, performance, regulatory compliance and olfactive novelty—what does it take for a new fragrance ingredient to be added to the perfumer’s palette?

Pierre-Yves Cariou, senior research perfumer, IFF, says, “With Franc Schiet, Senior Perfumer VP, we receive all the new molecules synthesized by our research team of chemists in Union Beach [New Jersey] so we can assess their potential for future use in fragrance.”

The perfumers in charge of this research come from the creation side of perfumery. Cariou, for example, spent 20 years in fragrance creation in categories like beauty care and fine fragrance before taking a research role.

“The idea is to bring somebody with experience on projects and formulation in order to quickly put our ingredients into realistic situations,” he explains. “We [do this] to review price, regulatory and performance, which are the key factors that our customers and consumers are looking for. We really improved the connection between research and creation to have the molecules that are the correct answers.”

The Search

Cariou and Schiet collect parameters for the ingredients and measures them against the needs of the creative teams, customers and, ultimately, consumers. Only when they identify a fit will the molecule then be commercialized by the company

Cariou explains, “Along the process we select ingredients and look at them in detail, using them in different accords, trying to see if they have some clear differentiation compared with what we already have in our perfumer catalogue. We then engage other key perfumers representing various categories to narrow down the selection.”

These perfumers then assess the molecules, pared down from an original batch of about 1,000, for use in personal wash, fabric care, beauty care, hair care, home care, etc.

Cariou says, “As a team, we review all the information we’ve collected and the first experience we had with the ingredients to make a final decision on whether we go or don’t go with [each] ingredient for commercialization.”

Along the way, Cariou, Schiet and their colleagues keep a close eye on any regulatory red flags.

“Throughout the process, our regulatory department evaluates the material against a variety of regulatory constraints,” says Cariou. “In some cases we have decided to stop work on specific molecules because of the regulatory hurdles.”

This process, he notes, can take three to five years to complete, from the first lab trial to an ingredient’s introduction onto the perfumers’ palette.

What Makes a Great New Molecule?

“We try to see what value we can get from a molecule, [so] we consider many aspects,” Cariou explains. “The added value of the new ingredient is the fact that we can cover a specific olfactive territory at a specific price point.”



Cariou adds, “Another aspect of importance is the performance of molecules, how they can give something new to a specific olfactive family—more substantivity, impact or adaptability to specific applications. Because our clients are developing more and more new bases we need to design molecules in specific olfactive areas where we can use [them] without any stability issues.”

Another point, he says, is price.

“We need to [develop] some very good products in our palette for specific territories where we need to have a better price in order to be able to work on all the different projects we have across regions, adapting to the different price points and constraints of each region” explains Cariou.

Last, but not least, Cariou is focused on hedonics: “We are looking for significant differentiation in terms of odor, something new that has not been smelled in the past.”

The Value of IP

“We are looking at developing new molecules that have never been identified,” Cariou continues. “So the intellectual property is something that is very important for us in order to keep these products captive in the future and to have the competitive advantage for the next 10, 15 or 20 years.”

For example, he says, “Amber Xtreme^a was an ingredient which significantly modified the woody approach for fine fragrance. It’s also very useful in other categories. We developed that high-impact and extremely substantive ingredient.”

Another molecule, developed more recently, is Veridian,^b which is a green, violet ingredient.

“It’s very interesting in all [fragrance] categories,” says Cariou. “These are examples of the ingredients that resulted from our process. We currently have a lot of molecules in our pipeline waiting to be launched in the next few years. Last year we launched several molecules ... and this year we plan to launch at least as many.”

^aAmber Xtreme is a trademark of IFF

^bVeridian is a trademark of IFF

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