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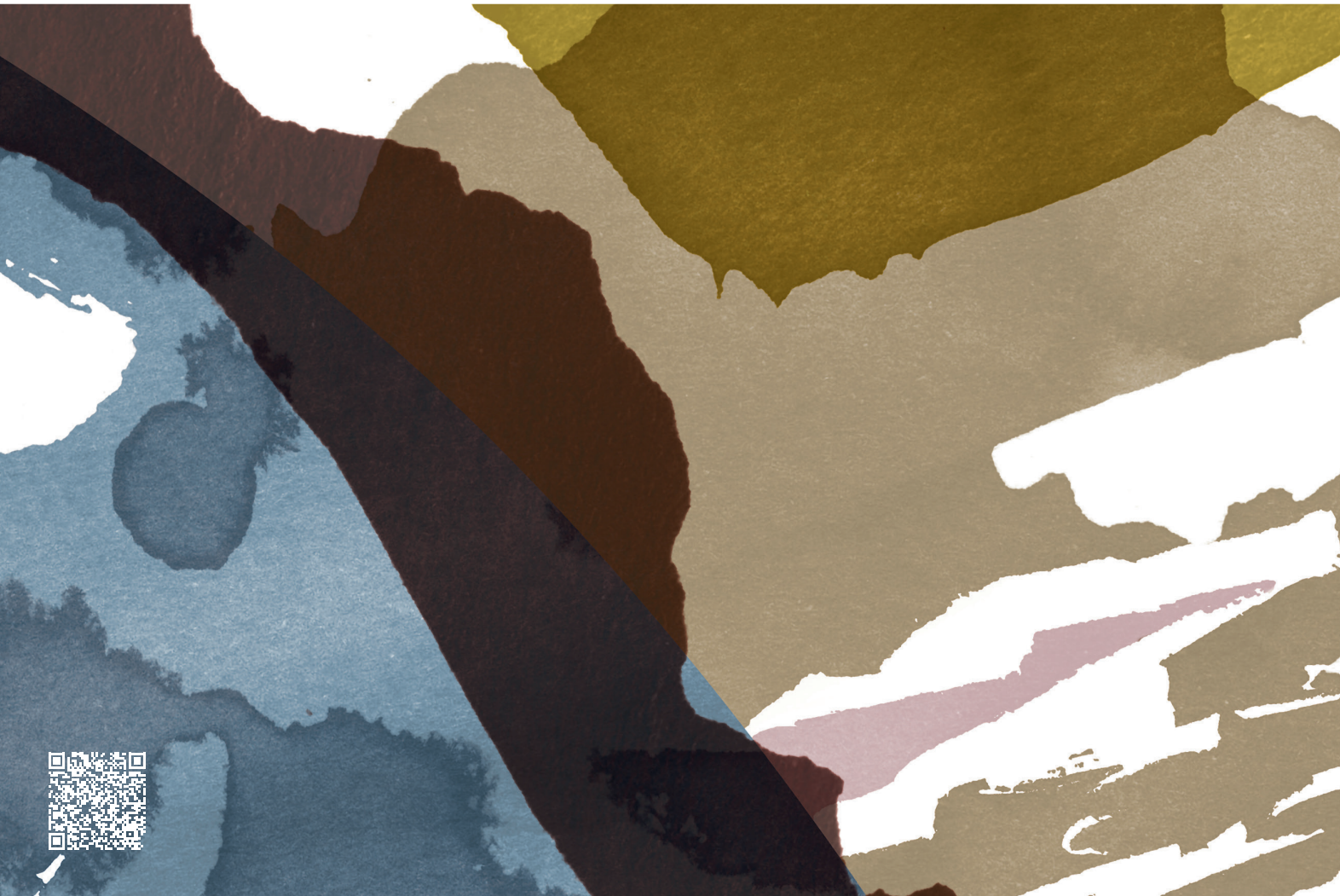
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Mint to Be



Mint flavor has several contributing factors, including the species of plant used and the intensity of the cooling sensation.

When I was a kid, I absolutely HATED the flavor of mint. I didn't understand why restaurants gave out after-dinner mints or why every single toothpaste had to be mint-flavored. Mint gave me a burning sensation rather than a cooling one, and it was entirely too overwhelming for my young palate. But of course, as I grew up and my tastes changed, I realized the error of my ways. Now I look forward to enjoying a peppermint mocha during the holidays and a scoop of mint chip ice cream in the summer.

I didn't realize exactly how nuanced mint could be until I entered the flavor and fragrance industry. Most of us outside the industry just assume all mint is the same: cooling sensation, used in oral care and some food applications. But there are so many subtleties to a mint flavor that depend on which species is used and how the plant should be applied. We can't just tell a flavorist that we want a mint-flavored chocolate. Is it peppermint or spearmint? Should the cooling come on the front or the back? Does the customer want an invigorating element to the chocolate, or should it be more relaxing?

I think this applies to a lot of ingredients in the F&F space. Each flavor or fragrance has those small details that make it stand out. An orange flavor isn't just an orange flavor; it could be blood orange or clementine or tangerine. Consumers want that specificity that they are so used to in their products. This is informed by several different factors, whether it be cultural traditions, regional availability or personal preference. If someone wants that specific flavor, they will accept nothing less.

So while I've learned that mint can be more than a hard candy left on the check at a restaurant, I'm still eager to see how this diverse plant can be applied to so many different use cases. Perhaps I'll try my hand at making a minty herb sauce in a savory dish, or possibly using mint in beverage applications. The possibilities are (somewhat) endless.





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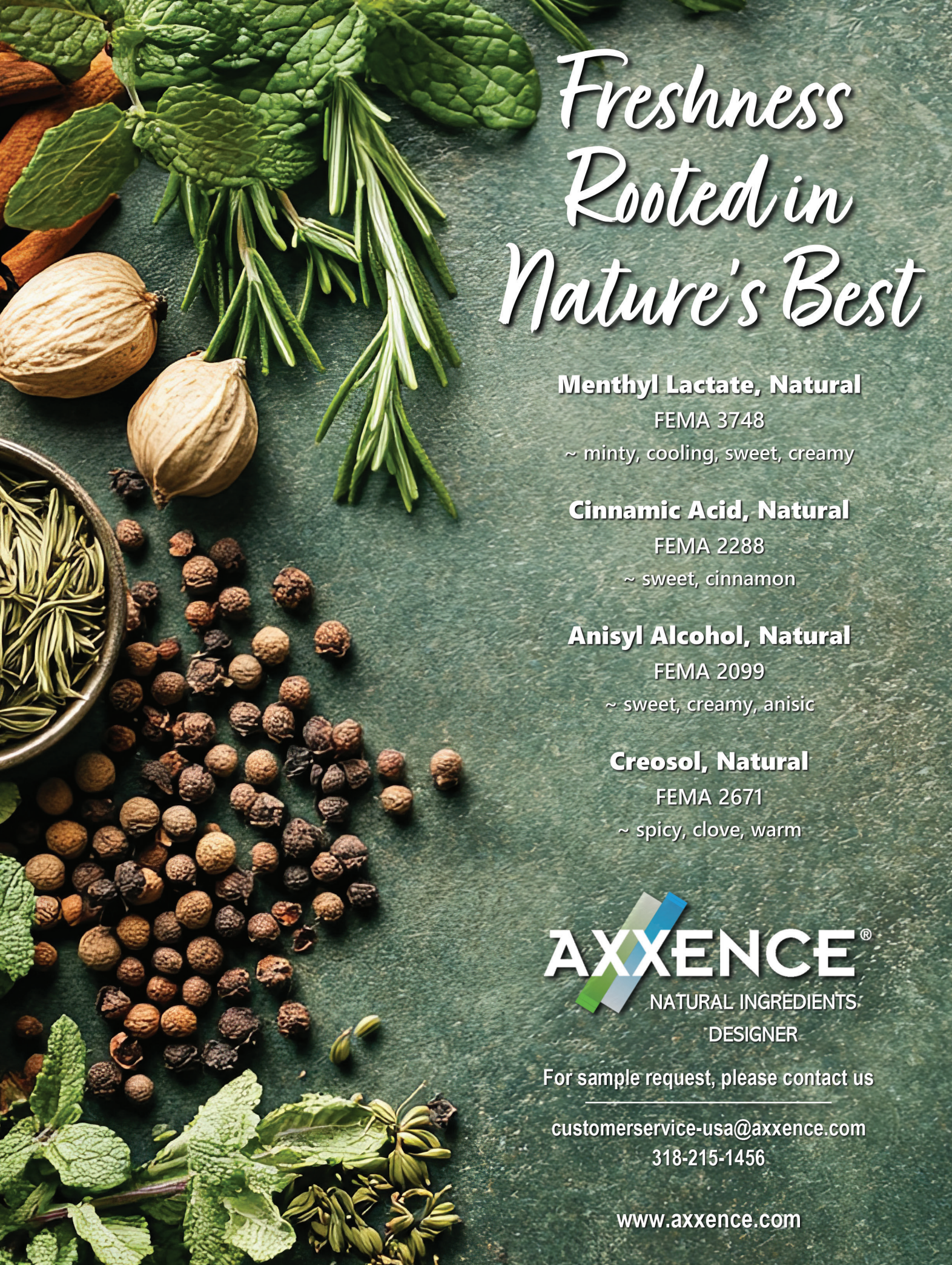
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Ingredients



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Images courtesy of the manufacturers



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https://www.symrise.com/de/scent-care/aroma-molecules/flavor-ingredients/

Enhance your sweet and savory flavor creations with vinylguaiacol, natural This versatile EU natural molecule offers a smoky, clove-like profile with sweet, balsamic facets providing a soothing character. Vinylguaiacol nat. brings warmth to vanilla, chocolate and coffee flavors and underlines the smokiness of whiskey, barbecue and meat flavor applications.



Bacon dithiazine

Avant Organics

avantorganics.com

Bacon dithaizine (FEMA 4017, CAS 74595-94-1) imparts a rich, savory aroma profile that closely mimics the distinctive, smoky essence of cooked bacon. Characterized by its complex balance of meaty, sulfurous, and umami notes, this dithiazine compound provides depth and authenticity in savory flavor applications. It brings a mouthwatering, slightly fatty warmth with subtle hints of grilled pork, toasted fat, and a whisper of sweet smokiness. Ideal for enhancing plant-based meats, snack seasonings, and savory sauces, Bacon Dithiazine delivers the craveable, hearty backbone associated with real bacon flavor. Avant Organics provides this material in dilutions only as EU Natural, Kosher, non-GMO, and Halal.

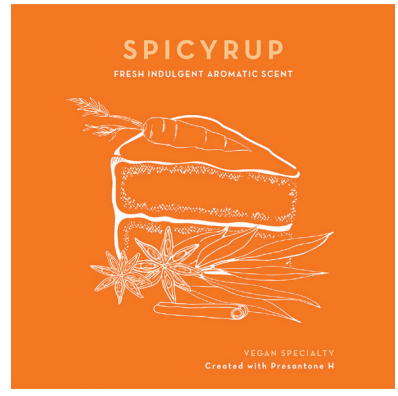


Isobionics Natural alpha-Humulene 90

BASF SE

https://www.isobionics.com/global/en/product-finder/natural-alpha-humulene-90

Isobionics® Natural alpha-Humulene 90 tastes like woody cedar, piney, damp wood and sawdust with a terpineol note. The odor is dry woody, resinous, also cedar, piney and patchouli like, slightly grapefruit and herbal. It has a very high purity and is suitable for non-alcoholic as well as alcoholic beverages – especially for mango, raspberry, mint and citrus flavors. Furthermore, it's the perfect choice for hop oil applications.

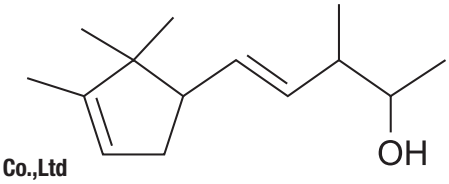


Spicyrup

MANE

https://www.mane.com/media/spicyrup-the-new-mane-addictive-fresh-indulgent-specialty

Crafting with MANE captive molecules, SPICYRUP awakens the senses with fresh, aromatic, and earthy notes. Woody hints of liquorice and spice add depth, while vanilla and caramel create an indulgent touch. This long-lasting specialty enriches various fragrance applications with its beautifully layered complexity. A new must have in perfumers' palette.



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Hangzhou Grascent Co.,Ltd

www.hangzhougrascent.com

3-Methyl-5-(2,2,3-trimethyl-3-cyclopenten-1-yl)-4-penten-2-ol and its isomers have odor characteristics of sandalwood and musk. Suggested applications include fine fragrance, body care, laundry, and home care.

BASF'S L-MENTHOL FCC AND MINT PORTFOLIO: A FRESH APPROACH TO FLAVORS AND SUSTAINABILITY

BASF's marketing and sustainability team takes a deep dive into the company's mint offerings

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BASF
We create chemistry

Mint is renowned for its refreshing flavor and aromatic qualities, historically utilized in culinary preparations and rituals across cultures. Mint oil consists of various volatile compounds that contribute to its distinctive aroma and flavor. In the case of peppermint oil, the primary component is L-menthol. Other significant constituents are menthone, menthyl acetate, and several additional compounds, all of which play a part in the oil's sensory profile.

L-Menthol can be extracted from natural mint, with *Mentha arvensis* being the most common source. The crude oil obtained from *Mentha arvensis* undergoes treatment to produce L-menthol through freezing, resulting in dementholized oil (DMO) and natural L-menthol.

BASF has pioneered the industrial synthesis of L-menthol from citral, converting it into D-citronellal and subsequently into L-isopulegol, ultimately yielding high-purity L-Menthol FCC.[1,2] In oral care products such as mouthwashes and toothpastes, L-menthol is essential, providing a sense of hygiene that consumers expect and appreciate. In the confectionery sector, it contributes a unique flavor profile that enhances the perception of freshness.



L-menthol is one of the main components of mint oil.



Franco Doro, Global Technical Marketing Manager Core Aroma Ingredients, BASF

Sensory Evaluation of BASF's L-Menthol FCC Versus Natural L-Menthol in Mouthwash

We recently commissioned a sensory study with a third-party research agency to evaluate the properties of BASF's L-Menthol FCC in comparison to natural L-menthol. This evaluation utilized a mouthwash formulation with 0.15%w/w of a flavor composition, with L-menthol comprising 30%w/w of this flavor. The study was conducted in India using the triangular test method, a sensory evaluation method used to determine if there is a noticeable difference between two products.[3] The sensory findings show that the panel was unable to readily distinguish between mouthwashes formulated with natural menthol and those utilizing BASF's L-Menthol FCC, highlighting that BASF's L-Menthol FCC can be used effectively to reproduce the sensory profile of its natural counterpart within flavor compositions.

L-Menthol FCC's product carbon footprint, best in class

The amount of greenhouse gas emissions associated with the production of a product from cradle to gate has become increasingly important in the fragrance and flavor industry.

To enhance transparency on the product carbon footprint (PCF) in the F&F industry, BASF developed a PCF scoring system named the **Aroma PCF Scale**[4], which classifies aroma ingredients into different ranges based

Courtesy of BASF

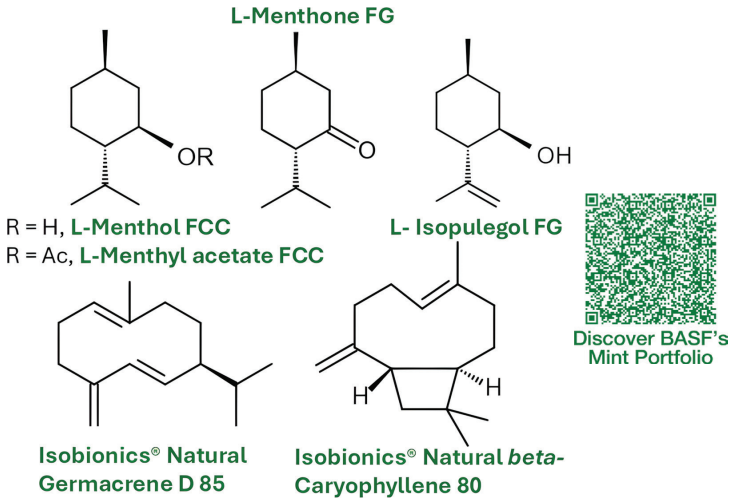
on the PCF of each aroma ingredient. BASF's conventional L-Menthol FCC is in class A (PCF range between 8-15 kgCO_2/kg). In addition, BASF offers L-Menthol FCC rPCF[5] and L-Menthol FCC BMBcert[6], with a carbon footprint lowered by at least 10% and 40% vs conventional L-Menthol FCC, respectively.[7]

In a study performed by BASF with the same L-Menthol produced in China, using coal-based raw materials and/or coal-based utilities, the PCF doubles.[8]

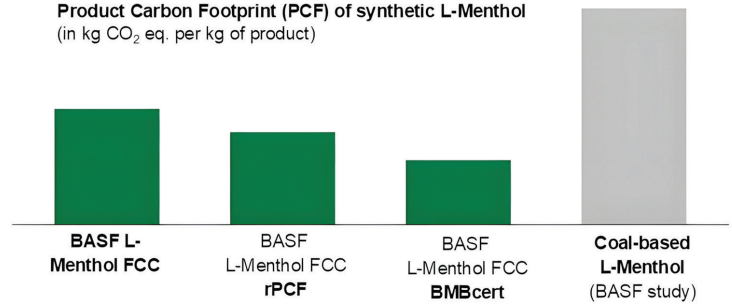
The Mint Portfolio at BASF

The BASF mint portfolio features a diverse selection of complementary ingredients to L-menthol, including L-Isopulegol FG[9], L-Menthone 70 FG, and L-Menthyl Acetate FCC. Each of these ingredients harmonizes seamlessly with L-Menthol FCC, enabling the creation of superior mint compositions. Additionally, they can also be utilized independently of L-Menthol FCC, offering formulators flexibility in crafting a variety of flavor and fragrance profiles. L-Isopulegol FG is a freshness-enhancing ingredient that seamlessly integrates into various mint formulations, offering flexibility for developing new creations. Its consistent high quality ensures that it pairs excellently with L-Menthol FCC and other mint components, serving as an asset for reconstructing synthetic dementholized mint oil. L-Menthone 70 FG, known for its versatile profile, provides flavor volume compared to L-Menthol FCC, allowing it to blend beautifully with fruity, floral, and woody notes, making it ideal for both mint and sweet herbal compositions. Similarly, L-Menthyl Acetate FCC enhances mint flavors with its compatibility with various notes, including fruity and floral elements.

Additionally, BASF's portfolio includes fermentation-based natural flavor ingredients, such as Isobionics® Natural Germacrene D 85 and Isobionics® Natural *beta*-Caryophyllene 80, which enhance the mouthfeel and the spicy and woody characteristics of mint oils.



Chemical structures of BASF Mint portfolio with corresponding tradenames.



Relative carbon footprints of BASF's L-Menthol FCC vis-à-vis coal-based L-Menthol.

Together, these ingredients form an integrated mint toolbox that empowers creators to develop refreshing and appealing flavor and fragrance profiles, leveraging the distinctive characteristics of each component to achieve optimal results.

Conclusion

In summary, L-Menthol is an essential ingredient in oral care and confectionery, known for its cooling properties and refreshing flavor. The sensory evaluations we carried out demonstrate that BASF's L-Menthol FCC can match the performance of natural L-Menthol, providing formulators with a reliable alternative. Additionally, the carbon footprint analysis underscores the superiority of the BASF L-Menthol FCC offerings to coal-based synthetic products.

At BASF, we are committed to providing a reliable supply of L-Menthol FCC. With large-scale plants in Kuantan, Malaysia and Ludwigshafen, Germany, and a third Menthol plant being built in the Ludwigshafen site, we are prepared to grow with our customers in the F&F industry.

References

1 D Dylong et. al., Synthesis of (-)-menthol: Industrial synthesis routes and recent development. Flavour Fragr J.; 37: 195-209 (2022)

2 FCC: Food Chemical Codex, https://www.foodchemicalscodex.org/

3 The testing followed the ISO 4120 standard.

4 Product Carbon Footprint (PCF) Ranges [kg CO2e/Kg]: A++ <1, A+ 1-8, A 8-15, B 15-25, C 25-50, D 50-100, E 100-500, F >500

5 rPCF: reduced product carbon footprint, PCF calculation method certified by TÜV Rheinland ID No. 0000080389: BASF SE - Certipedia

6 BMBcert: Biomass balance certified according to standards like REDcert2 and ISCC PLUS

7 Mass balance approach: defines the rules for attributing the proportion of sustainable raw materials/utilities to the end product The Mass Balance Approach

8 This study is currently being updated to include the most recent emission factors for the raw materials including methane slip and will afterwards be re-certified by TÜV Rheinland. ID 0000086825: BASF SE - Certipedia

9 FG: food grade

Eurofragance Appoints New CEO, Effective 2026



Jiménez and Mercier will continue to work together throughout 2025 to ensure a seamless transition of responsibilities.

On February 14, 2025, fragrance house Eurofragance announced the appointment of Joan Pere Jiménez as chief executive officer, effective January 1, 2026. Current CEO Laurent Mercier will assume a new role on the company's board of directors starting in 2026.

Jiménez has worked with Eurofragance for over ten years. He joined the company as chief operations officer, and has held the position of chief marketing officer since January 2024. He has worked with the company's management committee throughout his tenure, including serving as general manager for the Europe, Africa and Turkey region through 2021 and the Asia Pacific region in 2023.

"I approach this new challenge with great enthusiasm and responsibility," said Jiménez. "I am grateful for the trust the board of directors, the founding family members and the management team have placed in me. During the remainder of this year, I will continue to work with Laurent to ensure an orderly transition and carry the vision that has brought us this far, focusing on excellent service, innovation, a firm commitment to sustainability and a people-focused model."

Company officials stated that Jiménez and Mercier will work together throughout the transition period to ensure a smooth transfer of responsibilities and continuity of operations.

"Leading Eurofragance through this exciting period of growth and transformation has been a true honor," Mercier said. "I am filled with gratitude for the unwavering commitment of our teams and the trust they placed in me on this journey. Joan Pere has been a pivotal part of our history, and I have no doubt that, with his vision and leadership, the company will continue to thrive."

Chairman and founder of Eurofragance Santiago Sabatés added, "We are particularly pleased that the transition is being made with a person from within the company, who knows Eurofragance perfectly well and whose contribution has been decisive for delivering the results and achievements that were attained during Laurent's tenure."

Courtesy of Eurofragance

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Samantha Mane Becomes MANE Group CEO

On February 20, 2025, flavor and fragrance company MANE Group announced that Samantha Mane has succeeded her father, Jean, as chief executive officer. Samantha Mane will be the first woman to preside over the company.

"It is with great enthusiasm and pride that I take on this new responsibility today," she said. "I'm thrilled to continue this family-run entrepreneurial adventure and to lead a group with such a wealth of human resources and spirit of innovation. Our independence and family ownership have enabled us to have a long-term vision and make bold choices for 154 years. I want to build on the group's roots, values, creativity and high standards that make us unique, and continue to uphold our commitment to the environment."

Samantha Mane is one of five members of the fifth generation of the Mane family. Her father, Jean, ran the group from 1995 to 2024. She joined the group in 2006 and has worked under the mentorship of her father and the group's senior employees. Samantha led management of MANE's Europe Middle East & Africa region in 2016, the group's largest regional market.



Samantha Mane is one of five members of the fifth generation of the Mane family.

Symrise Relaunches Beverage Incubator as bWorks

On February 27, 2025, flavor manufacturer Symrise announced the relaunch of its beverage incubator (formerly known as Califormulations) now named bWorks.

bWorks will offer customers end-to-end solutions and leverage consumer insights, rapid prototyping and agile marketing. Company officials say that the incubator will allow for speed to market at the right size and flavor profile.

"Our modular services, from insights and design to prototyping, development and full-scale production, makes us the ideal partner for our customers' beverage innovation journey," said senior director of beverages Fernando Levy. "Customers can obtain limited-edition runs, line extensions, regional or national launches, or long-term productions from us. bWorks adapts to customer needs through our bundle services and longstanding flavor expertise.



bWorks will offer customers end-to-end solutions and leverage consumer insights, rapid prototyping and agile marketing.

bWorks will support its customers with its three beverage-focused locations in the United States: Teterboro, N.J., Columbus, Ga., and Laguna Beach, Calif.

From top: Courtesy of MANE Group; Image by Alfazet Chronicles at Adobe Stock

CARON and Givaudan Announce New Collaboration, Louise Turner Appointed House Perfumer

On February 17, 2025, Maison CARON and Givaudan announced a new collaboration with Louise Turner serving as house perfumer. The collaboration draws inspiration from the company's olfactive history and Turner's contemporary vision.

"Working with CARON is a dream come true!" Turner said. "This partnership not only fuels my passion for fragrance creation but also opens the door to a new wave of creativity. Together, we will blend tradition with innovation, crafting scents that resonate with the heart and soul of the brand while pushing the boundaries of what's possible in perfumery."

For the collaboration, Turner reinterpreted some of Maison CARON's iconic elements with new creations influenced by her childhood in Kent. Her first fragrance for CARON will be announced this upcoming autumn.

"Louise is a consummate professional in the perfumery world, and a passionate artist," said Hélène Levy, managing director of CARON. "She has offered Haute Parfumerie both great success and the most free-spirited creations. She exemplifies simplicity, a rare sincerity and a desire to give her whole self to everything she creates. Her work, epitomizing elegance, sensitivity and creativity, will give CARON a fresh and firmly forward-looking quality."



The collaboration draws inspiration from the company's olfactive history and Turner's contemporary vision.

Longtake Launches Solid Perfume

Korean fragrance brand Longtake released three gender-neutral solid perfumes formulated from up cycled oak sawdust.

The solid perfume is alcohol free and has a gel-type texture that can be easily applied as desired. The brand claims that the scents will last on the skin up to 10 hours. Additionally, Longtake's products are vegan and use recyclable packaging.

Fragrance Highlights

Sandalwood: Lime, eucalyptus, violet, iris, mint, amber, cedar wood, cardamom, sandalwood, leather

Black Tea & Fig: Elemi, lemon, fig tree leaves, patchouli, incense, black tea, geranium, vetiver, cashmere wood, cedar wood

Basil & Vetiver: Lime, bergamot, orange, basil, iris, lilac, vetiver, patchouli



The solid perfume is alcohol free and has a gel-type texture that can be easily applied as desired.

From top: Courtesy of Maison CARON; Longtake

T. Hasegawa USA Expands Flavor Innovation Center in California



Included in the renovated facility are new library compounding labs for both sweet and savory flavors and a specialty area for compounding and creating beverage flavors.

Courtesy of T. Hasegawa

Flavor manufacturer T. Hasegawa USA announced the completion of its renovation project of the company's R&D facility in Cerritos, Calif. The renovation increases the company's flavor innovation facilities by more than 50%.

"The last several years have marked immense growth for T. Hasegawa USA, as we've continued to invest in our resources and technology to become one of the leading flavor manufacturers in North America," said chief executive officer Tom Damiano. "Our newly expanded R&D facilities provide more workspace and state-of-the-art equipment to help our team better serve our customers with best-in-class flavor solutions."

Included in the renovated facility are new library compounding labs for both sweet and savory flavors and a specialty area for compounding and creating beverage flavors. Further, the company's application lab space was increased as well as upgraded client collaboration areas.

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ADM, Asahi Group Sign Exclusive Distribution Agreement for Postbiotic Ingredient



With this agreement, ADM will expand the ingredient's distribution to food manufacturers in North America, Europe and Asia.

ADM announced its agreement with Japanese company Asahi Group Foods Corporation to exclusively market and distribute Asahi Group's proprietary postbiotic, Lactobacillus gasseri CP2305. This ingredient targets stress, mood and sleep support.

"Stress mood and sleep are among the fastest-growing wellness segments and - as the cornerstone to physical and emotional health - they are also some of the most disruptive factors to everyday life and overall well-being if not properly supported," said Mark Lotsch, ADM's president of global health and wellness. "Our agreement with pioneering Asahi Group to bring science-backed Lactobacillus gasseri CP2305 post-biotic into our robust health and wellness solutions library is a critical step in advancing new product development to support consumers' quality of line around the world."

L. gasseri CP2305 is a postbiotic ingredient developed from lactic acid bacteria. It has been tested in eight human clinical trials, which showed evidence of reduced stress, better sleep efficiency, improved sleep quality and improved sleep duration.

With this agreement, Asahi group will continue to use the ingredient in supplements and beverages sold in Japan, while ADM will expand the ingredient's distribution to food manufacturers in North America, Europe and Asia.

"Asahi is committed to solving global food and health challenges, especially those contributing to mental and physical wellbeing for consumers," said Kazuhiro Hayashi, corporate officer and senior general manager at Asahi Group Foods. "We're excited to enter a supply agreement with ADM for Lactobacillus gasseri CP2305, leveraging their expertise in microbiology and global scale to effectively expand the reach of this innovative solution."

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Turpaz Acquires Sweet Flavors Company Doucy



The transaction includes the acquisition of Doucy's state-of-the-art plant in the Benelux region.

On February 25, 2025, Turpaz Industries announced its acquisition of Doucy, a Belgian manufacturer specializing in sweet flavors.

Founded in 1968, Doucy is a manufacturer of sweet flavors for food and beverages, as well as colors and additives for the animal feed industry. The transaction includes the acquisition of Doucy's state-of-the-art plant in the Benelux region.

"Joining the Turpaz group is a significant milestone for Doucy," Guy Peremans, chief executive officer of Doucy, said. "Turpaz's capabilities, advanced technology and impressive and unique product portfolio in Europe create a valuable opportunity for Doucy to significantly expand its operations, enhance its technological capabilities, diversify its product portfolio and strengthen its presence in Benelux."

Turpaz CEO Karen Cohen Khazon added, "The acquisition of Doucy is another milestone in Turpaz's global growth strategy. The synergy between Soucy's knowledge and experience in the sweet flavors sector and Turpaz's existing capabilities in the savory sector in Belgium will allow us to offer our customers an even broader product portfolio and comprehensive, high-quality solutions."

Courtesy of Doucy



PROFILES: DANA DANEKER GASIOROWSKI

Gasiorowski approaches her flavor applications with an open mind and encourages budding flavorists to think outside the box.

What led you to the flavor industry?

After finishing my undergraduate degree, I worked for an environmental science company, where I learned to extract and analyze a variety of natural products looking for toxins in the environment. Although the work I engaged in was meaningful and had a significant impact on the communities we studied, it didn't ignite a sense of energy or passion within me. My grandmother had always spoken fondly about the McCormick Spice Company, and since I had gained experience with natural products analysis in my earlier position, I took the leap of faith and started my journey working QC in the Spice Mill. That was my foot in the door! Currently, I work for IFF where I continue to grow as a flavorist and count my blessings that I found this career.

Can you share a defining moment or breakthrough in your career as a flavorist?

There have been times in my career where I felt like I was at a crossroad. The options in this industry are diverse, be it in quality or research, research or commercial, commercial or management, flavor, or scent. While I understand the need to have career ladders, my path has been more of a trapeze act, swinging between many of these elements while mastering the science and fine art of flavor creation.

One of the most remarkable aspects of working for IFF has been the freedom I have had to explore the interface of flavor and scent creation. Most recently, I have got the chance to collaborate closely with our amazing perfumers supporting Bath and Body Works in developing beautiful expressions of scent inspired by emotionally potent

flavor accords. Our fragrance team likes to call me their Fine Flavorist, which always makes me smile!

What were some of the biggest challenges you faced when entering the industry, and how did you overcome them?

I can still remember the day I learned of the flavor chemistry lab at R&D, where chemistry was combined with artistry to create flavors. It fascinated me instantly! At that time, I was working in the QC lab specializing in vanillas and bakery extracts. It took me two years and a job-hop through sensory science to land me in the flavor research lab, where I honed my skills further working with some of the best flavor scientists in the field before becoming a certified flavorist.

I was lucky to have amazing mentors who saw my potential and advocated for me along the way. Their gift of mentorship had a profound impact on me that has inspired my way of being ever since. IFF has a wonderful Mentorship program and being the IFF Flavor School Manager for North America has given me a fantastic platform to pay it forward.



Courtesy of IFF

Name: Dana Daneker Gasiorowski

Title: Creative Director, Cross Category North America, Principal Flavorist, IFF

Location: Dayton, New Jersey, USA

Can you describe a time when a flavor formulation didn't turn out as expected? How did you address the issue?

One of the biggest challenges to successful formulation and customer delight is lack of alignment due to

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gaps in language and descriptors. For example, one of our customers wanted us to make an "on-trend" dairy flavor that had goat milk character. After creating many variants of the profile, which were not well-received by the customer, they finally admitted that they did not really know what goat milk was like! Immediately, we saw the opportunity to explore this specific character with the customer, align our descriptors and rebalance the profile for a WIN! Communication within the team and with our customers is KEY.

How do you find the right balance between artistic expression and the technical limitations of flavor formulation?

I love challenges that force me to use both sides of my brain, and I always have. In my role at IFF, I get to integrate creative design and explore technical solutions daily. Each brief brings different guidelines, whether they be regulatory, cost, application or deadline. The one constant is that none are the same.

One of the critical skills a flavorist must have is tolerance or, optimally, a masochistic love for this type of complex design. Being able to be flexible and responsive to these guidelines while also leaving space for a dash of differentiating creativity is truly part of the art.

Are there specific skills or knowledge areas you believe are crucial for a flavorist to master?

With a strong technical foundation, I would say it is important to stay curious, keep up with trends and continue to think out-of-the-box! Understand the raw materials, find your favorites, master them. Learn everything you can about them, ask questions and build your catalog of ingredient expertise. Keep detailed notes, for they will be invaluable throughout your career.

Finally, after 25 years in the field and 11 years at IFF, I have learned that it is critical to HAVE FUN and be open to learning something new every day you approach the bench. That is the wonder of this profession!

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Nerol is well known for its floral notes for citrus and fruit flavors.



BY JOHN WRIGHT
johnwrightflavorist@gmail.com

Flavor Bites: Nerol

Learn about the diverse range of applications for nerol.

Nerol, (2Z)-3,7-dimethyl octa-2,6-dien-1-ol, (FEMA GRAS #2770, CAS #106-25-2) is for many flavorists a quintessential floral note for fruit flavors. The obvious comparisons are with citronellol and geraniol, both of which have strong aspects in a floral context. Nerol also has a dominant rose note, but this is enhanced by a slightly harsh edge. This may not make it the perfect starting point for rose flavors, but it can work well in many fruit flavors. In some flavors the best effect can be obtained by a careful blend of nerol and geraniol.

Note that the dose rates given throughout this article are the levels suggested for use in flavors intended to be dosed at 0.05% in ready-to-drink beverages or in a simple bouillon.

Citrus Flavors

Grapefruit: The effect of this ingredient in grapefruit flavors is fairly subtle, but it does improve authenticity at 20 ppm.

Kalamansi: Amongst a slew of more recently interesting flavors, kalamansi stands out. One hundred ppm of nerol is an interesting addition to kalamansi flavors.

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Lemon: Nerol offers a number of positive effects in lemon flavors. It blends well with neryl acetate and also softens citral. Two hundred ppm is a good level in respect of these two parameters. Nerol can also help a little to reduce the impact of citral oxidation by oxidizing itself to neral. One thousand ppm is a better level for this effect.

Mandarin and Tangerine: Both mandarin and tangerine flavors gain from moderate additions of nerol. One hundred ppm is very effective.

Orange: Nerol can broaden the character of all orange flavors and enhance realism significantly. Levels vary, but 80 ppm is a good place to start.

Fruit Flavors

Apricot: Linalool is the most important floral note in all styles of apricot flavors. Nerol plays a supporting role, but can enhance the floral complex at levels of addition in the region of 500 ppm.

Blackberry: Ten ppm of this raw material has an interesting effect in authentic blackberry flavors, balancing some of the musk profile.

Blueberry: Linalool also has a big part to play in all blueberry flavors. Again, nerol is secondary, enhancing the floral notes at 500 ppm.

Cherry: Nerol is interesting in all cherry flavors. It adds to the more realistic styles, but also helps soften benzaldehyde dominated confection. Five hundred ppm is ideal in both styles.

Cranberry: The floral character of cranberry flavors is quietly lifted by the very subtle addition of 20 ppm of neral.

Grape, Concord: Nerol introduces an obvious floral note into Concord grape flavors at 1,000 ppm, but the effect is entirely positive.



Neral can add to the subtle floral notes of cranberry applications.

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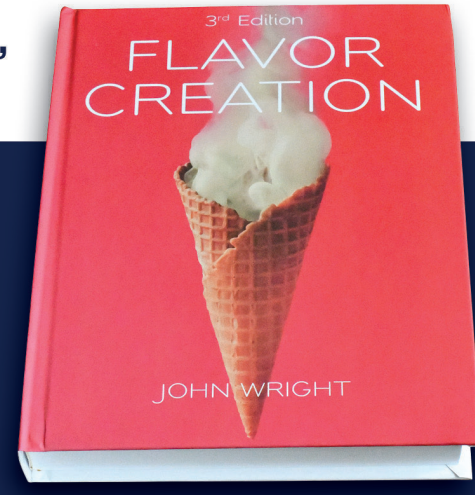


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Nerol in combination with geraniol can help address the challenge of ginger flavors.

Lychee: The floral character of rose dominates good lychee flavors, but care should be taken to prevent a single ingredient, especially citronellol, sticking out. Nerol and geraniol both help in this regard. The best level for nerol is 1,000 ppm.

Peach and Nectarine: Nerol is less important in peach and nectarine flavors than in apricot flavors because the overall floral note is less prominent. One hundred ppm works well.

Raspberry: Nerol is quite effective in raspberry flavors because it has some affinity to damascenone. Levels of addition are pretty much at creative discretion, ranging from 100 to 1,000 ppm.

Strawberry: Nerol is not a good addition for all strawberry flavors. It does enhance the profile of ripe strawberry flavors. One hundred ppm is a good starting level.

Tamarind: Nerol provides a very compatible floral lift to tamarind flavors. Levels vary, depending on the effect desired, but 1,000 ppm works very well.

Floral Flavors

Elderflower: Hotrienol has an obvious odor connection to linalool but is more bright and sharp. Two hundred ppm of nerol helps to push things in the right direction.

Neroli: Authenticity is the main benefit from adding a touch of nerol to neroli flavors. Levels are only limited by the imagination, starting at 200 ppm.

Rose: In a creatively ideal world, a combination of rose otto and rose de mai absolute would make a perfect rose flavor. Sadly, cost intervenes and we always need to make economies. Citronellol is the lead ingredient, but nerol has a very useful modifying role at 5,000 ppm.

Other Flavors

Ginger: Ginger flavors are often an interesting challenge. Lifting the profile without diminishing the specific ginger character is not so easy. Nerol can help, often in conjunction with geraniol. Five hundred ppm is a good level to shoot for.

Honey: Honey flavors are very varied, many with a strong floral note. Nerol can be interesting in many styles, starting at 1,000 ppm.

Tea, Black: Nerol is distinctly more compatible with black tea flavors than with green tea flavors. Two thousand ppm can enhance the perception of a good quality, high grown black tea.

Tomato, Ripe: The impact of this ingredient in tomato flavors is to increase depth and ripeness, both attractive characteristics.

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With innovations in nano-emulsions, enhanced skin compatibility, and sustainability benefits, alcohol-free fragrances are set to redefine the future of fine fragrance.

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Skinification of Fragrance: THE RISE OF ALCOHOL-FREE PERFUMES

Fragrances formulated without alcohol meet consumer demand for long-lasting scents that also nourish and protect the skin.

BY SHANNAZ SCHOPFER, chief executive officer, The Beauty Architects



Shannaz Schopfer, chief executive officer, The Beauty Architects



Courtesy of The Beauty Architects

The fragrance industry is at a pivotal moment. By the end of 2025, the global perfume market is expected to reach a staggering $53 billion, signaling a booming industry where innovation is essential. Consumers today are no longer content with just a pleasant scent—they are demanding sustainability, skin-friendly products, and formulations that align with cultural and regulatory shifts.

Enter the alcohol-free fragrance movement, a rapidly growing category that's capturing attention worldwide. While traditional perfumes rely on alcohol as a solvent to help distribute fragrance, recent advancements are making it possible to create high-quality, alcohol-free alternatives without sacrificing performance, longevity, or sensorial appeal.

Why Now? The Key Drivers Behind Alcohol-Free Fragrance Innovation

The shift toward alcohol-free perfumes is not just a passing trend—it's a response to multiple powerful market forces:

- **Regulatory Pressures:** With tightening environmental regulations, particularly in California and the EU, volatile organic compounds (VOCs) are under greater scrutiny. Alcohol-free formulations offer a compelling alternative as brands look to future-proof their products.
- **Cultural Preferences:** In regions like the Middle East and parts of Asia, alcohol-free perfumes are a cultural norm due to religious and social expectations. This demand has been a driving force in the growth of alcohol-free options, especially in the luxury fragrance sector.

- **Consumer Demand for Skin-Friendly and Sustainable Products:** Alcohol can be drying and irritating to the skin. As the "skinification" trend merges skin care with fragrance, consumers are seeking perfumes that not only smell good but also nourish and protect their skin.

The Science of Alcohol-Free Fragrance: Droplet Control Technology

Creating a high-performance alcohol-free perfume requires more than simply removing alcohol from the formula. One breakthrough technology, Droplet Control Technology, is revolutionizing the industry. Developed by Klearia and industrialized by P&B Group, this innovation uses nano-fluidic engineering to create stable, high-quality emulsions without alcohol.



Alcohol-free fragrances can be used in fine fragrance, body care, and fragrance-infused skincare.

Klearia's CEO and founder, Clément Nanteuil, explains the technology: "Our process begins by structuring perfume at the nanometric scale. We use moderate pressure on emulsions, where fragrance oils—traditionally dissolved in alcohol—are softly elongated and broken down into ultra-fine droplets. This process allows us to create nano-emulsions that are stable, sensory-rich, and able to preserve the fragrance's integrity."

This technology has many benefits:

- **Enhanced Longevity:** Alcohol evaporates quickly, leading to shorter-lasting scents. Without alcohol, the fragrance lingers longer on the skin.
- **Silky Texture:** Alcohol-free perfumes feel velvety and hydrating, unlike traditional alcohol-based sprays that can be drying.
- **Skin Benefits:** The stable emulsions created by Droplet Control Technology allow for the incorporation of skin care ingredients, such as moisturizers and antioxidants, offering added benefits beyond scent.

As Laurent Dodet, CEO of P&B Group, notes, "Droplet Control Technology reimagines fragrance formulation at the molecular level, delivering superior sensory experiences and stability."

Market Applications: Where Alcohol-Free Fragrances Shine

As Julia de Strada, Head of Marketing at P&B Group, puts it, "Alcohol-free perfumes are making their mark in several areas, blending fragrance with skin care and providing unique consumer experiences." Applications include, but are not limited to:

- **Luxury Skin Perfumes:** Alcohol-free fragrances encourage a direct-to-skin application ritual, often enriched with skin care ingredients. These perfumes are designed for longer wear, providing a multisensory experience that hydrates and nourishes.
  - Higher fragrance concentration (15-25%) for lasting impact.
  - No photosensitivity, making them safe for daytime wear.
  - Gentle on the skin, suitable for sensitive skin and even baby-friendly formulations.
- **Hair & Body Mists:** Traditional hair perfumes can dry out hair due to alcohol content. Alcohol-free mists hydrate and condition hair while delivering long-lasting fragrance.
  - Non-drying and conditioning.
  - Longer-lasting scent retention on hair.
  - Can be adapted for SPF-infused body sprays or other functional products.

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- **Skin care-Infused Fragrances:** As the line between skin care and fragrance blurs, brands are integrating active ingredients like hyaluronic acid, vitamin C, and antioxidants into their fragrance formulas. These alcohol-free options not only smell exquisite but also offer skin care benefits such as hydration, anti-aging, and soothing effects for sensitive skin.

The Industry Shift: A Sustainable and Regulatory-Friendly Alternative

Beyond consumer preferences, alcohol-free fragrances offer compelling advantages in terms of sustainability and regulatory compliance:

- **Reduced VOC Emissions:** Alcohol-free perfumes produce fewer VOCs, aligning with global sustainability efforts.
- **Lower Carbon Footprint:** Alcohol production is energy-intensive, so alcohol-free perfumes have a smaller environmental footprint.
- **Regulatory Resilience:** With growing alcohol restrictions in markets like the EU, alcohol-free formulas offer brands a way to stay ahead of regulations.

Laurent Dodet points out, "Fragrance brands that invest in alcohol-free innovation today will be the ones shaping the industry tomorrow. This isn't just about compliance—it's about leading a new era in perfumery."

The North American Market: A Game-Changing Opportunity

The North American market is rapidly emerging as a pivotal arena for alcohol-free perfumes. With increasing consumer demand for cleaner, skin-friendly products, brands have a unique opportunity to capitalize on this rising trend. Alcohol-free perfumes, in line with the broader shift toward cleaner beauty, have the potential to revolutionize the market and give brands a significant competitive advantage.

Today's fragrance consumers are well-informed and seek products that align with their values of sustainability and skin-friendly formulations. Alcohol-free perfumes not only deliver a refined sensory experience but also cater to this expanding demand.

The Future of Fragrance is Alcohol-Free

Alcohol-free perfume technology is more than just an alternative to traditional formulations—it's a revolution. With innovations in nano-emulsions, enhanced skin compatibility, and sustainability benefits, alcohol-free fragrances are set to redefine the future of fine fragrance. Brands that embrace this shift early will not only meet the demands of today's consumers but also lead the way into the future of perfumery.

For fragrance brands looking to stay ahead, the message is clear: the next generation of fragrance is here—and it's alcohol-free.

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How AI Can Solve the Ethical Luxury Puzzle

Technologies such as artificial intelligence are helping luxury perfume brands meet high-end expectations and maintain sustainable practices.

BY PAUL HOULSBY, CEO and founder at The Perfume Movement



Paul Houlsby, CEO and founder at The Perfume Movement

High-end perfumes use rare and exotic ingredients, which are all too often unsustainably harvested and sourced.

From top: Courtesy of The Perfume Movement; Image by Breezze at Adobe Stock

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For years, the luxury perfume market has been driven by opulence and desire, often prioritizing quality products and high-end experiences over sustainable practices. But why should consumers be forced to make that choice? Why can't luxury shoppers have both ethical fragrances and a high-end premium experience?

Traditionally, this problem has stemmed from the nature of luxury brands. High-end perfumes use rare and exotic ingredients, which are all too often unsustainably harvested and sourced. These products also come in elaborate, heavy, and multi-layered packaging, which contribute significantly to waste.

But the world of luxury is changing. According to new research from The Perfume Movement and GWI, a third of luxury buyers (32%) care about the quality of the ingredients used, while 15% feel it's important that their products are vegan and cruelty free. That means ethical sourcing is no longer just 'fashionable' — it's a necessity for perfume brands looking to stay competitive.

As premium consumers push for more sustainable options, the luxury perfume industry faces a profound challenge: the need to balance the lavish demands of high-end consumers with growing ethical and sustainability concerns. This "luxury-ethical puzzle" requires serious innovation on the part of perfume brands — and that's where artificial intelligence (AI) comes in.

AI Powers Transparency

AI technologies are opening up the once opaque luxury perfume industry, providing premium buyers with greater insight into how their perfumes are made and the impact of each and every ingredient.

As just one example, consider Firmenich's 'EcoCompass' tool. Using artificial intelligence, the EcoCompass offers detailed ecological and ethical information for every ingredient used, empowering perfumers to make informed choices without compromising on quality. The EcoCompass can also calculate carbon emissions, water usage and a "green score," helping brands develop sustainable products without having to lower their exceptional quality standards.

AI Powers New Packaging Design

Artificial intelligence and machine learning (ML) are already presenting a tremendous opportunity for transforming packaging in various sectors. By analyzing vast amounts of data, AI can consider factors such as product dimensions, fragility, and transportation requirements. It can then recommend the most sustainable packaging solutions to minimize waste and ensure product safety.

For the luxury perfume market, however, there is another factor to consider: opulence. Luxury perfumes are renowned for their sophisticated design and lavish feel. Unfortunately, most sustainable packaging simply doesn't match up.

Take perfume bottles as just one example. Post-consumer recycled (PCR) glass — used to meet sustainable packaging demands — frequently has defects such as pitting and uneven surfaces, making it harder to create a premium feel. Similar concerns exist around outer packaging, with most luxury bottles using non-recyclable magnetic closures often combined with plastics (both non-recyclable).

To address this, luxury brands need to consider more 'eco-luxe' materials. Luxury biodegradable alternatives,





By analyzing vast amounts of data, AI can consider factors such as product dimensions, fragility, and transportation requirements.

such as Sulapac, are opening up entirely new packaging options for luxury sustainable brands. While lacking magnetic closures, Sulapac's substantial weight preserves the luxurious feel of the packaging. Therefore, by adopting eco-luxe materials with a considered approach, the industry can prove that environmental responsibility and luxury can coexist, setting a new standard for sustainable packaging.

AI Powers Personalization

For too long, the luxury perfume market has been monopolized by a few high-end brands dictating consumer choices. The result is a monotonous sea of identical fragrances — a 'one size fits all' approach that hardly embodies true luxury. This paradigm must change.

Considering the unique skin chemistry of each individual, it's surprising that consumers have accepted wearing the same scents. However, more and more consumers are now waking up to the fact that true luxury lies in personalization, down to the very accords that create a unique fragrance. In fact, according to TPM's latest research, 'uniqueness of scent' is the top thing UK shoppers look for when buying a fragrance. Here, AI can be a game-changer.

At The Perfume Movement, we've been using machine learning algorithms to analyze an extensive database of scent profiles, aligning them with individual user preferences by comparing and mapping everything from favored fragrance notes to desired intensity levels.

By leveraging this sort of AI technology, we aim to create personalized scent profiles for individual shoppers. This not only meets the demands of today's discerning consumers but also sets a new benchmark for luxury in the fragrance industry.

AI-Enhanced Artistry

Ultimately, the luxury perfume industry stands at a pivotal crossroads, driven by the demands of eco-conscious consumers and groundbreaking technological advancements. While AI can significantly ensure that ethics and luxury coexist, it is essential to recognize that the artistry and creativity of perfumers – the 'noses' – remain at the heart of luxury perfumery. AI can enhance their craft by offering data-driven insights and optimizing formulations, but the true essence of luxury fragrances still resides in the skilled craftsmanship of the perfumers and the exceptional quality of the ingredients they use.

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MINT CONDITION
FROM HARVEST TO FORMULATION

Innovative technologies and emphasis on sustainability have allowed this herb to continue its impact on product development.

BY TIM NEMETH, principal scientist, ADM



Tim Nemeth, principal scientist, ADM



Mint farmers and scientists are working hand in hand to preserve quality and ensure reliable yields and authentic, enjoyable mint flavors are available for generations to come.

From top: Courtesy of ADM; Image by juliasudnitskaya at Adobe Stock

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The unmistakable, refreshing sweetness of mint frequently inspires nostalgia. Whether it's fond memories of holiday candies, ice cream on a hot day or the iconic taste of a brand's signature product, mint is a stimulating flavor that's familiar, timeless and comforting.

Creating superior mint flavor starts at the source. From more than 600 cultivars of mint, over 95% of all commercial mint oil is derived from four varieties: peppermint (*Mentha piperita*), native spearmint (*Mentha spicata*), Scotch spearmint (*Mentha cardiaca*) and cornmint (*Mentha arvensis*). Most of the world's peppermint and spearmint is grown in North America, north of the 41st parallel, where 15 hours of warm daylight and cooler nights result in the best oil quality and yield.

Each growing district can provide a distinct profile to a peppermint or spearmint character, much like specific regions develop unique qualities in wine. These nuances can create mint oils that define a signature flavor found only in specialty products. For example, peppermint grown in Idaho or the Kennewick region of Washington state can take on more green, earthy, furan and sweet mentholic properties. Other innate compounds like isovaleraldehyde, 2-methyl butanol and methional enhance chocolate characteristics, while peppermint grown in Oregon's Willamette valley will feature more rich, herbaceous and bold ketonic notes.

Every year it's becoming more challenging to source and supply these district-specific mint oils. Pressures from competing crops, disease, loss of agricultural ground and legacy growers aging out of the business continually threaten the existence of these growing districts. Furthermore, mint agricultural crops are grown in regions confronted with consistently changing environmental factors, water restrictions, soil erosion and other challenges. To overcome these stressors, mint farmers and scientists are working hand in hand to preserve quality and ensure reliable yields and authentic, enjoyable mint flavors are available for generations to come.

Mint Innovation Takes Root

In the mid-1800s, US mint production was mainly in Midwestern states. Then, in the 1950s, a fungal disease called Verticillium wilt took over mint fields across the region, attacking plants and preventing otherwise fertile ground from being used for mint cultivation. This drove mint agriculture to the more favorable growing conditions of the Pacific Northwest. Today, commercial mint is grown primarily in Idaho, Oregon and Washington, although Indiana, Michigan and Wisconsin remain significant producers.

While Verticillium wilt and other crop diseases have an ongoing effect on mint harvests, scientific advancements are helping to circumvent these concerns. Researchers are driven to understand the mechanisms



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Mint has traditionally been used in confectionery, dairy treats and baked goods.



When formulating beverages, flavorists may find that a water-soluble mint extract is preferable to terpene-less mint options.

within the mint genome that promote disease resilience between different mint cultivars and produce desirable molecular attributes and agronomic traits through non-GMO breeding techniques. Some may screen varietals for plant stress hormones that could lead to indicators of drought tolerance, or study mint varietals that have deeper root anatomy to withstand and sustain low or restricted water scenarios.

Though plant resilience is key, a successful crop also must provide consistent qualities, reliable yields and stable supply, year after year. It's also important to do so with minimal environmental impact. Plants with greater disease resistance might mean that farmers can use less water or fertilizer for their crop since they can propagate mint on wilt-infected fertile fields. It might also allow farmers to reclaim land infected with Verticillium wilt and improve soil health by extending plantation life of their mint fields. This combination of sustainability and innovation is essential to the next generation of mint crops.

Exceptional Mint Extracts & Oils

After the harvest comes the next point of mint flavor differentiation – standardizing from crop to crop and season to season to ensure consistent flavor, aroma and quality. Mint oil rectification aids in improving mint oil quality using traditional vacuum and steam distillation techniques. In addition to legacy distillation techniques, newer technology uses continuous distillation for an element of efficiency and takes a gentler approach to heating mint oils. Rectifying a mint oil helps to reduce some of the undesirable top and field note characteristics like sulfur, weedy and fruity green-producing molecules, providing a cleaner, more refined product.

Although flavorists and product developers may find value in both naturals and synthetics, there is no substitute for real mint. Mint essential oils are very complex, containing hundreds of individual molecules that drive incredible nuance. This complexity is nearly impossible to replicate. Mint is also known for its natural cooling sensation, caused by the organic compound menthol.

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Again, while synthetic options are available, natural cooling ingredients may be preferred. Not only do certain artificial ingredients face marketplace hurdles, but many shoppers are also seeking out naturals on ingredient labels.

The art and science of flavor creation helps capture the full spectrum of mint characteristics. Natural mint blends and flavors are hand-crafted by experts to create intricate sensory experiences that consumers are sure to remember.

An Unforgettable Sensory Experience

Mint can be a polarizing flavor, with some finding it overwhelming in foods and beverages, so it's necessary for flavorists and formulators to perfect their application rates. At just the right amount, peppermint adds an element of cool refreshment and spearmint delivers a soothing sweetness without overpowering a product. Mint has traditionally been used in confectionery, dairy treats and baked goods. Surprisingly, mint is still considered an emerging flavor in the beverage space.

When formulating beverages, flavorists may find that a water-soluble mint extract is preferable to terpeneless mint options. Water-soluble mint extracts can be added to clear beverages without clouding or causing other formulation issues typical to a traditional terpene-rich mint oil, and they have the benefit of a more complex flavor profile. This is a win for ready-to-drink (RTD) mojito and mint julep cocktails, as well as non-alcoholic sparkling hop waters with mint, watermelon mint flavored waters and lavender mint lemonades.

Mint has even more delicious potential in other types of applications, so it's encouraging to see flavorists, culinary artists and chefs being adventurous and exploring new options. Influence from Middle Eastern, north African, Mediterranean and southeast Asian cuisines is bringing mint to more savory dishes, such as grilled lamb chops with cilantro mint chutney; mint pesto made with walnuts, fresh mint, olive oil and feta cheese; Vietnamese spring rolls stuffed with fresh mint, rice noodles, lettuce, carrot, cucumber, pork belly and shrimp; and roasted artichoke hearts with parsley and mint.

From a consumer perspective, mint is perceived as a "mood food," with attributes both invigorating and relaxing. Consumers may turn to the fresh, bold taste of peppermint for a sense of renewed focus and mental clarity, while spearmint is perceived to have calming properties for the mind, which is thought to assist with sleep or stress relief. Mint is also linked to support for digestive health. This range of associations to physical and emotional well-being and mint's versatile flavor profile enable an amazing opportunity for brands to guide consumers to products that nourish their mind and body.

Sustaining the Future of Mint

Mint will always be faced with challenges, from threats of disease and declining availability of growing district oils to changing market and regulatory conditions. These factors put pressure on brands to maintain the quality and cost of their mint-flavored products.

Innovation is key to ease these pressures. Agronomy is dedicated to finding stronger yielding mint varietals with desirable traits and attributes, and unique mint cultivars with the ability to produce high-value raw materials at high concentrations. Growers are embracing land management practices that reduce the environmental impact of mint cultivation. Their commitment to the land and quality mint crops go back generations and, with ongoing advancements, the industry can continue to support this for generations to come.

p&f+



FRESH PERSPECTIVES IN ORAL CARE

How the oral care industry is adapting to new challenges, technologies and consumer preferences.

BY G. KAVIN MORGAN, director, global health care flavor organization, P&G



G. Kavin Morgan

Consumers experience a wide range of issues in the oral cavity, but now more than ever they understand how oral health is directly linked to whole body health.

Image by Elvira at Adobe Stock

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The global oral care landscape is an ever-changing space of new consumer learnings, technologies, and challenges. These transformations are prompted by consumers' continual evolution in their dental needs and wants, technologies that are efficient in delivering and reinforcing the benefit promise, and new ingredient regulations.

Consumers experience a wide range of issues in the oral cavity, but now more than ever they understand how oral health is directly linked to whole body health. This equates to their demand for products that work faster whether it is for whitening, gum deterioration, or plaque removal. To combat these needs, the oral care shelf is more diverse than ever as consumers' needs vary between a single to a multi-benefit offering.



Freshness remains a top deliverable in both paste and rinses, and cooling agents have carried the bulk of the responsibility to deliver the freshness aspect.

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Though there are products to address these needs currently, most oral care products take a sustained-usage period for individuals to realize their effectiveness. Oral care companies have paid particular attention to this need to create products that work faster than ever to quench the consumer's thirst for efficacious speed; none more relevant than in the whitening space where you can see the difference after one day.

However, new chassis chemistries also can bring taste challenges, such as metallic, bitter, saltiness, and astringency to name a few. The understanding of receptor activation of these materials and development of flavor maskers and blockers to counteract these taste attributes will play a critical role in oral care products.

Freshness remains a top deliverable in both paste and rinses, and cooling agents have carried the bulk of the responsibility to deliver the freshness aspect. But their importance goes even further now to help drive home the product's benefit promise. No longer is just "length" of cooling after brushing the main differentiator for freshness, but also "when" (during brush / after expectoration) and "where" (hard/soft tissue, retro-nasal) are also key drivers. Understanding the cooling equation per benefit space is key to delighting the consumer and driving home the product's primary benefit. Fortunately, flavor suppliers are tireless in their effort in bringing new cooling technologies to expand the sensate toolbox.

From a flavor character standpoint, mint (peppermint, spearmint, wintergreen) is still king in most geographies. Consumer expectations of mint have also grown while considerable advancements have been made by mint companies and the farming industry. The science of cross breeding of mint varieties is producing plants which can deliver higher oil yield per acre, higher purity, lower watering need, and increased disease resistance allowing for a more sustainable future.

Though advances are being made from a breeding perspective, regulations on flavor ingredients (i.e. Category 6 products) are also increasing as well; specifically, L-carvone the primary ingredient for spearmint flavors. The need for either a 1:1 replacement and/ or a combination of ingredients to deliver a character match will be in high demand. Further adding to the complexity of this situation is the cost of raw materials albeit natural or synthetic due to numerous reasons such as greening, etc.

Trends play an important role in the dentifrice category taking cues from several other business units, such as Food/Beverage and Beauty for example, influencing flavor design, paste aesthetics, and packaging. No region has been more active from a flavor trends point of view than Greater China (GC). The GC consumers have been more willing to explore other dominant tonalities, especially in toothpaste, ranging from floral (rose) to fruity (Yuzu). With this range of character acceptance, Oral Care flavoring for this region contains a perfumery aspect as well.

As consumer needs and desires continually raise the bar, innovation will need to be more frequent, poignant and efficient to change the Oral Care game. This will require agility and mastery to navigate the technology, regulatory & the trends landscapes simultaneously.

OCTAVIA MORGAN Los Angeles Emphasizes 'Thoughtful Formulation, Transparency and Sensory Experience': Q&A with CEO, Creative Director

A member of the 2023 cohort of Ulta Beauty's MUSE Accelerator program, Octavia Morgan built her brand to include signature blends and clean ingredients.



Octavia Morgan, founder and creative director



Morgan shared, "With OCTAVIA MORGAN Los Angeles, my goal is to offer sophisticated, gender-inclusive scents that elevate the senses while respecting well-being and the environment."

Courtesy of OCTAVIA MORGAN Los Angeles

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Octavia Morgan first discovered her love of fragrance at a young age. Her grandmother reminded her, "A woman is never fully dressed until she sprays her fragrance." And she took those words to heart.

After discovering that she had developed a sensitivity to certain ingredients in mass-produced scents, Morgan combined her background as a registered nurse with her passion for fragrance to develop her own brand. OCTAVIA MORGAN Los Angeles offers clean, genderless fine fragrances, home fragrance and personal care products made with botanicals and plant oils.

Perfumer & Flavorist+ spoke with Morgan about how she developed her brand to break away from traditional gender norms in fragrance and becoming the first Black-owned prestige fragrance brand at Ulta Beauty.

Tell me about your journey to creating your fragrance brand.

[Morgan]: My journey to creating OCTAVIA MORGAN Los Angeles was deeply personal, rooted in a lifelong love for fragrance, self-expression, and clean beauty. I've always believed that scent has the power to evoke emotions, transform moods, and tell a story and I wanted to create a brand that allowed people to experience that freely, without limitations.

The idea for my brand emerged when I developed sensitivities to certain ingredients commonly found in fragrances on the market. This experience opened my eyes to a gap in the industry: the need for gender-inclusive, clean, and sophisticated fragrances that didn't compromise on luxury or performance. As someone who personally understands scent sensitivities, it was essential to create high-quality, mindful formulations that could be worn and enjoyed by everyone.

Building this brand has been a journey of resilience, passion, and purpose. From perfecting each scent to launching in Ulta Beauty, every step has been a testament to believing in my vision, overcoming challenges, and staying dedicated to the artistry of fine fragrance. Today, OCTAVIA MORGAN Los Angeles is more than just perfume—it's about empowerment, individuality, and elevating the senses through scent.

You developed sensitivity to mass-produced scents. When did this happen, and how did it affect your career goals in the fragrance industry?

[Morgan]: I developed sensitivities to mass-produced fragrances over time, but it became especially noticeable when I found myself reacting to certain ingredients commonly used in mainstream formulations. The very thing I loved fragrance was starting to cause discomfort, which was frustrating and eye-opening. Instead of stepping away from the world of scent, I saw this as an opportunity to redefine fragrance in a way that was both luxurious and mindful.

This experience shifted my career goals, pushing me to create a brand that prioritized clean, high-quality ingredients while still delivering depth, artistry, and performance. It became my mission to craft gender-inclusive, sophisticated fragrances that could be worn comfortably by anyone, including those with sensitivities like mine. This challenge ultimately led to the creation of OCTAVIA MORGAN Los Angeles, a brand built on the belief that fragrance should be both an indulgence and an experience that feels good on the skin and in the soul.

Why do you think it's important to bring clean fragrances into the market?

[Morgan]: Bringing clean fragrances into the market is essential because consumers deserve options that are



OCTAVIA MORGAN Los Angeles' portfolio includes fine fragrances, home fragrance products and personal care products.

Courtesy of OCTAVIA MORGAN Los Angeles

both luxurious and mindful—without compromising on quality, artistry, or performance. Some traditional fragrances contain harsh synthetics and sensitizing ingredients that can trigger reactions or discomfort, leaving people without scents they can truly enjoy.

For me, clean fragrance is about more than just avoiding certain ingredients; it's about thoughtful formulation, transparency, and creating a sensory experience that feels good for everyone. People are becoming more conscious of what they put on their bodies, and fragrance should be no exception. With OCTAVIA MORGAN Los Angeles, my goal is to offer sophisticated, gender-inclusive scents that elevate the senses while respecting well-being and the environment.

Your scents are also unisex. How do you see the trend of unisex fragrances evolving in the future?

The rise of unisex fragrances represents a broader shift in the beauty industry, one that embraces individuality, self-expression and breaking away from traditional gender norms. Scent has no inherent gender; it's deeply personal and should be about how it makes you feel, not about outdated labels of "for men" or "for women."



On the rise of unisex fragrances, Morgan said, "The future of fragrance is about fluidity, inclusivity, and artistry, where people choose scents based on personal connection rather than marketing."

I see this trend continuing to grow as more consumers seek fragrances that align with their identity and mood rather than being confined to a category. The future of fragrance is about fluidity, inclusivity, and artistry, where people choose scents based on personal connection rather than marketing. With OCTAVIA MORGAN Los Angeles, I wanted to create a collection that reflects this movement offering clean, sophisticated, and gender-inclusive scents that allow everyone to express themselves freely.

Your brand recently launched in Ulta Beauty, making it the first Black-owned prestige fragrance brand in the store. What does this accomplishment mean to you?

[Morgan]: Launching OCTAVIA MORGAN Los Angeles in Ulta Beauty as the first Black and Woman owned prestige fragrance brand is an incredibly meaningful milestone. It represents not only my personal journey as a perfumer and entrepreneur but also a larger moment for representation, inclusivity, and breaking barriers in the fragrance industry.

Fragrance has traditionally been an exclusive space, and this accomplishment shows that luxury, artistry, and clean, gender-inclusive scents can be created by diverse voices and resonate with a wide audience. It's an honor to bring my brand to such a major retailer, and I hope this achievement inspires and paves the way for more Black-owned and independent fragrance houses to thrive in the prestige space.

How can the fragrance industry continue to advocate for Black perfumers and Black-owned brands?

[Morgan]: The fragrance industry can advocate for Black perfumers and Black-owned brands by prioritizing visibility, access, and opportunities at every level. This means elevating diverse voices in fragrance creation, investing in Black-owned brands, and ensuring fair representation in retail partnerships and media coverage.

There also needs to be a stronger commitment to mentorship and funding, as many Black perfumers face barriers in accessing industry resources, from raw materials to distribution channels. Retailers and fragrance houses can create incubator programs, grants, and networking opportunities to help emerging talent break into the space.

Most importantly, advocacy should go beyond a trend; it should be an ongoing effort to create a more inclusive and diverse industry where talent and innovation are valued, regardless of background. p&f+

Courtesy of OCTAVIA MORGAN Los Angeles

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the US-based panel sampled ten ingredients used in flavor applications.



BY CYNDIE LIPKA
Principal flavorist,
Bell Flavors and Fragrances

Flavor Reports: US Edition

Our United States panel of flavorists sampled ingredients such as isobutyl propionate, isobutyl caproate and more.

Isobutyl propionate, natural

Source: Advanced Biotech
FEMA #2212, CAS #540-42-1
Naturally occurring in: Apples, apple brandy, cooked apple, cider, gruyere, parmesan, hops, muskmelon, mushroom, quince, rum, Swiss cheese, vanilla, red wine.
Odor 1%: Slight banana, fruity, pulpy, melon, ripe, wine, fermented, aged rum, pear, browned fruit notes, sweet, candy, estery, fusel, harsh, cheesy.
Taste @ 1 ppm: Low impact, fruity, pulpy, waxy, musty, fermented, light, estery, banana, rummy, apple, skin notes, cheesy.
Taste @ 2 ppm: Pulpy, fruity, waxy, fermented, dark fruit, earthy, fusel, rummy, fusel, fermented.
Possible applications: Isobutyl propionate is an all-around player for fruity type profiles including stone fruits, orchard fruits, banana, and ripe notes

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for honey dew melon and cantaloupe. On the dry-out, there is a hint of that stink associated with cantaloupe when it is nicely ripe. The panel also thought of rum, eggnog and fruit wine profiles. Some cheeses were mentioned such as blue cheese and gorgonzola.

1-Phenyl-1-propanol

Source: Millipore Sigma
FEMA #2884, CAS #93-54-9
Naturally occurring in: Beer.
Odor @ 100%: Ethereal, fecal, slightly choking, slightly floral, phenolic, berry, grape, slightly phenolic, honey, slightly musty.
Taste @ 0.5 ppm: Slightly floral, waxy, rubber, fermented linger.
Taste @ 1 ppm: Floral, rubbery, fermented, almost sour, waxy, over ripe.
Possible applications: The panel didn't find great consensus in applications but thought the following might work well in beer and hops profiles, grape, blackberry, smoke, bacon, chili peppers like ancho and chipotle, honey, florals, Tahitian vanilla, marshmallow and coconut.

Isobutyl caproate, natural

Source: Vigon
FEMA #2202, CAS #105-79-3
Naturally occurring in: Apple, banana, beer, blue cheese, cider, brandy, guava, mango, passionfruit, grape, black pepper, plum, quince, rum sherry, whisky, wine.
Odor @ 1%: Slightly powdery, waxy, fermented, citrus, tropical, pineapple, sweaty, waxy, alcoholic, soapy, sour, musty.
Taste @ 1 ppm: Waxy, pineapple, tropical, fermented, mild.
Taste @ 2 ppm: Tropical, guava, fermented, waxy, astringent, creamy, slight pineapple, slight cheese.
Possible applications: A lovely addition for waxy skin notes to be added to apple, pear and pineapple and also white and green table grapes. It is also somewhat tropical adding to guava, mango and passionfruit. The fermented notes would enhance whiskey, cognac and wine profiles. It would also help cheese profiles such as cheddar, port wine and nacho cheese profiles. There is somewhat of a black pepper note at the end of the profile as well.



Image by isavira at Adobe Stock

Isobutyl caproate can be used to add waxy skin notes for apple and pear applications.



The panel suggested that farnesyl acetate could be used for gin or tequila flavors at the right levels.

Methyl jasmonate

Source: Bedoukian
FEMA #3410, CAS #39924-52-2
Naturally occurring in: Lemon peel, yuzu, peppermint, tea (black, green, oolong, sencha)
Odor @ 1%: Sweet, floral, lemon and tea-like, jasmin, perfumy, indole reminiscent, floral, light, fresh.
Taste @ 1 ppm: Floral, lemon, indole, perfumy, jasmin.
Taste @ 2 ppm: Floral, perfumy, tea, citrus, earthy, very jasmin.
Possible applications: There are ripe, juicy pulpy notes in this floral favorite which would fit into floral aspects of fruits such as red apple, honeycrisp, blackberry, lychee, nectarine, peach, mango, and plum. It has a home in almost all the tea profiles. The lemon like aspect would work pleasantly in citrus blends, lemon, lemonade, lime and grapefruit and orange. There was also a crispness that I found appealing for use in banana peppers and our savory flavorist thought could go into chili pepper.

Farnesyl acetate

Source: Bedoukian
FEMA #4213, CAS #29548-30-9
Naturally occurring in: Grapefruit juice, pomelo, spearmint oil, tequila, whisky.
Odor @ 100%: Piney, fresh, green, weak aldehydic, grapefruit, juniper, woody, heavy, zesty, citrus peel, metallic, myrcene, soapy.
Taste at 5 ppm: Piney, terpenic, waxy, heavy, peely, citrus.
Taste at 10 ppm: Plastic, waxy, peely, earthy, heavy, stemmy, metallic, high, woody.
Possible Applications: This might be helpful in citrus profiles especially in grapefruit or pomelo with its waxy and woody impressions. The pine character could freshen up spearmint and other delicate herbs such as cilantro, and parsley. This might be a new twist for gin or tequila at the right levels. If your impressions of this are more mild and fatty, this might work in a dairy replacer.

Image by MKriegl at Adobe Stock

3-Methyl pentanol

Source: Bedoukian
FEMA #3762, CAS #589-35-5
Naturally occurring in: Leek, brandy (anise, apple, grape, pear, plum), apple, wine (bilberry, grape, guava, jabuticaba, strawberry, litchi), cider, cocoa, fermented fish sauce, fermented soy products, miso, rum, sherry, tomato, whisky, wine.
Odor @ 1%: Musty, alcoholic, dank, dark grape, green apple, fruit skin, choking, ethereal, slightly fermented.
Taste @ 1 ppm: Musty, dank, fermented, throatburn, heavy, sweet, fruity, green, weak.
Taste @ 2 ppm: Fermented, musty, fruit wine, weak, sweet, fruity, green, apple.
Possible applications: Fruit wines were top of the list for ideas along with apple (green type or green notes). The panel thought this would be nice in mezcal and rum. This would be happy and play well in a miso flavor, soy sauce and gochujang.

Tomato dried oleoresin

Source: Robertet
FEMA #n/a, CAS#90131-63-8
Odor @ 1%: Sweet, dried tomato, leathery, molasses, tea leaves, hay-like, dried, brown, slightly caramelized.
Taste @ 0.5%: Acidic, brown, tea, hay, dry, sweet, bitter, slightly earthy, molasses, drying.
Taste @ 1%: Brown, acidic, caramelized, more sour, more bitter, molasses, tomato, tea, hay.
Possible applications: This oleoresin comes to us from France. Reminiscent of the sun-dried version of these, there were a few other ideas the panel came up with for uses. Of course think of everything tomato based and include juice/Clamato type profiles, salsa, and certainly Bloody Mary. I would use this as an umami enhancer for savory, especially vegetarian applications. Our savory guru came up with many more ideas as you might imagine such as Worcester, dried chili peppers, tea, carrot, and concentrated broth flavors.

Lavandin oil abrialis, P&N

Source: Excellentia
FEMA #2618, CAS #8022-15-9
Odor @ 1%: Bright, citrus, dry, "purple", floral, lavender, sweet, pine, woody, camphoraceous, cooling, powdery, herbal, honey.
Taste @ 0.2 ppm: Dry, floral, piney, terpenic, woody, sweet, subtly floral, bitter.
Taste @ 0.5 ppm: Citrus, herbal, thyme, woody, piney, floral, savory, green, rose, sweet, fruity, tangy berry.
Possible applications: This oil originates from Spain and the panel found this to be not only a pleasant and beautiful oil but also found many applications for it. This could be slipped into the hard woody herbs such as thyme, sage, oregano, and rosemary or for Herbs de Provence. We also saw some hints of citrus in this and though grapefruit, lime and possibly lemon and mandarin. We thought of tea blends, earl grey, all the berries, dark cherry and also honey. For savory applications we felt this might add a beautiful note to breakfast sausage, and chili peppers.

Trutaste Hibiscus, 200

Source: Treatt
FEMA #n/a, CAS #n/a
Odor @ 100%: Slightly dry and floral, berry, hay-like, dried tea leaves, dried, fruit.
Taste @ 0.5%: Acidic, weak dried flowers, floral, dark berry, wine, sweet, drying.
Taste @ 1%: Acidic, sour, hay-like, berry, dirty, slightly woody, spice, cooked cherry, berry.
Possible applications: This hibiscus concentrate is a wonderful dark pinky/purply color. The panel felt that this would be useful in mostly berry profiles including strawberry, cranberry, blackberry, raspberry and dark cherry profiles. But also suggested that it might do well in wine (red/rose) and tea profiles. We need to mention that we felt that the real beauty would surface with the addition of sweetness and deliver a Jamaica profile.

Coffee absolute

Source: Bontoux
FEMA #n/a, CAS #8001-67-0
Odor @ 1%: Coffee, burnt, ashy, roasted, toasted, sharp, brown, crisp, brown, nutty, earthy, espresso.
Taste @ 5 ppm: Slightly weak, coffee, light, roasted, brown.
Taste @ 10 ppm: Dark coffee, burnt, toasted, roast,
Possible applications: This absolute contains Arabica beans from Costa Rica with roasting/extraction done in France. Not only would this work well in coffee, especially in espresso or dark roasted profiles, but we could see this in chocolate, and dark chocolate or cocoa. It can be used for toasted and roasted notes in steak and other meat flavors, toasted sesame, tortilla and corn chip flavors. If you work in tobacco flavors, this might be a welcome addition. Higher levels would give a better impact overall.

Consumer Preferences Are Redefining Tobacco's Role in Flavor and Fragrance: Q&A WITH TOBACCO FLAVORIST MANOJ ARORA

The chief perfumer and tobacco flavorist of Sacheerome discusses how trends towards health and wellness are applying to tobacco flavors and fragrances.



Tobacco accords are often used as a warm, rich and slightly sweet base note.

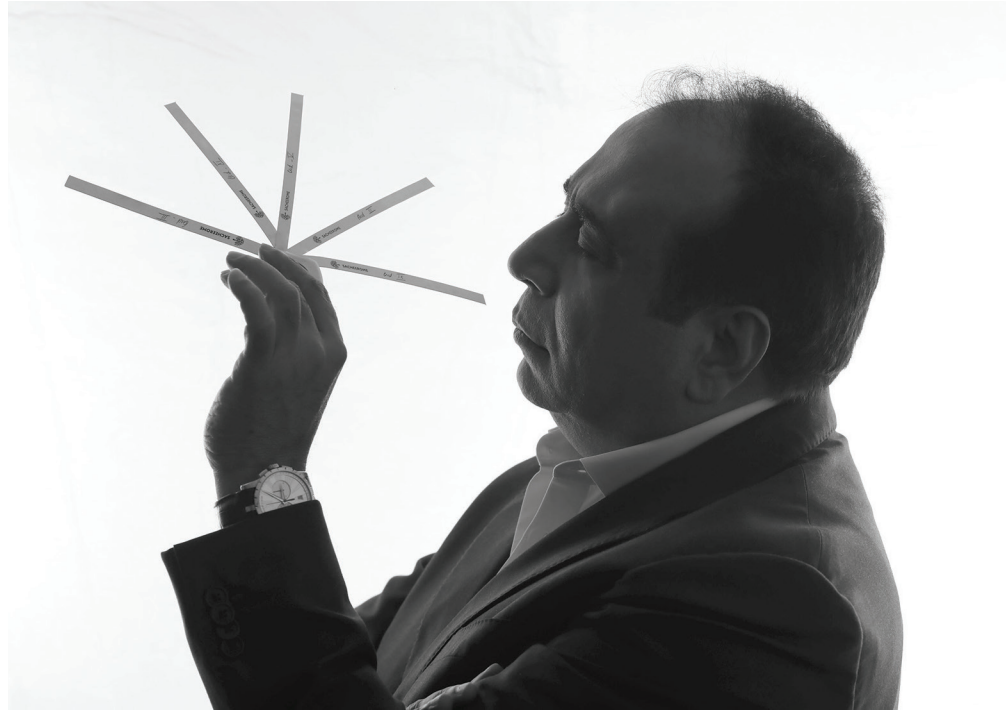
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Manoj Arora is the chief perfumer, tobacco flavorist and managing director of Sacheerome Limited, a globally represented creative house offering innovative, out-of-the-box notes at accords to match best in the world Fragrances and flavors for over six decades.

Manoj Arora represents the third generation of a leading family in the aromatic industry. Under his leadership, Sacheerome has developed industry benchmarks for many mega brands globally. Having mastery over discerning the pulse of his consumers with innovative spirit, he continues to create iconic fragrances and tobacco flavors across categories.

Perfumer & Flavorist+ caught up with Arora to discuss current technologies and trends shaping the tobacco industry and what he sees as the next big trend on the horizon.



Manoj Arora, chief perfumer, tobacco flavorist, managing director, Sacheerome Limited

Courtesy of Sacheerome Unlimited

How is technology shaping the way we create tobacco-inspired fragrances and flavors?

Tobacco has always been associated with masculinity, rejuvenation and a stress buster, right from the ancient times even though its consumers are both male and female. There has been an ever-growing demand for tobacco inspired fragrance, be it in air fresheners, diffusers, fine fragrances, body sprays etc. Tobacco accords are often used as a warm, rich and slightly sweet base note. It's often combined with other elements like vanilla, honey, spices or woods to create sophisticated, deep scents. Tobacco-themed fragrances are often marketed as luxurious and mature, and they appeal to people who enjoy warm, spicy and smoky notes.

Tobacco flavors on the other hand have really grown not only in the traditional products such as cigarettes and sheesha, but in newer electronic formats of smoking and oral tobacco products.

Technology has significantly shaped the way tobacco-inspired fragrances and flavors are created, enhancing both the production process and the end products. Here's how:

- **Bioengineering:** Advances in synthetic biology allow for the production of biotechnologically engineered tobacco molecules or derivatives. These engineered compounds can offer even more precise or novel versions of tobacco scents and flavors that might not exist in nature.
- **Flavor Modulation:** In the world of vaping, digital flavor modulation can help create more customizable tobacco-flavored e-liquids. By adjusting the balance of compounds, such as nicotine, sweetness, or smokiness, technology allows for more tailored, controlled flavors.
- **Market Data:** With access to large sets of data, companies can now more accurately predict consumer preferences and tailor their products to specific demographics. This can lead to better-targeted tobacco-inspired products that appeal to the right audience with precise flavor or scent profiles.

Are there any breakthrough techniques being used in creating more sustainable tobacco notes?

There are better techniques if not breakthroughs which do help a fragrance & flavor house in creating sustainable tobacco profiles, such as precision extraction. With the help of modern technologies like supercritical CO2 extraction, the process of obtaining tobacco scents has become more refined. This method allows for the extraction of essential oils and compounds from tobacco leaves without using heat, which helps retain more of the natural, nuanced aromas.



The focus on wellness and mindfulness is transforming the scenario of tobacco flavors and fragrances.

Another technique, cold-press extraction, involves minimal energy use and ensures that the tobacco essence is captured in its most natural form. It avoids the use of chemicals and high temperatures, which can degrade the aromatic compounds, making it a more sustainable choice.

What are some unique or unexpected ingredients being used to craft premium tobacco profiles?

Sacheerome has always believed in innovation and we are proud to have a number of in house developed captives in our palette across both our fragrance & flavors labs.

These ingredients are green, have a unique profile and can be scaled in abundance depending on the requirements. We as a company use them to give unique offerings to our range of products.

Our teams have been able to offer wonders using our captives and combining them with trendy ingredients such as oud, musk, fougere, rose, kewra (*Pandanus odoratissimus*) khus (vetiver) and Indian spices, especially Kashmiri saffron, cardamon and sandalwood oil.

What shifts in consumer preferences are you seeing, and how are these influencing tobacco-flavored products?

Consumers today are becoming more health-conscious and adventurous with their sense of choices. They want flavors that feel absolutely natural, fresh and functional. This in detail means that buyers have a tendency to go for products that provide benefits beyond just taste. Exotic and fusion flavors, like paan, grape, green apple and sweet rose are trending, as people explore global tastes.

Other than this, sustainability is another key factor that plays a crucial role here because consumers prefer brands that are using ethical sourcing and eco-friendly packaging. These shifts are driving innovation, with companies creating products that not only satisfy one's taste buds but also support a healthier and more mindful lifestyle. Such shifts have also led to companies to rethink their formulations, aiming to deliver products that not only taste and smell good, but also contribute to a healthier lifestyle. Overall, the focus on wellness and mindfulness is transforming the scenario of tobacco flavors and fragrances, with consumers

Image by Michael Barkmann at Adobe Stock

putting a priority on products that support their mental and physical well-being.

How do you see trends in "wellness" and "mindfulness" impacting consumer perceptions of tobacco in flavors and fragrances?

Wellness, mood enhancement, stress relief are the core of the tobacco notes. There was a time when people were not aware of the effect on health, but now wellness trends are at the forefront of all FMCG (fast-moving consumer goods) industry portfolios.

Trends in wellness and mindfulness are reshaping the way people view and choose flavors and fragrances. Today's buyers are more health-freaks and seek products that match well with their balanced and natural way of living. Consumers in today's world are now looking out for products that not only have a good taste or smell but also, make them feel good. They are drawn to those sets of products that possess ingredients which are commonly perceived as clean, natural, and stress-reliever qualities.

How do you approach the challenge of modernizing traditional tobacco scents while preserving their heritage appeal?

Though every creative person will have their own ways of modernizing, while preserving heritage appeal of tobacco scents. I personally believe this can be achieved by following:

- **Balance Tradition with Contemporary Trends:** Modernizing tobacco notes with unexpected combinations Gourmand and Modern Sweetness like vanilla, caramel or cocoa, or spices such as a touch of pink pepper, ginger or cardamom with a modern flair, gives them an edge.
- **Create Custom Tobacco Synthetics:** Modern chemistry can produce tobacco-like notes using synthetics that mimic the richness of the original but with more control over aspects like longevity, intensity and texture. This can also help reduce reliance on natural tobacco, making the fragrance more sustainable.

What advice would you give to flavorists and perfumers looking to explore tobacco-inspired creations in their work?

My advice to fellow flavorists and perfumers looking to explore tobacco-inspired creations in their work will be brief yet bold:

- Understand the depth of tobacco's aroma and flavor profile
- Incorporate modern and unique notes for balance
- Don't shy away from bold or unexpected ingredients
- Stay true to your unique vision

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