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April 2025

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JASMINE ABSOLUTE WITH ANTIOXIDANT COMPOUNDS—THANKS TO RENEWABLE SOLVENT EXTRACTION PROCESS

The new extraction technique allows for higher yields of jasmine absolute using renewable and biodegradable solvents.

Lake & Skye Founder on Acquisition by Tru Fragrance: 'I'm excited to take the company to the next level'

Industry Experts Address Evolving Materials Sourcing Landscape, Challenges in Logistics in F&F

The Impact of Fragrance on Enhancing Pheromones and Attraction

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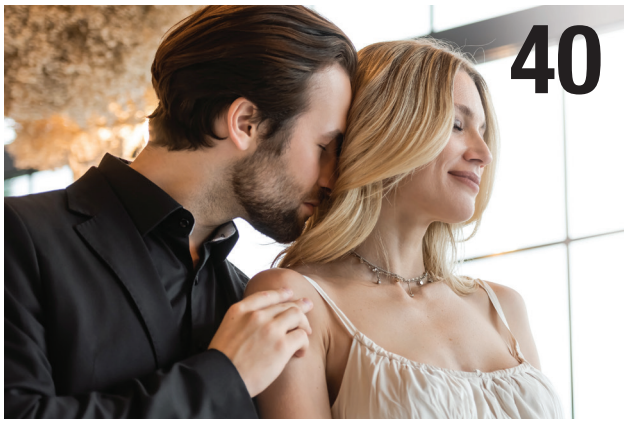


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Perfumer & Flavorist+ (ISSN 0272-2666) is published monthly by **Allured Business Media**.

Subscriptions: Subscribe online: *www.PerfumerFlavorist.com/subscribe*

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Periodicals Postage paid at Carol Stream, Illinois, and additional mailing offices.

Print subscriptions are free to qualified individuals in the United States.
Print subscriptions are not available to those living internationally.

POSTMASTER: Send address changes to *Perfumer & Flavorist+*, PO Box 3009, Northbrook, IL 60065-3009

Change of address: Give both the new and old addresses. Allow two months for a change to become effective.

Missing issues: Claims for missing issues must be made within three months of the date of issue.

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MG INTERNATIONAL FRAGRANCE COMPANY
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“for the love of fragrance”



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The Customer is Always Right



There are several factors that impact consumer purchase decisions, such as price, sustainability, and overall value.

I truly love reading consumer trend reports. I love seeing what people are interested in and what they think are the most important aspects of their purchases. Do they place price ahead of health benefits, or are they looking for something to help them feel better regardless of the cost? It's fascinating to compare the results to my own values when it comes to both flavor and fragrance products. I want to see how my views stack up with the rest of the world. When it comes to my purchases, I just want the most bang for my buck. I want to get the most out of a product that it can offer, and I don't think I'm alone in this sentiment.

Consumer market research is at the heart of all product development, whether it's a new canned coffee with energy-boosting ingredients or a trendy perfume. Developers need to be aware of what consumers are looking for and how they are responding to certain trends in the industry. Without this knowledge, a brand is flying blind into the market.

And consumer preferences when it comes to ingredients are shifting. Consumers want organic and sustainable ingredients used in their favorite products, especially those in the younger generations. They feel a responsibility to help the planet through their purchases.

But price is still the main influencer of purchases, as the effects of inflation can still be felt. Budgets are tighter, so consumers are looking for that magical quality in their products: value. Are they getting their money's worth when they buy a perfume or a body wash or a new flavor of ice cream? Was this worth spending their precious dollars?

Value has been a buzzword for the last year or so, and I don't think that is going away. Consumers want to get the most value out of their purchases. So flavor and fragrance companies need to deliver on this promise of getting more value out of their products.





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NATURE
BY CAMILLE
& CHARLOTTE
× MANE

Our company was established in the birthplace of perfumery, a land intricately entwined with nature, where the art of perfumery first blossomed. From the delicate essence of orange blossom to the sweet breath of May rose to sparkling Timur pepper from Nepal, we choose extraction methods that dovetail ancient craft and leading-edge innovation to bring forth nature's purest treasures and capture the exceptional ingredients that spread their roots across the world.

Camille & Charlotte are the winners of the Capture What Moves photo competition held by MANE.



INDUSTRY INSIGHTS:

Industry Experts Address Evolving Materials Sourcing Landscape, Challenges in Logistics in F&F

Our Industry Insights column asks leaders about their experiences with supply chain navigation and the evolving trends in natural materials sourcing.



Changing geopolitical factors and climate change have put increased strain on ingredient supply chains.

Image by pinporn manosri at Adobe Stock

As factors such as climate change and geopolitical tensions continue to put strain on natural resources, companies in the flavor and fragrance industries are adapting their sourcing strategies.

Perfumer & Flavorist+ reached out to Dean Anthony, chief executive officer of Monova Food Ingredients; Captain T.R. Muralidharan, managing director of Asean Aromatics Private Limited; Bhuvana Nageshwaran, director of F&F at Ultra International Limited; Dimitar Petkov, co-founder and business development manager at Essential Oils and Herbs Ltd; and Lillian Wu, founder of ILITAKAO International to get their thoughts on how this area of their business has changed and when they see on the horizon.

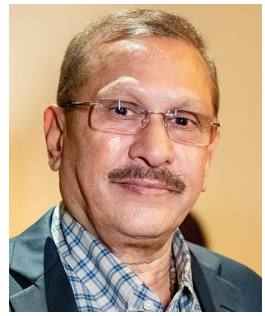
How have you seen the materials sourcing landscape evolve over the last decade in the flavor and fragrance industry?

Dean Anthony [DA]: This is a fascinating subject, as global challenges affect even the most modest of procurement demands. There is a generational decoupling, and in my view, this exacerbates the demands placed on the traceability, materials sourcing, and logistical teams.



Dean Anthony, chief executive officer of Monova Food Ingredients

Capt T.R. Muralidharan [TRM]: Having spent over 30 years in the fragrance & flavor industry, the sourcing of several raw materials have seen new geographical areas coming up. To emphasise on one such example from my 15 years experience specializing in Indian *Santalam album*, famously known as Indian sandalwood, I've seen the sandalwood scene rapidly evolve. India was the primary, undisputed destination for *santalum album*, [but it is] now being cultivated in other parts of the world due to certain factors such as sustainability and legality. We are now seeing the resurgence of Indian sandalwood with active support from the government of India. The government forest department (Mysore and others) are conducting frequent auctions for sale of legal sustainable sandalwood.



Captain T.R. Muralidharan, managing director of Asean Aromatics Private Limited

Bhuvana Nageshwaran [BN]: Over the last decade, materials sourcing in the flavor and fragrance industry has become increasingly dynamic, driven by a greater focus on sustainability, traceability, and quality. There has been a noticeable shift towards more transparent supply chains, with brands and consumers demanding greater visibility regarding the origins of ingredients. Innovations in technology, such as blockchain and advanced data systems, have enabled companies to trace materials from farm to final product more efficiently. Additionally, there has been a greater emphasis on sourcing raw materials responsibly, ensuring that environmental and social standards are met.



Bhuvana Nageshwaran, director of F&F at Ultra International Limited

Dimitar Petkov [DP]: Over the past decade, the sourcing of essential oils has shifted significantly toward sustainability, traceability, and ethical production. Bulgaria, renowned for its high-quality rose and lavender essential oils, has seen producers increasingly adopt organic farming practices and advanced distillation techniques to meet global demand. However, economic pressures and shifting agricultural policies have placed traditional producers under immense strain. Family farms—once the backbone of the essential oil industry—are struggling to survive due to fluctuating market prices, rising production costs, and labor shortages. Many smallholders are being forced to abandon traditional cultivation, leading to significant changes in rural landscapes and livelihoods.



Dimitar Petkov, co-founder and business development manager at Essential Oils and Herbs Ltd

How has consumer demand for natural and organic products impacted your approach to sourcing materials?

Lillian Wu [LW]: Consumers and brands are now more concerned about where raw materials come from, how they are grown and whether the sourcing supports



Lillian Wu, founder of ILITAKAO International

Clockwise, L to R: Courtesy of Monova Food Ingredients; Asean Aromatics Private Limited; Ultra International Limited; Essential Oils and Herbs Ltd; ILATAKAO International



Raw materials like sandalwood have been increasingly challenging to source.

sustainability. For us, this shift aligns with our sourcing philosophy. Our jasmine, osmanthus, and hybrid rose are not just used for fragrance, they are also supplied to tea plantations in Taiwan. Because tea production is regulated under strict food safety laws, every botanical ingredient we source must meet the highest standards of traceability, purity and safety.

[TRM]: The awareness about insecticides and pesticides and their impact on human health and wellbeing has increased significantly over the last few years. So much so that organic cultivation is being taken up on a much larger scale. Consumers are more aware of what now goes into a product and watch trends very closely to have a more transparent understanding of what to buy and how it enhances their experience. Our vendors are now showing keen interest on how natural ingredients are grown and sourced. We are encouraging co-operative societies run by farmer unions to cultivate various essential oil bearing plants in an organic manner.

[BN]: The growing consumer demand for natural and organic products has led to a fundamental shift in how materials are sourced. We are now seeing more investments in organic certification processes, as well as partnerships with sustainable farms and production facilities. It has also led to an increased demand for raw materials that are not only natural but also free from harmful chemicals and GMOs. We are prioritizing organic certifications and working with trusted suppliers who meet high sustainability and ethical standards.

[DP]: The surge in consumer preference for clean-label, natural, and organic products has reshaped sourcing strategies. Bulgarian producers are expanding pesticide-free cultivation and seeking certifications like ECOCERT and USDA Organic to meet strict regulatory and market requirements.

Beyond compliance, industry players are also investing in biodiversity conservation, sustainable harvesting, and fair-trade initiatives. However, for true sustainability, the industry must go beyond certification and ensure that farmers receive fair compensation for their crops, incentivizing them to continue traditional farming instead of switching to more commercially viable but ecologically damaging alternatives.

Image by Madeleine Steinbach at Adobe Stock

How are geopolitical factors, such as tariffs or supply chain disruptions, impacting your ability to source and export materials?

[TRM]: Still tariffs will always have a huge impact on businesses. However, various trade agreements between the countries go a long way in reducing tariffs and are beneficial to the participating countries. For instance, the treaty between India and Japan allows us to export duty-free. Similarly the treaty between India and Indonesia allows us to import without customs duty.

[BN]: Geopolitical factors like tariffs, trade wars, and supply chain disruptions have significantly impacted material sourcing and export capabilities. For instance, tariffs on raw materials or finished goods can increase costs, leading to the need to reconsider supply chain strategies or find alternative sources. Trade barriers or political instability in key sourcing regions have also created a level of uncertainty. In some cases, we've had to diversify suppliers and explore new regions to mitigate risks. Additionally, ongoing supply chain disruptions, such as those caused by the pandemic or extreme weather events, have highlighted the need for greater flexibility and resilience in our sourcing and distribution networks.

What new trends do you anticipate will shape materials sourcing and global trade in the coming years?

[DA]: We must work harder and closer with our raw material manufacturers in partnerships at their locations. Maintaining the highest levels of integrity while protecting our intellectual property is always a challenge, but in today's geopolitical landscape it is more mission-critical than ever. In my experience, the expansion and contraction of market demands is the watermark of our profession. We were good at it back in the day, and even better at it today. I anticipate the optimism of youthful contributors shaping the most positive trade routes yet to be pioneered.

[BN]: In the coming years, I anticipate that sustainability will continue to be a major trend influencing material sourcing. As companies face mounting pressure to reduce their carbon footprints, there will likely be increased investments in sustainable materials and eco-friendly packaging. Additionally, innovations in biotechnology may give rise to new sustainable materials that could transform sourcing practices. Another trend will be the continued rise of regional sourcing, as companies seek to mitigate risks related to international supply chain disruptions. Lastly, the integration of digital tools such as blockchain for greater transparency and traceability will be crucial for meeting consumer demands for accountability in sourcing practices.

[LW]: While consumers are becoming more aware of natural and organic products, I believe that awareness alone isn't enough. "Organic" is often a business tool. Large-scale organic farming dominates the organic industry, shaping certifications, supply chains, and pricing structures to fit profit-driven models. And many "organic" certifications can be manipulated, or selectively applied to fit business needs. Let's be honest—there are plenty of ways to work around regulations in the industry. Consumers assume that an organic label automatically means better, safer, and more environmentally friendly, but that's not always the case.

Small farmers and businesses who genuinely follow organic principles struggle to stay profitable. They don't have the money for certifications, and they can't produce at the scale that big companies do. Even though they might be growing and processing their materials with far more care, they're often left behind in the market. What they do doesn't make financial sense in today's economy.

I think it's time to rethink what "organic" really means. In the future we may move beyond organic certification and prove real transparency in sourcing. By strengthening direct relationships with farmers and small producers to ensure ethical practices. And one more, it's about recognizing and valuing the people who dedicate their lives to cultivating high-quality, sustainable ingredients. By supporting them, we can share this joy with customers who believe in the same values.

p&f+



Ingredients



Springer Cocoon 4105

Biospringer by Lesaffre

https://biospringer.com/en/springer-cocoon/

Springer Cocoon 4105 is a unique yeast-based ingredient to improve flavor and comforting sensation. It adds richness or mouthfulness while improving taste without the need for artificial additives. It boosts the overall taste profile & intensifies meaty notes. Last but not least, it intensifies the perceived salt, fat and umami tastes. Suggested applications include plant-based applications, soups and broths, snacks, processed meats and sauces and dressings.



Onion juice umami flavor

Gourmet Ingredients

https://www.gourmet-ingredients.nl/

Gourmet Ingredients teamed up with Nelson-Jameson to deliver clean-label solutions for food manufacturers. By combining Nelson-Jameson's spices and food processing expertise with Gourmet's premium onion juice concentrates, the collaboration supports innovation and sustainability. This partnership ensures high-quality ingredients, smarter solutions, and a reliable supply—helping brands meet evolving consumer demands.



alpha-Ionene

Penta International Corporation

www.pentamfg.com

Alpha-Ionene (CAS #475-03-6, FEMA #4264) contains a flavor profile described as floral, green and slightly woody with a hint of citrus. It is often used to enhance the freshness and natural aroma in perfumes and food products due to its pleasant, slightly sweet fragrance. Our material is Kosher and Halal Compliant.

Isobionics natural alpha-bisabolol 99

BASF SE

https://www.isobionics.com/global/en/product-finder/natural-alpha-bisabolol-99



With 99% purity and extremely low farnesol content (<500 ppm), the product is suitable for a broad range of flavor applications including beverages and food. It has a warm eugenol, carnation, smooth powdery vanilla like, cedar and grapefruit taste, with a weak odor of warm eugenol and carnation, as well as some sweeter vanillin notes, incense, nootkatone, slightly cedar like, lovage, celery and a fenugreek dry out.



Globanone

Symrise AG

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

Musk allrounder Globanone offers musky, cosmetic, creamy, floral facets that support diffusion, warmth, musky skin feel and longevity. It provides lift and works in harmony with the scent. We produce Globanone almost waste-free with the Nobel Prize-winning metathesis technology. Globanone is readily biodegradable and is safe for human use.

Images courtesy of the manufacturers



SensaCraft

Sensient Flavors & Extracts

www.sensientflavorsandextracts.com/mocktails

Flavors and taste technologies that allow you to mimic the taste, burn, mouthfeel and appearance of your favorite cocktails, allowing you to craft the perfect mocktail.



Trithioacetone, natural

Xiamen Bestally Biotechnology Co.,Ltd

www.bestally.com.cn

Taste characteristics at 0.35 to 0.50 ppm: fruity, sulfurous, tangy berry, with cooling catty minty black currant and tropical nuances. Suggested applications include non-alcoholic beverages, burnt meat flavors, and soft candy.





Patchouli Gayo rectified essential oil

MANE

https://www.youtube.com/watch?v=KqowlGVew60&list=PLgDIh7L4kisLRSBkOShtbN0I6JHizlXUL&index=16

MANE patchouli Gayo rectified essential oil (MD) unveils a rich, authentic patchouli profile deepened by earthy, woody nuances. Sustainably sourced from the Gayo mountains in Sumatra, Indonesia, this exquisite extract embodies an irresistible indulgent touch. Crafted through a carefully curated value-chain, it captures the true essence of this unique terroir.

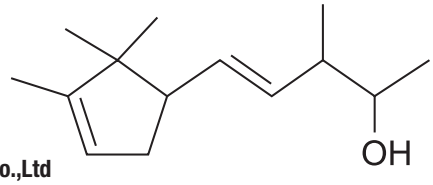


Organic *Litsea cubeba* oil

Berjé Inc.

https://www.berjeinc.com/

Berjé's organic *Litsea cubeba* oil (may chang) is steam-distilled from the tiny fruits of the eponymous *Litsea cubeba* tree, which is grown throughout China and Vietnam. The oil's high citral content imparts a fresh and sweet aroma which softens into a pleasant and fruity dry down.



Muscosandrol

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.



Petitgrain bigaradier essential oil

Agrumaria Reggina s.r.l.

https://www.linkedin.com/company/agrumaria/

Bigarade trees in Sicily flourish in a mild Mediterranean climate, nurtured by mineral-rich soils and marine sediments. Their sun-kissed, moderate-altitude orchards yield vibrant, aromatic fruits with juicy flesh and a balanced flavor. Harvested from December to March, bigaradier embodies the essence of this exceptional terroir. Close to neroli with a deeply green aspect, Petitgrain bigaradier is a refined ingredient. It is characterized by a sweet, herbaceous or even woody note. Petitgrain bigaradier in mainly used in Fragrance: it supports neroli notes in a Cologne or floral composition. With its green and aromatic note, it combiness the freshness of citrus with the texture and longevity of green, floral and even slightly woody notes.



Geranyl formate

Avant Organics

www.avantorganics.com

Geranyl formate (FEMA #2514, CAS #105-86-2) is a naturally occurring ester that contributes a bright, floral, and fruity character to various flavor applications. It possesses a well-balanced profile with dominant notes of fresh rose, lavender, peach, apple, pear, and sweet citrus, often reminiscent of neroli and orange blossom. Subtle green and slightly waxy undertones provide depth, enhancing its versatility in flavor formulations. Geranyl formate is commonly used in citrus, tropical, and floral flavor profiles, adding a refined, perfumery sweetness with a hint of herbal freshness. Its ability to bridge fruity and floral notes makes it a valuable ingredient in applications such as beverages, confectionery, and fine fragrances. Avant Organics provides this material as EU Natural, Kosher, non-GMO, and Halal.

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Natural Flavor Ingredients



Bestally is a pioneer dedicated to developing natural flavor specialties and providing values to our partners since 2003. We focus on sustainable business which includes stable quality, fair prices and continuous supply.We devote ourselves to consistent ESG investment as our social responsibilities.

Natural Lactones

FEMA 2796 Natural Gamma Octalactone, Chiral
FEMA 3091 Natural Gamma Undecalactone, Chiral
FEMA 2400 Natural Gamma Dodecalactone, Chiral
FEMA 2361 Natural Delta Decalactone, Chiral
FEMA 2401 Natural Delta Dodecalactone, Chiral
FEMA 3590 Natural Delta Tetradecalactone, Chiral

Natural Specialties

FEMA 2747 Natural Methional
FEMA 2720 Natural Methyl 3-Methylthiopropionate
FEMA 3310 Natural Methyl Thiobutyrate
FEMA 3343 Natural Ethyl 3-Methylthiopropionate

FEMA 3155 Natural 2-Ethyl-3-Methyl Pyrazine
FEMA 3919 Natural 2-Ethyl-6-Methyl Pyrazine
FEMA 3149 Natural 2-Ethyl-3(5 or 6)-Dimethyl Pyrazine
FEMA 4434 Natural 2-Ethyl-5,6-Dimethyl Pyrazine
FEMA 3208 Natural 2-Methyl-3-Methylthio Pyrazine
FEMA 3132 Natural 2-Methoxy-3-Isobutyl Pyrazine
FEMA 3358 Natural 2-Methoxy-3-Isopropyl Pyrazine
FEMA 3433 Natural 2-Methoxy-3-Secbutyl Pyrazine
FEMA 3964 Natural 2-Acetyl-3-Methyl Pyrazine
FEMA 3134 Natural 2-Isobutyl Thiazole
FEMA 3555 Natural 2-Isopropyl-4-Methyl Thiazole
FEMA 3680 Natural 2-Ethyl-4-Methyl Thiazole

IFF Announces China Scent Exploration Program



The program is designed to address key market challenges across fine fragrance, beauty, personal and home care.

On January 8, 2025, IFF announced the launch of its China Scent Exploration program, a consumer learning initiative designed to create fragrances for the Chinese region.

The program is built on four strategic pillars: historical and cultural imprint, sensorial influences, consumer insights and artificial intelligence. Further, the program will tackle key market challenges in the region, such as evolving preferences for Chinese consumers and the need for culturally authentic fragrances.

"The Chinese fragrance market represents one of our industry's most exciting opportunities," said Ana Paula Mendonça, president of scent at IFF. "By combining artificial intelligence with deep cultural insights for the first time, we're transforming fragrance development in this dynamic market, unlocking unique opportunities for both global and local brands."

Vice president of global human & consumer insights Arnaud Montet added, "Our research captures consumer opinions from tier-1 cities to emerging markets. This unprecedented scale of insights enables us to help brands develop targeted fragrances for specific regions and demographics, reducing development time and costs significantly."

p&f+

Courtesy of IFF

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Solina Acquires Sokol Custom Food Ingredients

On February 6, 2025, ingredient company Solina announced its acquisition of Sokol Custom Food Ingredients. This move is intended to further expand Solina's presence in North America.

Sokol, based in Illinois, supplies custom savory and sweet sauce solutions for the food manufacturing, retail and foodservice channels.

"Sokol's business is. very complementary to Solina USA's business, and it also brings a new specialization in sweet sauces to complement our expertise in savory," said Anthony Francheterre, global chief executive officer of Solina. "Like Solina USA, Sokol is a value-added partner to its customers through a unique blend of manufacturing capabilities, innovation, and ideation, led by a culinary-driven R&D team."

Shawn Sullivan, chief executive officer at Sokol, added, "Solina is the ideal partner to further accelerate the growth opportunities of our talented people, our customers and our overall business strategy. We look forward to collaborating with Solina to cultivate continued and future success at Sokol's Countryside, IL location."

This acquisition marks Solina's fourth in the United States since 2021, and Solina will now have five sites in the United States.



Sokol, based in Illinois, supplies custom savory and sweet sauce solutions for the food manufacturing, retail and foodservice channels.

Nutraceuticals Market Expected to grow to $571.3 Billion by 2029

The global nutraceuticals market is expected to grow at a compound annual growth rate of 6.4% from 2024 to 2029, according to a new report from BCC Research.

Nutraceuticals include products such as supplements, functional foods, and beverages that provide health benefits beyond basic nutrition, such as boosting wellness or supporting digestive health.

As consumers are becoming more conscious of their health and wellness, they are looking for their food and beverage products to provide more value. Key contributing factors to the growth of the nutraceuticals market include the increased demand for dietary supplements and rising healthcare costs.



North America holds the largest market share in the nutraceuticals market, largely due to high demand for health and wellness products.

Report Highlights

- The estimated market size of the nutraceuticals market will be $571.3 billion by 2029.
- North America holds the largest market share.
- The rise of e-commerce and retail chains is driving the growth of processed food, making nutraceuticals more accessible

From top: Courtesy of Solina; Image by Everything by Rachan at Adobe Stock

Estée Lauder Companies Partners with Exuud on Technology Platform for Fragrance Innovation



The Estée Lauder Companies first invested in Exuud in the second half of 2024.

On January 16, 2025, the Estée Lauder Companies (ELC) announced an exclusive agreement with Exuud Inc to pioneer a "smart fragrance expression hardware platform." The technology will be implemented into ELC's fragrance portfolio by the end of 2025.

Exuud has a patented fragrance delivery system known as Soliqaire. Soliqaire uses plant-based, biodegradable polymer blends to absorb and release fragrance, as well as novel hardware platforms that control fragrance release. ELC first invested in Exuud in the second half of 2024, and this exclusive commercial agreement will enable new opportunities for customization, design, and sustainability across ELC's fragrance portfolio.

"At ELC, we're passionate about bringing the best fragrances to consumers and innovating for their unique experiences," said Sumit Bhasin, senior vice president of corporate fragrance research & development, product development and innovation at the Estée Lauder Companies. "We're excited to announce our partnership with Exuud on this cutting-edge technology to support our artisanal craftsmanship and revolutionize how we experience fragrances with more control, consistency, personalization, and sustainability. the breakthrough possibilities for customization in design, fragrance experience, and more are exciting."

Co-founder and chief executive officer of Exuud Abhishek Breja added, "Exuud is on a mission to revolutionize the way people interact with fragrance, and we are excited to join forces with ELC, a global leader in prestige beauty and fragrance. ELC shares our vision of creating immersive and memorable fragrance experiences that enhance the well-being and happiness of consumers. Together, we will bring our breakthrough Soliqaire technology to a wider audience and create new products that combine beauty, precision functionality, and sustainability."

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LBB Specialties Partners with Kerry Group



The new lines of ingredients are intended to elevate the sensory and functional experiences of personal care products.

On February 4, 2025, specialty chemicals and ingredient distributor LBB Specialties announced a partnership with taste and nutrition company Kerry Group.

The two companies will work together to launch a line of emollients, emulsifiers and fermentation-derived actives for skin care, personal care and cosmetics. These new ingredients are intended to elevate the sensory and functional experiences of personal care products.

"We are honored to partner with Kerry, a brand synonymous with technology, innovation and quality in the food and nutrition industry, as their key personal care distributor – launching their technology and expertise into the [personal care] market," said Christopher Nork, senior vice president of LBB Specialties care. "As consumer demand grows for natural, innovative, sensory-rich and sustainable formulations, this partnership aligns with our customer excellence pillar and resources to our clients."

Derek Klaehn, executive vice president of strategy and new ventures at Kerry, added, "Partnering with LBB Specialties is a strategic move that aligns perfectly with our goals. LBB Specialties' extensive network and technical expertise make them an ideal partner to expand the reach of our Kerry portfolio in the North American market. Their commitment to quality, innovation and sustainability mirrors our own, and together we aim to set new science-backed benchmarks in the personal care industry."

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p-Menthen-8-thiol, Natural
FEMA 3700
~ grapefruit, mango

Ethyl Propionate, Natural
FEMA 2456
~ pineapple, rummy

Methylthio-1-Hexanol, Natural
FEMA 3438
~ fruity, kiwi, passion fruit, raspberry, tropical

2-Methyl-4-Propyl-1,3-Oxathiane, Natural
FEMA 3578
~ passion fruit, tropical

Methyl 2-Methylbutyrate, Natural
FEMA 2719
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ZoomEssence Announces Three New Patents



The company's Zooming technology is intended to elevate the consumer experience by delivering quality aroma and taste.

Flavor and fragrance company ZoomEssence announced the receipt of three new international patents in Asia and the European Union for its Zooming encapsulation technology.

Zooming technology is intended to elevate the consumer experience by delivering quality aroma and taste. ZoomEssence sees their intellectual property portfolio as a key competitive advantage to improving the stability of food, beverage and consumer products.

"We are really proud to continue growing our patented intellectual property portfolio," said Dr. Charles Beetz, chief science officer at ZoomEssence. "Our Zooming technology delivers a quantifiable improvement in beverage, food and consumer products, While consumer preference is subjective, measuring the efficiency of delivering ingredients that impact aroma, taste and the sensory experience is not. Science and math prove that our Zooming technology is the most efficient method for flavor and fragrance delivery."

Chief executive officer Steve Hardek added, "Aroma drives the consumer experience. Our patented delivery system technology creates a quantifiable improvement compared to conventional liquids and powders. Zooming concentrates, protects and delivers the flavor and fragrance ingredients consumers prefer, and the science is there to prove it. The future of flavor and fragrance delivery is here and we are excited to partner with our growing customer base to deliver innovative, high-quality products."

This patent marks ZoomEssence's 26th international patent in key markets, including the United States, Canada, the European Union, Asia, Australia and Mexico.

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Courtesy of ZoomEssence

Scentinvent Technologies and XJ Beauty Introduce Innovative Fragrance Formats

On January 29, 2025, fragrance innovation company Scentinvent Technologies announced a partnership with XJ Beauty, a brand architect and accelerator.

The two companies developed four "scent collections" formulated without alcohol, mineral oil, parabens or phthalates. Each format is available in 11 scents developed in partnership with CPL Aroma.

"At Scentinvent Technologies, we see a future where fragrance becomes an integral part of the everyday beauty routines — not just a luxury for special occasions," said Abby Wallach, chief executive officer at Scentinvent.

Scentinvent co-founder Caroline Fabregas added, "By aligning with modern consumer behaviors and addressing trends in the global beauty market and a consumer that wants convenience, we're creating products that fit effortlessly into their lifestyles."

The four formats can be easily customized for brands, allowing for incorporation of their signature scents in new, skin-focused formats. The two companies hope that this will help fragrance brands leverage the success of successful scents in new, innovative ways.

"The growing state of the fragrance industry, combined with the influence of social media and travel culture, has created a demand for products that merge beauty, fragrance, functionality, and individuality, " said Bill Xaing, chief executive officer of XJ Beauty. "Our partnership with Scentinvent Technologies is about meeting those demands and redefining how fragrance fits into modern lives."



Scentinvent Technologies and XJ Beauty collaborated to create four innovative fragrance formats, available in 11 scents.

Product Highlights

- Scent Clear Solid Stick: A clear, translucent, colorful perfume stick that is portable fragrance in a twist-up swivel stick.
- Scent Melt/Balm: A rich, moisturizing balm that combines scent with skin hydration.
- Scent Shimmer: A radiant, fragrance-infused product that adds a luminous and shimmery glow.
- Scent Serum: A lightweight serum that integrates fragrance with skincare benefits on pulse points.

Courtesy of Scentinvent Technologies



PROFILES: CHAVALIA DUNLAP-MWABA

The founder of PinkMahogHany discusses how she approaches challenges in formulations and her process of balancing technicality with creativity.

Chavalia Dunlap-Mwamba, Perfumer/Nose, Pink MahogHany

Can you share a defining moment or significant breakthrough in your career as a perfumer? A significant breakthrough:

Chavalia Dunlap-Mwamba [CDM]: As we celebrate nearly 20 years in the fragrance industry, we reflect on the many defining moments and significant breakthroughs that have shaped our journey. One of our most exciting developments is the upcoming release of our new custom packaging, private collection bottles, and exclusive olfactory experiences. These offerings will feature rare ingredients and materials, making them not only unique but also a true expression of our brand's evolution. What began with a modest collection of just three perfumes has now blossomed into a diverse portfolio of 18 fragrances, with many more to come in the future.

Beyond our own fragrance collection, we've expanded our services to include bespoke scent creation for other brands, helping them craft signature fragrances that align with their identity and values. This has become a pivotal part of our operations, as we continue to build our presence in the industry. In addition, we are proud to announce that we have recently obtained Hazmat certification, ensuring the safe handling and transportation of our products. Our growth has also caught the attention of top publications, with mentions in British GQ Magazine, British Vogue Magazine, and Oracle of Time Magazine UK.

These milestones, especially for a Texas-based brand not yet in retail stores, mark a significant achievement. We are also excited to offer private consulting for brands seeking to elevate their marketing with customized fragrance options that leave a lasting impression.

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

[CDM]: Entering the perfume industry as a self-taught, female perfumer of color presented several significant challenges, primarily surrounding being taken seriously in an industry traditionally dominated by established, often male, figures. Early on, I faced skepticism about my qualifications and expertise, given that I had no formal training and was from a background not widely represented in the industry. The lack of mentorship and guidance was a challenge, but I turned it into an opportunity to develop a strong sense of self-reliance and determination.

I overcame this by immersing myself in extensive self-study, experimentation, and learning from every available resource—whether books, online platforms, or connecting with like-minded individuals. I focused on perfecting my craft and allowing my passion and the quality of my work to prove my expertise. Additionally, I embraced my unique perspective as a woman of color, infusing my brand with authenticity and a commitment to diversity, which resonated with an audience eager for inclusivity.



Name: Chavalia Dunlap-Mwamba

Title: Perfumer/Nose

Company: Pink MahogHany

Location: Longview, Texas

Courtesy of Pink MahogHany

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Another challenge was establishing Pink MahogHany as a brand to be taken seriously. I worked diligently to create a product that stood out, sourcing rare ingredients, and ensuring ethical practices in every step of production. By focusing on innovation, quality, and authenticity, I was able to carve out a respected place in the industry, proving that passion and perseverance can break through even the toughest barriers.

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

[CDM]: Last year, when I was creating our gourmand Valentine's Day exclusive perfume, I encountered an unexpected challenge with the cheesecake note. Initially, the fragrance had a very pronounced, almost overpowering "cheesy" scent that deviated from the sweet, indulgent essence I was aiming for. Rather than the creamy, rich sensation I envisioned, it leaned too heavily into the savory aspect of dairy, making it less inviting and more like a food element than a dessert-inspired perfume. To address this, I had to step away from my typical perfumer's mindset and approach the problem with a new perspective—thinking more like a baker than a perfumer.

Instead of trying to fix the note purely with technical adjustments, I thought about how a baker would balance the dairy in a cheesecake recipe. This led me to introduce more vanilla to smooth out the sharpness, enhancing the sweetness of the cheesecake while reducing its overly tangy, dairy-like character. I also incorporated sandalwood to provide a soft, warm base that grounded the fragrance, adding a creaminess without overwhelming the other elements. The result was a much more balanced and harmonious gourmand fragrance—rich and sweet with a comforting, edible quality that captured the essence of a Valentine's Day treat. This experience reinforced the importance of stepping outside of the technical and embracing creative, cross-disciplinary thinking to solve formulation challenges.

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

[CDM]: Finding the right balance between artistic expression and the technical limitations of perfume formulation is an ongoing process that requires both creativity and precision. My approach begins with the artistic side—I start by blending my ideas without focusing too much on the technical constraints. This allows me to explore the fragrance without limitations and fully express the vision I have in mind. I treat it almost like composing music, where I focus on the flow and harmony of the notes first, creating a narrative or mood before worrying about the practical aspects.

Once I've finished the blend, I shift to refining it. I review the formulation, ensuring it meets the necessary technical standards, such as IFRA regulations. At this point, I adjust the ratios of ingredients as needed to comply with safety standards and longevity requirements,

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making sure the fragrance remains wearable while preserving the core essence of my initial artistic idea.

This method works well for me because it allows me to honor both the creative and technical aspects of the process. Just as in music, where the composition comes first and the instrumentation is refined later, I can give my perfumes the freedom to evolve naturally, while still ensuring they meet industry standards and are safe for consumers.

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

[CDM]: For a perfumer, mastering the technical aspects of fragrance formulation is just as important as developing a refined nose. One crucial skill is learning how to calculate different fragrance strengths, both manually and with the help of digital applications. This skill ensures that a fragrance can be replicated consistently, and that the proportions of top, middle, and base notes are well balanced. Understanding the strength of each ingredient and how it interacts with others is key to creating fragrances that are harmonious and stable over time. Another essential skill is becoming acquainted with the different origins and types of each material. This not only helps a perfumer differentiate subtle variations in scent but also trains the nose to recognize and appreciate the nuances of each ingredient. This depth of knowledge allows for greater creativity and precision in blending, as the perfumer can more accurately predict how materials will evolve in a final composition.

In terms of resources, I found Jean-Carles' method to be invaluable in helping me grasp the fundamentals of perfumery, especially when it comes to structuring compositions. Subscriptions to industry publications such as Perfumer & Flavorist, Happi, Cosmetics & Toiletries, and Nez have continued to be incredibly helpful in keeping me informed on trends, innovations, and best practices, ensuring my growth as a perfumer.

How do you maintain your creativity and stay inspired in such a niche industry?

[CDM]: Maintaining creativity in the perfume industry, especially in such a niche space, requires a conscious effort to stay connected to the world around me. I believe inspiration can come from any moment, and it's important to remain open and observant of everything I encounter. Whether it's a scent in nature, a memory tied to a specific place, or even the emotions evoked by music or art, I actively take note of these moments. Each experience, no matter how small or fleeting, offers something unique that can be translated into fragrance.

What keeps my creativity flowing is recognizing that no two experiences are ever the same. The way a person feels on a given day, the textures and flavors they encounter, or the moods they are in can all contribute to a new idea. This understanding fuels my passion, as it means I can never run out of inspiration—life itself is a constant source of new and untapped material for my compositions. I also draw inspiration from my experiences in music, nature, and even conversations with others. The combination of personal life experiences and broader observations allows me to stay fresh and inventive. Every day offers the potential for a new idea, making the process of creation a dynamic and continually evolving journey.

Have you ever had a fragrance experiment go amusingly wrong? What happened?

[CDM]: When I was first starting out, I got really excited about using only natural ingredients in my fragrance experiments. I ordered a bunch of materials and dove right in, making at least 10 different blends. I was so pumped to see how they would turn out. But when I smelled them all, I was completely floored—they all smelled the same! I couldn't understand what went wrong. I reviewed my notes, trying to troubleshoot, and then it hit me: I had only bought top and heart note materials, totally forgetting about the all-important base notes. It was like I was trying to build a house but forgot to put a foundation under it! I wasn't thrilled with any of the trials, but I kept the blends around for reflection and research.

Fast forward a bit, and I'm out trying a discovery set from a natural fragrance brand. I spritzed one on my wrist, took a deep sniff, and then—the shock—I realized it smelled almost identical to my failed experiment! I couldn't help but laugh at myself. Apparently, what I thought was a fail for my brand was a launch for another. (No noses were harmed in this experiment!)

Sometimes, you've got to take a step back, laugh, and learn from the mishaps—because, as I found out, even mistakes can lead to some unexpectedly familiar (and sometimes humbling) results!

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4-(Methylthio)butan-1-ol has a complicated profile, including meaty, eggy and metallic notes.



BY JOHN WRIGHT
johnwrightflavorist@gmail.com

Flavor Bites:

4-(Methylthio)butan-1-ol in Savory, Berry, Tropical Fruit, Dairy, and Other Flavors

Learn about the diverse range of applications for 4-(methylthio) butan-1-ol.

It is always fun to play with little used ingredients with complex odor profiles. More often than not they are little used simply because they are difficult to use, but that does not mean that they are not interesting. Often it is just an indication of the increasing time constraints we are all subject to.

4-(Methylthio)butan-1-ol (FEMA #3600, CAS Number #20582-85-8) has a complicated profile including meaty, eggy and metallic notes. Meaty and eggy notes frequently work well in combination, but adding distinctly metallic aspects does pose problems, especially outside the savory area.

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.

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Savory Flavors

Beef, Roast: This ingredient is quite bright, and would work best in beef flavors in conjunction with a heavier meaty note, At around 20 ppm it does add a very attractive, slightly "bloody" note.

Cheese: The usefulness of 4-(methylthio) butan-1-ol in Cheddar cheese flavors is much less obvious, but it does work very well in both regular and toasted versions of the profile. Fifty ppm is a starting point, but higher levels can work in more aggressive flavors.

Chicken: 4-(Methylthio)butan-1-ol does not mesh quite so well with chicken flavors, but 10 ppm rounds out the roasted note and helps in the eternal quest to soften decadienal.

Lamb: Lamb flavors can be broadly grouped with beef flavors. Levels ranging from 10 to 20 ppm can give a slightly undercooked expression.

Liver: The same is equally true for liver flavors, with the same 10 to 20 ppm levels of 4-(methylthio) butan-1-ol being very attractive.



The usefulness of 4-(methylthio)butan-1-ol in Cheddar cheese flavors is much less obvious, but it does lend itself to both regular and toasted profiles.

Berry Flavors

Blackberry: The effect of 4-(methylthio)butan-1-ol in most berry flavors is clearly not to function as the primary sulfur note. It is instead an attractive modifier. Blackberry flavors rely primarily on dimethyl sulfide, but 20 ppm of this raw material rounds out the simpler sulfur notes nicely.

Blackcurrant: The function of this raw material in blackcurrant flavors is very similar. Despite the obvious catty notes, dimethyl sulfide is very important. Thirty ppm helps to blend these sulfur notes into a more harmonious complex.

Raspberry: Raspberry flavors are similar to blackberry flavors in respect of sulfur notes, and 20 ppm of 4-(methylthio)butan-1-ol works equally well.

Tropical Fruit Flavors

Banana: Within the broad category of fruit flavors, tropical flavors are clearly the most promising area for 4-(methylthio)butan-1-ol. Banana flavors gain lift and complexity with levels of addition in the region of 20 ppm.

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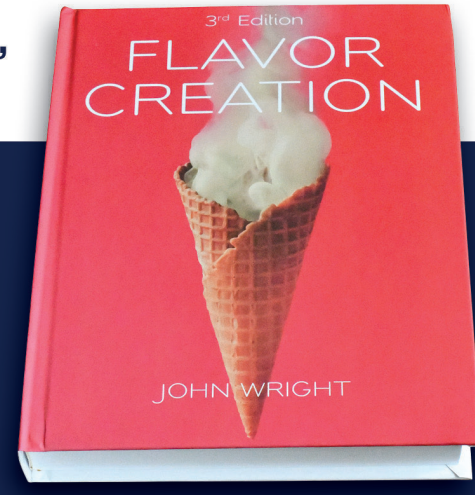


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Guava: 4-(Methylthio)butan-1-ol fits ideally into the complex sulfur profile of guava flavors. Eighty ppm is a very effective level of addition.

Mango: Twenty pm is an attractive level for 4-(Methylthio)butan-1-ol in mango flavors. It is equally effective in both soft and also more harsh skin-oriented profiles.

Papaya: 4-(Methylthio)butan-1-ol adds significantly to the realism of papaya flavors. Forty ppm is a reasonable level of addition.

Passionfruit: The dominant catty notes in passionfruit flavors can already be quite complex, and this is noticeably enhanced by the addition of around 40 ppm of 4-(methylthio)butan-1-ol.

Pineapple: Similar, even slightly higher, levels are equally effective in pineapple flavors. The effect is most attractive in flavors aimed at the character of fresh pineapples.



There is a common thread between obviously savory flavors, such as roast beef, and dairy flavors that involve some element of heat.

Other Fruit Flavors

Apples: Subtle additions are more appropriate in most of the remaining types of fruit flavors. Ten pm of 4-(methylthio)butan-1-ol adds interest and authenticity to all styles of apple flavors.

Apricot and Peach: Apricot and peach flavors both enjoy a hint of catty notes, but this does not alter the optimum level of 4-(methylthio)butan-1-ol, again 10 ppm.

Cherry: Cherry flavors cover quite a wide range of different profiles. Fortunately 4-(methylthio)butan-1-ol is equally interesting in all of them. Ten ppm is a good starting point.

Cranberry: The 10 ppm level is also great in cranberry flavors, giving an effect that is not overtly sulfury, but adding authenticity.

Grape, Concord: The role of sulfur notes in Concord grape flavors is a little more pronounced than in most other fruit flavors. 4-(Methylthio)butan-1-ol can be used alone, but it is more effective when used in combination, again at 10 ppm.



4-(Methylthio)butan-1-ol adds significantly to the realism of papaya flavors.

Pear: Ten ppm is also a great starting point for this raw material in pear flavors. The effect is very similar to that in apple flavors, increased authenticity.

Dairy Flavors

Butter, Fresh: 4-(Methylthio)butan-1-ol adds an interesting sulfury edge to butter flavors. Levels vary from five to 20 ppm.

Cream, Fresh: The same 20 ppm level of addition works equally well in fresh cream flavors.

Milk: There is a common thread between obviously savory flavors, such as roast beef, and dairy flavors that involve some element of heat. This is most evident in condensed milk flavors. 4-(Methylthio)butan-1-ol can be effective at levels ranging from 30 ppm up to 100 ppm, depending on the style of flavor.

Other Flavors

Brandy: This is not a raw material that has an obvious home in spirit flavors. Nevertheless, it is interesting to try in brandy flavors at up to 10 ppm.

Butterscotch, Caramel and Toffee: With these three flavors we see a connection to the impact of 4-(methylthio)butan-1-ol in condensed milk flavors. Ideal levels vary, but are generally in the range from 20 to 40 ppm.

Molasses and Brown Sugar: Lower levels of 4-(methylthio)butan-1-ol are better in these profiles. Ten ppm works well in most brown sugar flavors. Higher levels can apply to more aggressive molasses flavors.

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Clockwise from top: Image by Svetlana Kolpakova; baibaz at Adobe Stock

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[3] Regular checks performed according to DIN-EN 15662. List of commodity/pesticide combination can be made available upon request.

JASMINE ABSOLUTE WITH ANTIOXIDANT COMPOUNDS—THANKS TO RENEWABLE SOLVENT EXTRACTION PROCESS

The new extraction technique allows for higher yields of jasmine absolute using renewable and biodegradable solvents.



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Emission factors of Jasmine Conscious absolute is 87% lower than that of conventional absolute obtained by extraction with hexane.

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BY VANESSA GONNOT, process team manager; AGNÈS DUPRAT, heath & wellness natural ingredient lead; GUILLAUME FRÉMONDIÈRE, R&D naturals crop science team leader, scent R&D, Naturals IFF by IFF



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In 2017, International Flavours & Fragrances (IFF) started to work on alternatives to petrochemical solvents to extract absolutes. Among the new range of absolutes offered by LMR is Jasmine Conscious Absolute, in which antioxidant compounds have been identified.

The search for renewable solvents & a greener extraction process

In India, LMR Naturals by IFF has set up a natural innovation platform with a trusted partner for over 30 years, with whom a Fair for Life Certification has been obtained (**F-1**).

Fair for Life-certified supply chains are an important step towards respect of both people and biodiversity, with the control of an external accredited body (Ecocert) that will lead audits at source on social and environmental topics. Moreover, traceability of the raw material is key to ensure that good practices are applied to the certified supply chain.

Committed to do more good for the planet and the people, LMR's expert team applied the principles of green chemistry to the extraction of natural raw materials by minimizing the use of hazardous substances and the environmental impact.[1] The research team has screened renewable solvents that meet a high standard set of eligibility criteria: 100% renewable carbon origin, 100% biodegradability, low toxicity, safe at industrial scale and lower carbon footprint.

In 2023, two IFF patents were granted in France to produce absolutes with new proprietary extraction processes. Through these processes, petrochemical solvents have been replaced by 100% renewable and biodegradable solvents that are safer for humans and the environment.[2] Apart from the use of renewable solvents, these processes are authentic absolute processes

F-1 Harvest of Jasminum grandiflorum in India

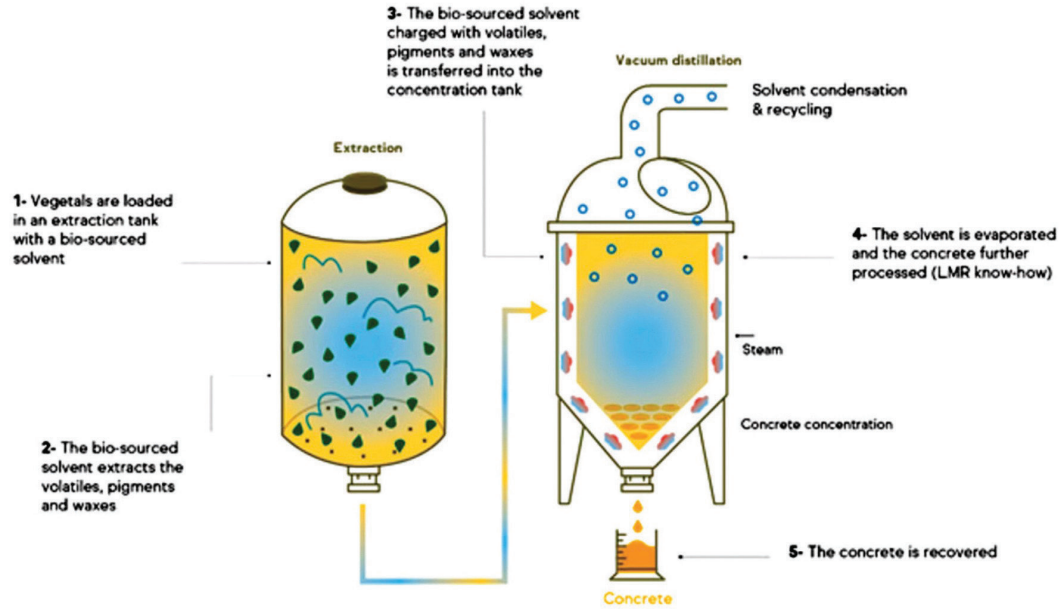


Courtesy of IFF

F-2 Extraction of LMR Jasmine Conscious concrete in India



F-3 Extraction process with 100%-biosourced solvent



Courtesy of IFF

that are now implemented with industrial partners throughout the world (extraction of the raw material **F-2** and **F-3**).

One of these processes allows LMR to produce absolutes that are certified organic and can be labeled with geographical indication "Absolute Pays de Grasse."

Since 2020, LMR has partnered with Carbone 4 in an ambitious project to quantify carbon footprint over scopes 1, 2 and 3 for each ingredient produced. The emission factor of Jasmine Conscious Absolute is 87% lower than conventional absolute obtained by extraction with hexane, thanks to 30% lower emission of the renewable solvent itself and higher extraction yield.

Indeed, this more renewable process allows researchers to make the most of the plant, and this is particularly true for *Jasmine grandiflorum*. Only 145 kg of flowers are needed to produce 1 kg of Conscious Absolute, while 720 kg are necessary to produce 1 kg of conventional jasmine absolute. The higher yield can be explained by a higher polarity of the renewable solvent used.

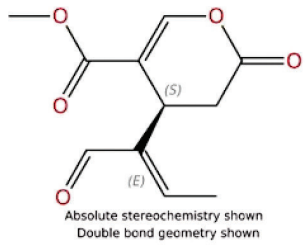
Because the polarity of the solvent used is different from hexane's, the analytical composition, and consequently the olfactive signature of the new Jasmine Conscious Absolute, are slightly different from that of conventional absolute, with less linalool, benzyl acetate, indole, and benzyl benzoate.

The new Jasmine Conscious Absolute has a characteristic white floral signature, but the typical fruity, green, and spicy facets are slightly toned down, giving it a more delicate and petal feel. On the dry down are found the solar and slightly animalic notes, typical of jasmine flowers.[3]

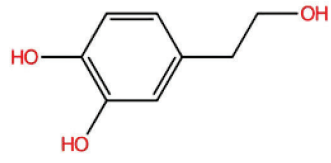
An unexpected analytical discovery

One of the major differences in the analytical composition analyzed by gas chromatography comes from compounds that were not extracted by petrochemicals: 13-16% of hydroxytyrosol, a polyphenol, but also elenolide isomers and elenolic acid ethyl ester

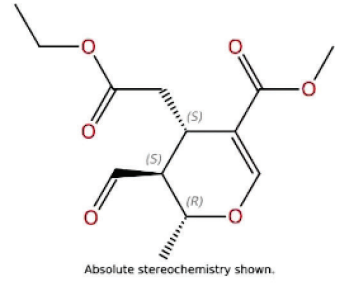
F-4 Oleuropein and its derivatives identified in new Jasmine Conscious Absolute



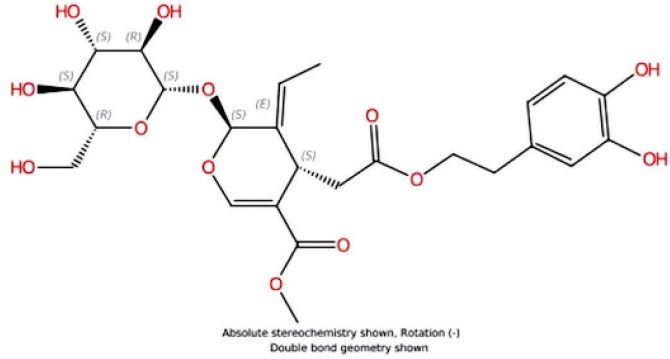
Elenolide
(24582-91-0)
3 isomers identified in LMR
Jasmine Absolute Conscious



Hydroxytyrosol
(10597-60-1)



Elenolic acid ethyl ester
(2097513-90-9)
4 isomers identified in LMR
Jasmine Absolute Conscious



Oleuropein
(32619-42-4)

Courtesy of IFF

F-5 ***Jasminum grandiflorum*** **and Olive tree (*Olea europaea*) both belong to the Oleaceae family**



isomers in lesser amounts, all derived from hydrolysis of oleuropein (**F-4**).

Apart from hydroxytyrosol that has been described in a methanolic extract of dried jasmine aerial part, these compounds are new in jasmine absolutes and do not contribute to the characteristic jasmine odor, but are well-known constituents of olive oil.[4]

Unexpectedly, even if they look quite different from an anatomic perspective (**F-5**), *Jasminum grandiflorum* and olive trees (*Olea europaea*) both belong to the Oleaceae family and share biosynthetic routes to produce antioxidant phenolic compounds.

This interesting antioxidant activity was also assessed internally on new Jasmine Conscious Absolute and the other absolutes of the Conscious extracts collection.[2]

Efficacy testing

The antioxidant properties of the new Jasmine Conscious Absolute were evaluated compared to a conventional absolute using *in-tubo* testing. New Jasmine Conscious Absolute showed a 10-fold better activity than the conventional absolute for the inhibition of DPPH (2,2-diphényl-1-pycrylhydrazyle) radical with IC50 (half-maximal inhibitory concentration) of 0.0025% and 0.032%, respectively.

New Jasmine Conscious Absolute also showed a better activity than the conventional one for the inhibition of lipid peroxidation of linoleic acid in presence of oxygen catalyzed by hemoglobin. With an IC50 of 0.03% compared to 0.06% for the conventional absolute, it is twice as active.

These results could be linked to a higher percentage of total polyphenols expressed in gallic acid (Folin-Ciocalteu method) in the new Jasmine Conscious Absolute (19.6%) versus the conventional one (3.6 %).

New Jasmine Conscious Absolute was also tested in-vitro for its ability to inhibit the ROS (radical oxygen species) production after pyocyanin induction in NHDF (normal human dermal fibroblasts). **F-6** shows that it significantly inhibits ROS production from 10-4 %. At 10-3 %, the new Jasmine Conscious Absolute inhibits 38% of the ROS production.

These results show that the new Jasmine Conscious Absolute has a better antioxidant profile than the conventional one. Its capacity to inhibit ROS production in NHDF leads to a good potential to limit skin oxidative stress.

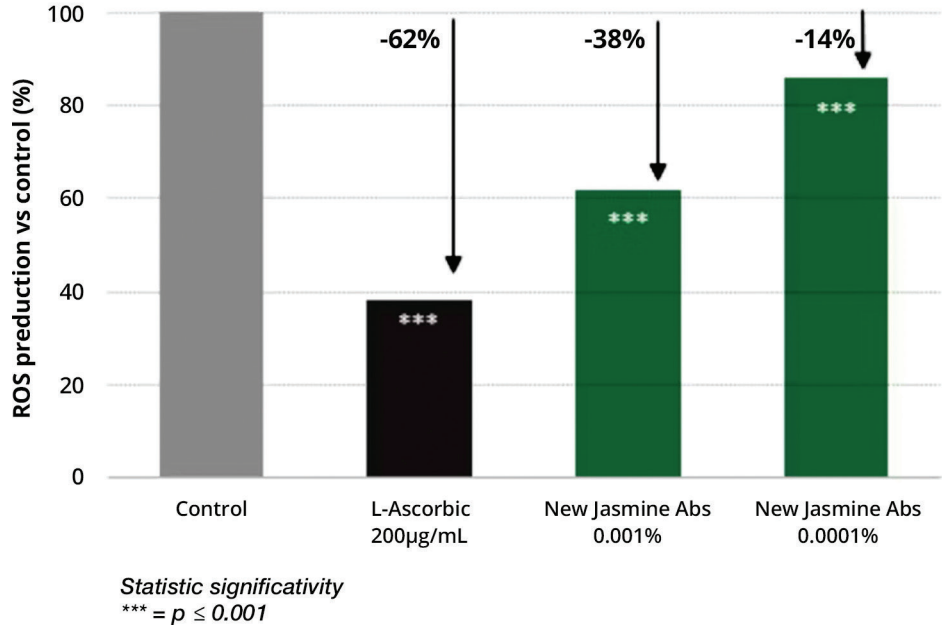
The new Jasmine Conscious Absolute inhibited the production of skin mediator IL-8 following induction with pro-inflammatory cytokine IL-1α (-22% at 10-4%) in NHDF *in-vitro* culture, showing calming and soothing properties.

The LMR Conscious Collection now comprises five absolutes obtained with renewable solvents, and more are in development. The new absolutes offer reinvention of classic absolutes known for decades, highlighting other olfactory facets constitutive of the extracted flowers, that can be exploited in fragrance creation. While the main objective of this collection is to reduce the environmental impact, new applications such as cosmetic uses present advantageous benefits over conventional absolutes, which offer a bright future for these new more sustainable ingredients.

Courtesy of IFF


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F-6 Inhibition of ROS production in NHDF after pyocyanin induction, in-vitro



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Lake & Skye Founder on Acquisition by Tru Fragrance:

'I'm excited to take the company to the next level'

Courtney Somer, founder and chief creative officer of Lake & Skye, discusses her education in wellness and what this acquisition means for her brand.



Courtney Somer, founder, chief creative officer

On January 8, 2025, fragrance and wellness brand Lake & Skye announced that it had been acquired by Tru Fragrance. Tru Fragrance & Beauty first made a minority investment in Lake & Skye in 2018. Company officials hope that this acquisition will help continue Lake & Skye's growth and portfolio expansion.

Founded in 2015, Lake & Skye is a mission-driven clean fragrance brand focused on the intersection of wellness and scent. Founder and chief creative officer Courtney Somer suffered a health scare early in her adulthood, which set her on a course to learn about several methods of healing, including aromatherapy, yoga and nutrition.

Perfumer & Flavorist+ spoke with Somer about the inspiration behind the brand's signature scents and how the acquisition will impact future growth.

Can you describe how your health scare in your 20's led you to alternative therapies such as aromatherapy and yoga?

I faced a challenging period in my early twenties involving multiple doctors and procedures due to ovarian cysts that required surgery twice. During this time, I sought the guidance of an intuitive healer, which sparked the beginning of my 10+ year holistic journey. Initially, I delved into this exploration to enhance my own wellness, which led me to study various modalities including aromatherapy, yoga, breathwork, and more. I also participated in weekend retreats and immersed myself in holistic nutrition, meditation, Reiki, and other wellness practices. I wanted to learn it all. I consider myself a student of the world, constantly learning.

How are your fragrances inspired by these alternative therapies?

I learned the most from my aromatherapy teacher and quickly turned to essential oils for healing. This then inspired me to create products that could help others heal, just as they had helped me. I started with creating 11 11 as a roller ball, designed to create a calming presence and boost confidence.

Why do you think it's important to be at the center of the Venn diagram between wellness and fragrance?

At the center is the tie between emotional and mental well-being. Fragrance has a profound effect on emotions and mental states. Certain scents can support relaxation, reduce stress, or help with focus. By combining wellness and fragrance, products can be designed to support mental health and emotional balance, creating a more holistic sense of well-being.

Courtesy of Lake & Skye

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Lake & Skye was founded in 2015 as a mission-driven clean fragrance brand.

Courtesy of Lake & Skye



Somer shared, "Fragrance has a profound effect on emotions and mental states."

11 11 has already established your brand among consumers. Are there any plans to expand this product lineup?

The 11 11 Collection is consistently evolving and now has three unique variations within the scent family:

11 11: This signature scent, inspired by the energy of that magical time, blends an ethereal mix of white ambers to create a clean, uplifting fragrance. It's a go-to for those seeking a scent that is both modern and timeless. (Available in EDP, purse spray, and an oil rollerball)

11 11 Azure: A refreshing twist on the classic 11 11 scents, featuring water accord, lotus blossom, blue amber, and musk (Available in a full-sized & travel-size variation and an oil rollerball)

11 11 Vanilla: An expansion of Lake & Skye's iconic 11 11 collection, this fragrance is a soft, warm, and slightly sweet twist on the classic scent (Available on Lake & Skye and exclusively on Ulta in a full-sized & travel-size variation alongside an oil rollerball

Lake & Skye just announced the acquisition by Tru Fragrance & Beauty. How will this acquisition set your company apart from the competition?

The capital infusion and closer alliance with Tru Fragrance will enable Lake & Skye to more aggressively grow its consumer base, support national retailer partners including Ulta, Nordstrom and Blue Mercury, and delight loyal and new consumers with market-leading fragrance innovation.

What has the collaboration between yourself and Tru Fragrance been like over the past 5 years?

Tru Fragrance has been a longtime partner of Lake & Skye, making a minority investment in the brand in 2018. We have since grown our partnership while expanding the brand. They have been a true and trusted partner and I'm excited to take the company to the next level.

What are your hopes and goals for Lake & Skye in the coming decade?

For the brand's future, I would love to collaborate with other brands, further expanding Lake & Skye's reach and impact.

Any product launches you can tell our readers about?

I am highly intentional with each product launch, only introducing what I feel strongly about. While fragrance remains Lake & Skye's primary focus for the foreseeable future, I am excited to expand into body sprays in 2025. I truly love how versatile Lake & Skye is, fitting seamlessly into different environments, which is why they're available at a range of places like ULTA, INNESS, Moon Juice, and Nordstrom.

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Courtesy of Lake & Skye


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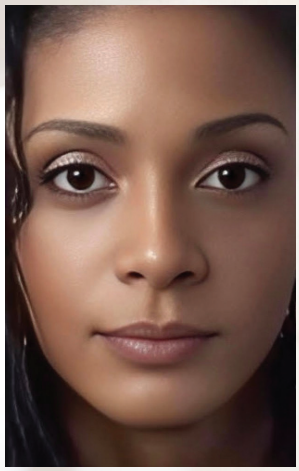
Pheromones, the natural chemical signals our bodies emit, can influence how we perceive and connect with others, especially in romantic contexts.

Image by LIGHTFIELD STUDIOS at Adobe Stock

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THE IMPACT OF FRAGRANCE ON ENHANCING PHEROMONES AND ATTRACTION

Fragrance developers are experimenting with natural and synthetic pheromones in their formulations, and new research indicates they're onto something.



Shanna Bynes Bradford, founder, CEO, formulator, Grow Out Oils

Fragrance has an undeniable power to captivate our senses, but did you know that it might also play a pivotal role in attraction? Pheromones, the natural chemical signals our bodies emit, can influence how we perceive and connect with others, especially in romantic contexts. Recent studies suggest that carefully crafted fragrances can enhance these chemical signals, offering a tantalizing avenue for boosting sexual attraction. Research has indicated that certain fragrance compounds can amplify the effects of pheromones, making them an exciting tool for those looking to enhance their romantic allure (PubMed, 2023).

The Magic of Scent

Think back to a moment when a particular scent instantly transported you to a memory or made you feel a rush of excitement. That's the magic of scent at work! Pheromones, though subtle and often undetectable, can significantly impact our interactions with others. They are the invisible signals that our bodies release, shaping attraction and social dynamics (National Library of Medicine, 2023).

New research indicates that specific fragrance compounds can amplify the effects of these pheromones, making them an exciting tool for those looking to enhance their romantic allure. By incorporating either natural or synthetic pheromones into fragrances, perfume developers are creating products that may help individuals attract partners more effectively (American College of Healthcare Science, 2023).

The Science Behind Fragrance and Attraction

While the relationship between fragrance and attraction may sound somewhat mystical, it is grounded in science. The olfactory system—the part of our brain responsible for processing smells—plays a crucial role in our emotional responses and attraction. When we encounter a pleasing scent, our brain releases dopamine, the "feel-good" hormone, which can lead to feelings of pleasure and attraction. Moreover, pheromones interact with the vomeronasal organ (VNO), a small structure in the nasal cavity that is thought to detect these chemical signals. This interaction can trigger subconscious responses that influence our attraction to others.

The Role of Context in Attraction

It's worth noting that context plays a significant role in how fragrances are perceived. For instance, the setting in which a fragrance is worn—whether it's a casual outing or a formal event—can influence its effectiveness. Additionally, seasonal changes can affect scent preferences; lighter, fresher fragrances may be more appealing in warmer months, while deeper, warmer scents might resonate during fall and winter.

Understanding these nuances can help consumers choose the right fragrance for the right occasion, enhancing their chances of making a lasting impression.

Future Directions in Fragrance Development

As the fragrance industry continues to evolve, there's remarkable potential for innovation at the intersection of science and scent. Brands are increasingly tapping

Courtesy of Grow Out Oils



The olfactory system—the part of our brain responsible for processing smells—plays a crucial role in our emotional responses and attraction.

into research to create fragrances that not only smell delightful, but also enhance personal allure. This fusion of artistry and science could lead to the emergence of more sophisticated pheromone-infused products tailored to specific demographics, occasions, or even personality types.

Moreover, advancements in technology, such as artificial intelligence and machine learning, could allow for deeper insights into scent preferences and their psychological impacts. Imagine a future where customized fragrances are developed based on individual pheromonal profiles, optimizing attraction based on personal chemistry.

The Ethical Considerations of Pheromone Marketing

With the growing interest in pheromones and attraction, ethical considerations come into play. It's essential for companies to market these products responsibly, ensuring that consumers understand the limitations and variables involved. While pheromones can enhance attraction, they are not a magic solution for romantic success. Clear communication about the potential effects and the importance of personal connection is vital to avoid unrealistic expectations. Ethical marketing practices can foster trust and transparency, ultimately leading to a more informed consumer base.

Embrace the Power of Scent

In conclusion, the relationship between fragrance and attraction is a fascinating area of exploration that combines science, emotion, and personal experience. By understanding how scents can enhance pheromonal signals and influence attraction, individuals can make informed choices about the fragrances they wear. Whether you're looking to boost your romantic appeal or simply enjoy the confidence that a signature scent can bring, the power of fragrance is undeniable.

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Rethinking Naturals:
How Thoughtful Formulation is Changing Fragrance Development

Natural isolates extracted from plants, fruits, and essential oils combine the richness of natural fragrances with regulatory ease.

BY ASHLEE POSNER, CEO, Lucént





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While essential oils have long been at the heart of natural perfumery, their complex chemical compositions can introduce regulatory headaches and potential allergens.

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The conversation around natural fragrance is evolving. Consumers love the idea of botanical, plant-based, and "clean" scents, but today's industry challenges—from regulatory pressures to rising skin sensitivities—require a more strategic approach to natural formulation.

While essential oils have long been at the heart of natural perfumery, their complex chemical compositions can introduce regulatory headaches and potential allergens. Now, fragrance developers are rethinking how to create authentic, nature-inspired scents without the drawbacks.

Enter natural isolates—single-molecule components extracted from plants, essential oils, or fruits that offer the best of both worlds: the richness of naturals with greater safety, consistency, and compliance.

The Challenge With Whole Essential Oils

Essential oils are celebrated for their complexity, but their chemical makeup is unpredictable and with rising climate and crop challenges their variability is also a challenge. Many contain components flagged by IFRA regulations or retailer "no-lists," due to potential skin irritants, like limonene, linalool and eugenol, regulatory restrictions requiring reformulation and batch-to-batch inconsistencies due to seasonal variations in crops. For brands looking to scale and ensure compliance across global markets, this can create delays, added costs, and reformulation challenges.

A Transparent Approach: The Power of Natural Isolates

Rather than relying on whole essential oils with all their complexities, fragrance formulators can extract specific desirable molecules, called natural isolates, to create safer, more stable, and still naturally inspired scents.

For example, instead of using a full citrus essential oil (which may contain high levels of limonene, a common irritant), a perfumer can use octanol, a natural isolate that delivers a fresh, green, slightly waxy note—without the regulatory concerns.



By leveraging natural isolates, fragrance developers can preserve the richness of naturals while reducing allergens and ensuring regulatory compliance. The shift toward isolates isn't just about safety—it's about building better fragrances that meet today's market needs.

- **Consistency & Quality Control –** Essential oils fluctuate with harvest conditions, affecting stability. Isolates deliver uniform scent profiles, essential for large-scale production.
- **Regulatory Ease –** As IFRA, EU, and retailer restrictions tighten, isolates simplify compliance, reducing the risk of costly reformulations.
- **Safer, Consumer-Friendly Scents –** With growing awareness of allergens, isolates help brands create natural-smelling, hypoallergenic fragrances that meet clean beauty standards.

The demand for natural, safe, and effective fragrances is only growing. As brands push for greater transparency and compliance, fragrance formulation must evolve.

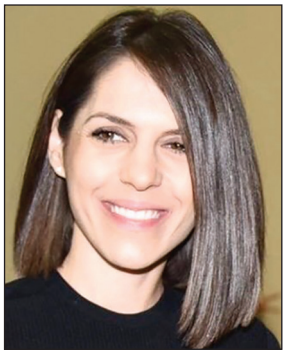
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The European-based panel sampled flavor ingredients from Bedoukian Research.



BY MARIA PALASSAROU
Flavorist, Givaudan

Flavor Report: EU Edition

Our European panel of flavorists assess the taste and odor characteristics of flavor ingredients from spilanthol to lavender aldehyde.

Organoleptic Evaluation Panelists

- **Aine Walsh,** senior flavorist, Keurig Dr Pepper
- **Andrea Albertino, Ph.D.,** senior flavorist, Esarom
- **Michele Pezzotta,** flavorist, Silesia Flavors
- **Bimal Karmakar, Ph.D.,** principal flavorist, Givaudan
- **Britta Nobis,** senior flavorist, Silesia
- **Maria Palassarou, Ph.D.,** flavorist, Givaudan

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In this month's column, we evaluate ingredients from Bedoukian Research, a company founded by Dr Paul Bedoukian in 1972 based in Connecticut. Bedoukian Research is recognized as a leading supplier of innovative, high-quality specialty aroma and flavor ingredients.



6-methyl heptanal complements various citrus tonalities like orange, tangerine and grapefruit.

Spilanthol

FEMA# 4668, CAS# 25394-57-4

Natural Occurrence: Isolated in *Heliopsis longipes* and several species in the genus *Acmella*, including *A. oleracea L.*, also known as jambu.

Odor Descriptors @100%: Weak, clean, ethereal, woody, slightly green, herbal.

Taste Descriptors @10ppm: Tingling sensation, numbing, metallic, salivating, slightly cooling.

Possible applications: In oral care products, as also chewing gum mint flavor, due to its cooling sensation. Its tingling effect could be beneficial on alcohol replacements, but also on energy drinks.

6-Methyl heptanal

FEMA# 4498, CAS# 63885-09-6

Natural Occurrence: Identified in lemon peel extract and orange essence oil.

Odor Descriptors @1%: Aldehydic, waxy, fatty, ethereal, fresh, juicy, citrus, green, floral, perfumistic notes.

Taste Descriptors @5ppm: Green, fatty, waxy, aldehydic, fresh, melon, watermelon, cucumber notes.

Possible applications: Its aldehydic, fresh, juicy notes will complement various citrus tonalities like orange, tangerine and grapefruit. The fatty waxy character would fit well on melon, watermelon, cucumber flavor, whereas in combination with floral notes could be useful in stone and tropical fruits. Lastly, the slight rancid notes might work well on savory flavor like cheese and chicken.

Terrasol

FEMA# 3491, CAS# 18368-91-7

Natural Occurrence: Isolated in *Etlingera elatior*, commonly known as torch ginger.

Odor Descriptors @1%: Earthy, rooty, camphoraceous, terpenic, pine, herbal, eucalyptol notes, musty, moss.

Taste Descriptors @5ppm: Earthy, moss, rooty, terpenic, pine, herbal, camphoraceous, musty, spicy.

Possible applications: Its powerful earthy character would fit well in beetroot and carrot flavor, whereas the intense terpenic pine notes could blend with citrus tonalities, especially lime distilled profiles. Its spicy element would complement cola and ginger flavors, but also alcohol tonalities like whisky. Other potential uses in oriental spicy flavors due to its patchouli nuances.

Lavender aldehyde

FEMA# 3406, CAS# 35158-25-9

Natural Occurrence: Key aroma compound in lavender oil, despite being present at very low levels.

odor Descriptors @100%: Floral, lavender, powdery, soapy, aldehydic, herbal, green, woody, perfumistic notes.

Taste Descriptors @ 5ppm: Fruity, floral, lavender, powdery, aldehydic, soapy, blueberry character, woody, terpenic, herbaceous.

Possible applications: Its powerful floral element would fit well in lavender and rose profiles, in tropical fruits like papaya, guava, mango, but also brown tonalities like cocoa and chocolate. The powdery soapy notes would blend with lychee and rhubarb flavor, whereas its intense fruity woody character would complement berry tonalities, like blueberry and raspberry. Other potential use in citrus flavor like bergamot due to its terpenic top notes.

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Guavanate

FEMA# 4165, CAS# 41654-15-3

Natural Occurrence: Isolated in guava, mango, pineapple and snake fruit.

Odor Descriptors @1%: Tropical, sulphurous, green, metallic, waxy, soapy, estery.

Taste Descriptors @5ppm: Tropical, sulphurous, waxy, melon, kiwi, cucumber, green, fruity, estery.

Possible applications: Its tropical powerful notes would give complexity to mango, papaya, guava and other tropical fruits. The soapy, green elements would blend well with cucumber, melon and kiwi tonalities, whereas the sulphur aspect would complement berry flavor, black currant, blackberry, as well as jammy, strawberry profiles.



The floral notes of orrisol may complement prickly pear flavor profiles.

Orrisol

FEMA# 3884, CAS# 76649-25-7

Natural Occurrence: In melon, particularly in the honeydew variety.

Odor Descriptors @100%: Green, soapy, waxy, fresh, floral, fruity, pear and melon notes.

Taste Descriptors @5ppm: Green, fatty, waxy, soapy, fruity, honey melon, cucumber, fresh, ethereal, floral, citronella notes.

Possible applications: Its green soapy profile would blend well with melon, watermelon, kiwi and cucumber flavor, whereas its floral sweet notes would complement pear and prickly pear profiles.

Lactones of *cis*-jasmone

FEMA# 3937, CAS# 70851-61-5

Natural Occurrence: Not found in nature.

Odor Descriptors @100%: Coconut, lactonic, creamy, milky, oily, fatty, fruity, vanilla, caramelic, jasmin notes.

Taste Descriptors @5ppm: Creamy, milky, oily, coconut, lactonic, vanilla, fruity, nutty, caramelic, tonka hay, slight earthy.

Possible applications: Its creamy, lactonic element would fit well in dairy flavors, as also in stone fruits like peach and apricot, apart from coconut tonalities. Subtle sweet vanilla notes would give complexity to French vanilla-type flavors, whereas its earthy, nutty, slight waxy character would complement nut tonalities and alcoholic like whisky.

2-Acetyl-5-methyl furan

FEMA# 3609, CAS# 1193-79-9

Natural Occurrence: Identified in coffee, cocoa, hazelnut and peanut, whisky, beer, tobacco, as also in beef.

Odor Descriptors @1%: Nutty, musty, roasted, caramelic, coumarinic, hay, powdery, cocoa notes, napthalin, meaty notes.

Taste Descriptors @ 1ppm: Nutty, roasted, caramelic, musty, earthy, coumarinic, cocoa and coffee notes.

Possible applications: Its intense nutty roasted earthy character would make it a great addition in nut tonalities, popcorn, as also coffee, cocoa and chocolate flavor. Its caramelic notes would blend well on brown flavor like maple, whereas the coumarinic element would give complexity to vanilla tonalities. Lastly, its subtle savoury notes would possibly fit on meat and fish profiles.

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LMR Naturals by IFF	*www.lmrnaturals.iff.com*	33
Mane	*www.mane.com*	7
MG International Fragrance Company	*www.mgessentialingredients.com*	5
Penta Manufacturing Co.	*www.pentamfg.com*	C4
Solvay Aroma Performance Global Business Unit	*www.solvay.com*	23
Symrise	*www.symrise.com*	1
Vigon International, Inc.	*www.vigon.com*	3
Xiamen Bestally Biotechnology	*bestally.com*	13





Vanillin, Natural

One product. Endless possibilities.

With its smooth notes and creamy texture, it's no surprise that Vanillin, Natural can be found in hundreds of flavor and fragrance combinations. But endless possibilities need a supply to match.

At Aurochemicals, Vanillin, Natural is at the top of our list. We're stocked so you'll never have to delay your production.

All natural - 99% pure.

aurochemicals.com | 1-866-875-AURO

auro CHEMICALS

The Natural Choice for Flavor and Fragrance Ingredients

Developing Better Products through Natural Chemistry

Penta Manufacturing Company is Family Owned and Operated for Over 45 Years.

Here is a partial listing of our Family of Naturally derived Flavor and Fragrance ingredients.

For detailed paperwork on all of our items consult our web site at www.pentamfg.com

- NATURAL 2-ACETYL FURAN
- NATURAL 2-ACETYL PYRAZINE
- NATURAL 2-ACETYL PYRIDINE
- NATURAL 2-ACETYLTHIAZOLE
- NATURAL CITRONELLIC ACID
- NATURAL AMBRETTOLIDE
- NATURAL INDOLE
- NATURAL ANISYL ACETATE
- NATURAL ANISYL BUTYRATE
- NATURAL BISABOLOL
- NATURAL BUTANETHIOL
- NATURAL BUTYL BUTYRATE
- NATURAL BUTYL CAPROATE
- NATURAL BUTYL BUTYRYL LACTATE
- NATURAL BUTYL CAPROATE
- NATURAL CAFFEIC ACID
- NATURAL CAPSAICIN
- NATURAL CARAMEL FURANONE
- NATURAL DELTA-3-CARENE
- NATURAL ALPHA-CARYOPHYLLENE
- NATURAL 1,4-CINEOLE
- NATURAL CINNAMIC ALCOHOL
- NATURAL CINNAMYL CINNAMATE
- NATURAL CINNAMYL ISOBUTYRATE
- NATURAL CINNAMYL PROPIONATE
- NATURAL DAMASCENONE
- NATURAL BETA DAMASCONE
- NATURAL T2, T4 DECADIENAL
- NATURAL TRANS-2-DECENOL
- NATURAL DIHYDROCARVONE
- NATURAL 2,3-DIMETHYL PYRAZINE
- NATURAL OCIMENE
- NATURAL 2,6-DIMETHYL PYRAZINE
- NATURAL TRANS-2-DODECENAL
- NATURAL DODECYL BUTYRATE
- NATURAL ETHYL CAPRYLATE
- NATURAL ETHYL CYCLOPENTENOLONE
- NATURAL 2-ETHYL-2-HEXENAL NATURAL
- NATURAL ETHYL-3-HYDROXYBUTYRATE
- NATURAL ETHYL-2-HYDROXYCAPROATE
- NATURAL ETHYL ISOVALERATE
- NATURAL ETHYL LAURATE
- NATURAL ETHYL LEVULINATE
- NATURAL ETHYL LINOLEATE
- NATURAL ETHYL-2-METHYL BUTYRATE
- NATURAL 2-ETHYL-3-METHYL PYRAZINE
- NATURAL ETHYL-3-METHYL THIOPROPIONATE
- NATURAL ETHYL STEARATE
- NATURAL FURFURYLIDENE ACETONE
- NATURAL HEPTANAL
- NATURAL 3-HEPTANOL
- NATURAL TRANS-2-HEPTENAL
- NATURAL ISOPROPYL ISOBUTYRATE
- NATURAL IONONE ALPHA
- NATURAL IONONE BETA
- NATURAL SULFUROL
- NATURAL SULFURYL BUTYRATE

For a complete list of all our natural, natural identical and synthetic ingredients visit us at www.pentamfg.com

Penta®

Penta Manufacturing Company

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