



Unveiling the Essence: A Journey into Perfumery Formulas

May 3 - June 13, 2025
IAO Gallery

HISTORY: FROM RECIPE TO FORMULA

Although perfumes have existed for thousands of years, the perfume formula as we know it today is a modern invention. In earlier times, compositions were passed down as recipes, often embedded in medical, ritual, or artisanal traditions. These recipes frequently included not just ingredients, but also instructions for preparing the raw materials — such as how to distill a flower essence or macerate resins.

Quantities were approximate, relying on drops, pinches, or even metaphorical or botanical measures. Consider this 17th-century recipe for a scented pomander, which uses evocative language and loosely defined proportions:

Take an ounce of the purest garden mold, cleansed and steeped seven days in change of motherless rose-water, then take the best labdanum, benzoin, both storaxes, ambergris, civet, and musk, incorporate them together, and work them into what form you please. (England, ca. 1607)[1]

What we now call a modern formula began to take shape in the 19th century, with the discovery and production of synthetic aroma molecules such as vanillin (from 1874) and coumarin (from 1868). These molecules offered a precise, replicable alternative or addition to natural materials and demanded a new form of recording — one that worked with measured weights, purities, and percentages.

This standardization transformed perfumery. To ensure reproducibility and safety, materials had to be classified and quantified, and the formula became also a scientific document, no longer just an artisanal guide. As a result, perfumery gradually moved out of the realm of apothecaries and pharmacies and into the emerging field of industrial chemistry and sensory design.

Today's formulas often resemble spreadsheets or chemical blueprints — modular, controlled, and optimized — but they still remain indebted to their historical origins in recipes, rituals, and the imagination.

[1] Thomas Tomkis, *Lingua: or the Combat of the Tongue, and the Five Senses for Superiority. A Pleasant Comedy*. (London: 1607. Facsimile Edition, 1913).

SECRECY

The perfume industry is known for its secrecy — and at the heart of that secrecy lies the formula. At first glance, the logic seems simple: with a formula, a perfume can be reproduced, provided one has access to the right materials. Because patenting an entire fragrance composition is challenging, the formula becomes both an aesthetic and economic secret — part creative document, part trade secret, part financial asset..

As such, formulas are typically kept under strict control — stored in proprietary databases, archived in the vaults of fragrance houses, or hidden on perfumers' private computers. In mainstream perfumery, perfumers are often required to sign non-disclosure agreements (NDAs). This means that both the formula and the identity of its author may remain invisible, even to clients or end users.

While gas chromatography has made it technically possible to analyze and partially reconstruct a scent since the 1960s, formulas remain difficult to fully decode: the structure, balance, and narrative of a perfume cannot be extracted from data alone. Still, the formula remains the most jealously guarded element of the perfume industry — the hidden source code behind the scent.

The industry often justifies this secrecy by claiming that formulas are too complex for public understanding. But critics have long pointed out that full disclosure might in fact disrupt the carefully maintained illusions surrounding many perfumes — for instance, by revealing the high proportion of inexpensive synthetic ingredients and the minimal use of costly naturals like rose oil or oud, despite their prominence in marketing. In this sense, secrecy not only protects intellectual property — it also serves to shield branding narratives from scrutiny.

“Writing a formula is almost like painting with your eyes closed. And so you close your eyes, you start painting, and then you open them and you are like, ‘Oh, this is not what I wanted to make.’ You close them again, and you paint again, and then you open them until you have what you actually wanted to make because we have the formula.”

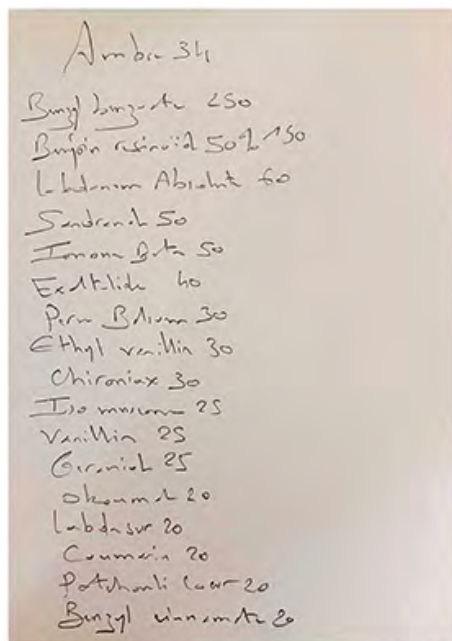
Spyros Drosopoulos, Baruti

STRUGGLING FOR TRANSPARENCY

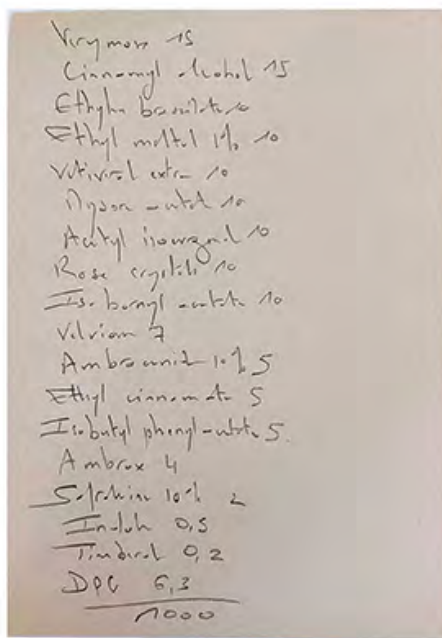
A number of counter-movements have begun to emerge. Projects like Perfumesucks, which publishes its formulas in full, the Perfumery Code of Ethics, which advocates for greater transparency and creative recognition, or Open Source Scent Culture, which examines questions around accessibility all challenge the industry's dominant model. The platform opensourcescent.org, for example, invites perfumers to share their compositions under open licenses, drawing inspiration from open-source software culture. Here, transparency becomes an experimental and political gesture — one that reimagines authorship, value, and access.

These initiatives echo broader discussions around open access and the politics of data in other industries. While major fragrance houses maintain vast proprietary databases of scent formulas and olfactory data, such information is rarely shared outside corporate ecosystems.

Against this backdrop, open perfumery projects ask: Who owns olfactory knowledge? Who has the right to replicate, interpret, or intervene? In these questions, the formula is no longer just a recipe. It becomes a site of negotiation — between secrecy and sharing, control and creativity, market logic and participation.



Ambré 341
Benzyl benzoate 250
Benzoin resinoid 50 2 150
Labdanum Absolue 60
Sandracol 50
Ionone Gita 50
Exaltolide 60
Peru Balsam 30
Ethyl vanillin 30
Chironiex 30
Iso marmex 25
Vanillin 25
Geraniol 25
Oksanol 20
Labdanol 20
Coumarin 20
Patchouli leaf 20
Benzyl cinnamate 20



Vergine 15
Cinnamyl alcohol 15
Ethyl benzoate
Ethyl methyl 14 10
Vetivert extra 10
Pyrene - white 10
Acetyl isobutyrate 10
Rose caryophyll 10
Iso benzyl acetate 10
Vetivert 7
Ambroxide 10 1 5
Ethyl cinnamate 5
Isobutyl phenylacetate 5
Ambrox 4
Solifolium 10 1 2
Indole 0.5
Timber 0.2
DPG 6.3
1000

Formula by Anatole Lebreton, France

CONTEMPORARY FORMULAS: BETWEEN INDUSTRY, ART, AND CODE

Today, perfume formulas are not just technical instructions — they are multifunctional documents, shaped by regulation, economics, and software, yet still fundamentally aesthetic objects.

Modern formulas are written with precise concentrations, often in grams, milliliters, or percentages, accurate to three decimal places. They must comply with IFRA guidelines and international safety regulations. Each material is tagged with a CAS number and detailed allergen information. Often, the formula also includes the cost of each ingredient. In this way, the formula functions simultaneously as a creative blueprint, a legal document, and an economic calculation.

Most contemporary perfumers work with specialized software (e.g. ScentDesign), which supports version control, allows for cloning older formulas, and integrates libraries of materials with data on volatility, intensity, and cost. Formulas have become increasingly modular: especially in mainstream perfumery, perfumers reuse and recombine predefined accords — such as leather, citrus, or marine bases — much like programmers reuse code libraries.

Some fragrance houses are now experimenting with AI-assisted composition (e.g. Philyra or Osmo), where algorithms not only suggest ingredient combinations or generate formulas tailored to demographic data or olfactory trends, but purportedly also open up new creative possibilities.

‘Parce qu’une formule, on peut la travailler pendant toute une vie. Et donc souvent, nous, on termine une formule parce qu’il faut la terminer, C’est bon, il faut qu’on produise à telle date. Donc c’est souvent la date qui impose la fin de la formule.’

Alexi Toutblanc

AUTHORSHIP AND ANONYMITY

Despite their scientific and anonymous appearance, formulas are authored documents. In large fragrance houses, they are often the result of collaborative processes involving perfumers, evaluators, and marketing teams. The anonymity of the formula list makes it easy to detach the work from its creator; formulas circulate internally and across companies, often without attribution. As legal and commercial objects, formulas tend to obscure the aesthetic labor that produces them.

It was primarily through niche perfumery, notably with the emergence of Éditions de Parfums Frédéric Malle, that perfumers began to be named and publicly acknowledged as the creators of their scents. This shift reframed the perfume not only as a product but also as the expression of an individual artistic voice.

Today, named authorship plays a prominent role in many niche and artisanal perfume houses, where the perfumer is made visible — at times as a strategy of differentiation within an otherwise opaque industry, and at times as a critique of its dominant modes of production. Nevertheless, even within niche perfumery, formulas themselves are rarely published. A notable exception is Perfumesucks (also exhibited here), which makes its formulas publicly accessible.



Daikon Radish Accord										
	A	B	C	D	E	F	G	H	I	
1	Material	% Dilution (Triethyl Citrate)	Other Names	Allergens / Sensitizers / Restrictions	Pipe	Nature Status	Note Type	CAS	AMT2	
2	Hedione High Cis	100	Methyl Dihydro Jasmonate HC		FD04	Synth	M	24851-98-7	\$3	
3	Syvertal (25%)	25	Green Dioxolane		KC09	Synth	B	4350-47-1	14	
4	Guaiyl Acetate	100			CD06	Synth Semi- synthetic Nat (can be made Synth)	B	134-28-1	8	
5	Phenyl Ethyl Formate (20%)	20	Formic Acid		KD10	Synth	M	104-62-1	7	
6	Emeraldine (25%)	25	Polyaniline Woody		KD08	Synth	T/M	25233-30-1	6	
7	Polvrol	100	Carboxylate		FD01	Synth	T	68966-86-9	6	
8	Celery Seed (50%)	50	Apium graveolens	79% Limonene 0.1% Linalool	BA03	Nat	M	8015-90-5	3	
9	Parsley Seed (50%)	50	Petroselinum crispum	5% Limonene	EB07	Nat	M	8000-68-8	1.25	
10	Styrallyl Propionate (20%)	20	1- phenylethyl propionate		KD09	Synth Nat (can be made Synth)	M	120-45-6	1	
11	Dimethyl 2,5 Pyrazine (10%)	10			LA02	Synth	M/B	123-32-0	0.75	
12					TOTAL				100	

< Left: visualization / graphite drawing of daikon radish and role of ingredients in the accord.
> Above: final formula with associated information for each ingredient.

Daikon Radish Accord, by John Biebel, USA

PROVIDED FORMULAS

Given the secrecy that typically surrounds perfume formulas, we are all the more grateful to the perfumers who have made one of their formulas available as an exhibit. Each formula is presented alongside the corresponding scent — and accompanied by photographs of the workspaces where the daily practice of perfume creation takes place. In doing so, the exhibition seeks to make the formula, in its list form, visible as an artistic and professional document in its own right. This also means understanding the formula as a document in process. Some appear as annotated sketches, occasionally with small drawings; others take the form of sparse Excel spreadsheets. Depending on the perfumer, the entries may be arranged alphabetically, chronologically, or structured in modular components. These seemingly dry or technical formats — the quiet architectures of a spreadsheet — reflect the underlying aesthetic process, even if they do not lend themselves to immediate olfactory perception.

INTERPRETATION EXERCISE

A perfume formula is, at first glance, “just” a list of materials and their proportions — not a formula in the mathematical sense. A list cannot be read like a text, decoded like an image, or perceived sensorially like a scent. And yet, perfume formulas can be read — at least by experienced perfumers and evaluators. This exhibition is interested in how perfumers read such formula lists: what kinds of ideas are sparked during the reading, how meaning emerges through the grouping of ingredients, or how alternative suggestions take shape in the act of interpretation. Even seasoned perfumers emphasize that a formula alone often only provides a rough impression of the scent. All the more fascinating, then, to explore the kinds of ideas that arise when reading a formula.

Christophe Laudamiel provided the formula for his perfume Volatile Marilyn, which we sent to 12 perfumers. We asked them to interpret it, and were particularly interested in how additional information might shape the reading process. Does knowing the name or author of a perfume affect the perception? What kind of image or emotion arises when smelling the scent? Does that change when looking at the formula?

Group 1 received only the formula.

Group 2 received the formula, perfume and perfumer name

Group 3 received the formula and the actual scent.

Group 4 received the formula, the scent, perfume and perfumer name

PARTICIPATING PERFUMERS

Amer Alradhi (Saudi Arabia)
Andreas Wilhelm (Switzerland)
Christophe Laudamiel (USA | Japan)
Dawn Spencer Hurwitz (USA)
Ethan Turner (USA)
John Biebel (USA)
Lula Curioca (USA)
Maki Ueda (USA)
Mathilde Laurent (France)
Musée International de la Parfumerie (France)
Na-Moya Lawrence & Debbie Lin (USA)
Omer Ipekci (Turkey)
Pia Long (UK)
Prin Lomros (Thailand)
Spyros Drosopoulos (Netherlands | Greece)
Sarah McCartney (UK)

and

Ashley Eden Kessler (USA)
Euan McCall (UK)
Julianne Lee (USA)
Lakenda Wallace (USA)
Maria Golovina (Russia)
Michael Nordstrand (USA)
Yosh Han (USA)

CURATORS

Urs Stäheli—Prof. of Sociological Theory, University of Hamburg
Saskia Wilson-Brown—Exec. Director, The Institute for Art and Olfaction



secretformulas.de | artandolfaction.com

Front cover: Formula sketches by Ömer Ipekçi