

## Fine Fragrances & Perfumes

**A**romatic brews flaunting gossamer-like qualities like power, mystery, sport, sensuality, passion, practicality, etc., have always beckoned and bewitched humans, down the ages. Prayer or penance, to cure or to conquer, fragrances were intertwined with the lives of the ancients, finding immortality in civilisations, especially amongst Egyptians, Greeks, Mesopotamians, Romans, Indians etc.

Consumer preferences and desire for different and newer fragrances in any age were and are closely related to social and economic development. The success of any fine fragrance depends not only on the co-ordination and interrelationship of the many phases of creativity, but also in fulfilling the continually increasing consumer consumption and demand or, to put in short, its intrinsic value.

### Need of fine fragrances

People groom themselves to bolster their self-assurance in dealing with people in their sphere of influence. The fragrance used should be appropriate to their personalities with the delicate breath of their fragrance gently stressing their charms. A person chooses a product based on the fragrance that discretely outlines the individualistic features of their personality. The choice of a fragrance is the stylish co-ordination of personality and is a matter of good taste.

Fragrance selected should be unobtrusive and reserved, giving an impression of being aesthetic. The fragrance should enchant and fascinate, without tending to be extravagant. People are sensitive to odours and resent one who spread a cloud of intense

odour around at every motion. A person doing so will strike us as being showy and bothersome, no matter how popular the fragrance is. It is only the veiled odour phenomenon that playfully approaches, but is capriciously withdrawn, that is appreciated as mystically attractive and alluring.

Perfumers create fragrances using their inspiration, personal likes and dislikes and are works of art; a harmonious olfactive mixture that complements their personality and spreads a mysterious charm all around, giving a feeling of freedom and liberation. Today, appearance or presentation, marketing, endorsements, publicity, product distribution, fashion and lifestyle have a major role to play in fragrance preference. Fragrances are purchased and worn to strengthen one's personality and charm. People also buy because it provides a personality according to modern day's lifestyle requirement and promises made in keeping up-to-date with the latest fragrance trends.

### How a fragrance is created

Today, we live in a dynamic, democratic society where evolution of market requirements is continuous. One cannot survive if one does not change with the times. Fragrance is born out of creative intuition and playful imagination. The real measure of a perfumer's creativity lies in how the perfumer interprets the profile direction to create a good fragrance by using the available natural and synthetic aromatic notes to decide its success or failure.

Just as a painter organises colours on the palette, the perfumer too likewise organises aromatic substances through odour classification. Gener-

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ally, the perfumer simplifies requirements for the right smell by preparation of pre-blended bases, containing a dozen aromatic ingredients to obtain the desired effect, fully aware of the need to maximise the required level of effect. The blends are then put together only by selecting aroma ingredients that work best in the combination.

The perfumer considers a group of odours available so that a general basic sketch is drawn. However, it has to be balanced and interact well with one another, as it represents the framework of a finished fragrance. The sketch has to be strong and represent a distinctive characteristic, if it has to become popular and famous. In any fragrance the nose recognises the top, middle and base notes and when well adjusted are the building blocks of a fragrance idea.

After a best sketch is selected, a balance of the top, middle and base note is achieved. This is done by starting with the middle notes and then working toward the bottom and top note, keeping in mind that the fragrance is in harmony throughout the creative process. The top, middle and base note varies from fragrance to fragrance. A top note in a fairly heavy oriental can be the middle note of a lighter less pronounced fragrance. In any case, the fragrance created should be aesthetically pleasing, with the different elements. The aroma ingredients used in the creation should get fully integrated in the blend, without distorting the original concept.

## Special Report

A true reproduction of flower complexes may or may not have popular appeal, even though it might be appreciated by a discriminating scientist as an achievement of a true reproduction of nature. A consumer generally prefers a stylised version of a natural odour. This is because a single flower natural odour does not produce on the user, either erogenic, narcotic, anti-erogenic, stimulatory effects or any of their varying combinations. Moreover, consumers are neither able to identify nor communicate their various requirements.

Consumers try and test various fragrances and then select only one that satisfies their required expectations. As popular fragrances are those that successfully produce all these various effects, perfumers try to incorporate all these elements in creating a product, that in a sense are not duplicates or absolute imitations of natural odours, but ones that are only a fancy interpretation of nature.

### Classification of odourants

Dr. P. Jellinek's in his book 'Psychology in Perfumery' has proposed that all odourants – natural, synthetic,

or semi-synthetic – can be classified by the effect they produce on the user. This classification, however, is not sharply outlined as boundaries overlap and one odourant can produce more than one effect, depending on the combinations used in creating the fragrance.

- ♦ Erogenic effects: Produced by aromatics of natural origin like musks, civet, ambergris, orange oils, indole and indole-containing essential oils like jasmine etc.
- ♦ Narcotic effects: Produced by resins, essential oils containing rose components, geranium oil, tuberose flowers, violet blossoms, balsams and other flowers pommades etc.
- ♦ Anti-erogenic effects: Produced by citrus & cologne odours, lavender and pine odour, etc.
- ♦ Stimulating effects: Produced by mosses like oak moss, vanilla & tonka beans, spice oils, patchouli oil & vetiver oil etc.

A successful fragrance creation

extrudes all the above effects optimally and pleases the user suitably to individual taste. By cleverly combining various ingredient components belonging to the different types, one can create a soothing, refreshing, or hot and sexy fragrance.

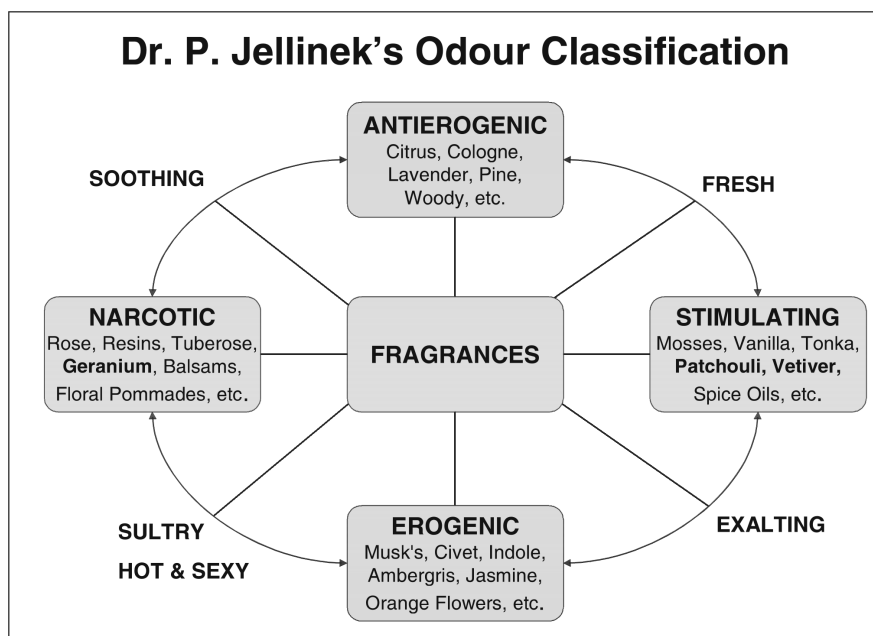
### What's the right fragrance for me?

"A perfume is somewhat like a spouse, you have to live with it for a while, in order to find out whether it's the right one for you!"

We have to try out a fragrance, and then take sufficient time to let it work its magic on you. There are many reasons for this. Firstly, the odour of a fragrance will differ according to the surroundings. Fragrance impression can be entirely different in a fragrance intensive shopping place than in a neutral homely environment. Differences in temperature, humidity and the evaporation rate of the various fragrance compounds also play major roles. Fragrances behave according to its compositions (top note, heart note and base note), thus making every fragrance different and distinct from one another.

One however should also not try too hard in searching for the right fragrance. If you try out too much in quick succession, your nose will no longer be able to differentiate between what you like and what you don't. Try no more than four similar or five to six different fragrances at a time.

Also try them out on un-fragranced areas of your body, far apart from one another as possible. In addition, remember a fragrance will smell differently on every skin. There's no guarantee that you'll like what smells so good on someone else, when you wear it yourself. This important aspect too should be taken into consideration in choosing a personal fragrance.



**Table 1**  
Approximate breakdown of amounts of fragrance oil, alcohol and water

Alcoholic Fragrances	Fragrance [%]	Alcohol: water ratio
After shave Lotion	1.0-2.5	70:30
Splash Cologne	1.0-3.0	80:20
Eau de Cologne	2.0-5.0	80:20
Eau de Toilette	3.0-8.0	90-80:10-20
Eau de Perfume	10.0-15.0	90-80:10-20
Perfume	15.0-30.0	90-95:10-05

### Alcoholic perfumes

Artistry and creativity lies in creating the concentrate fragrance oil, based either on a single smell or a complex symphony using hundreds of different aroma components.

The procedure for making a fine fragrance, alcoholic perfume or cologne using fragrance oil concentrate is very simple. The difference between fine fragrance types is merely the concentration of the fragrance oil and other ingredients, viz. alcohol and water, or carrier oil (for oil-based fine fragrances).

Although fragrances for adornment was introduced in ancient India, the use of alcohol as a carrier solvent originated in Europe. Today's highly refined alcoholic perfumes or fine fragrances are the outgrowths of the invention of the distillation process. The first alcoholic fragrance commercialised is 'Eau de Cologne' by its originator Giovanni Paolo Feminis under the brand name 'Eau-Admirable', and sold in Cologne to French soldiers who carried it back to France calling it 'Eau de Cologne'.

### A note on alcohol

The odourless alcohol used in perfumery is ethanol. This is the same type that's in booze, and so strictly regulated and impossible to obtain without an alcohol permit.

Ethanol available through govern-

ment permit in India is mostly from fermentation of sugarcane molasses. Sale of ethanol, as a pure substance, or in the form of alcoholic beverages, is also heavily taxed.

In order to relieve non-beverage industries of this tax burden, governments specify formulations for denatured alcohol, which consists of ethanol blended with various additives to render it unfit for human consumption. These additives, called denaturants, are generally either toxic (such as methanol) or have unpleasant tastes or odours (such as Denatonium benzoate).

Specialty denatured alcohols are denatured alcohol formulations intended for a particular industrial use, containing denaturants chosen so as not to interfere with that use. While they are not taxed, purchasers of specialty denatured alcohols must have a government issued permit for the particular formulation they use and must comply with other regulations.

Completely denatured synthetic alcohols are formulations that can be purchased for any legal purpose, without permit, bond or other regulatory compliance. It is intended that it be difficult to isolate a product fit for human consumption from completely denatured synthetic alcohol.

Imported special denatured syn-

thetic ethyl alcohol with added 'Bitrex' is however easily available in 500-ml bottles in the chemical market, without the mandatory alcohol permits. 'Bitrex' is an odourless chemical, which renders the alcohol undrinkable, as it makes the alcohol extremely bitter and unpleasant to taste.

Other denaturants used may be diethyl phthalate, 2% n-propanol, etc. Synthetic special denatured alcohol, unlike natural ethanol, is however comparatively expensive, but available freely for non-professionals to use.

### How to make a fine fragrance using special denatured synthetic ethyl alcohol – all by yourself

- ♦ Purchase readily available IFRA approved / compliant concentrate fragrance oil or prepare by combining different fragrance concentrates as per desired odour profiles.
- ♦ Add oil to alcohol, and then add distilled /potable water, free from micro-organisms, in the required proportions.
- ♦ Mix by stirring slowly to ensure complete dispersal.
- ♦ The product should be clear. In case it is hazy add some more alcohol to get a clear solution.
- ♦ Allow the mixture to mature for a minimum of 48 hours (to 6 weeks) ... the longer, the better.
- ♦ Adjust strength (if desired) by adding more water and mixing well.
- ♦ Fill it up in glass spray bottles for use.
- ♦ Colours, sequestering agents, UV absorbents, antioxidants may also be added to avoid deterioration of

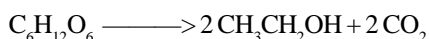
colour, odour and clarity, to improve shelf-life of the product.

Readers may note that ethyl alcohol is a flammable, volatile, colourless, slightly toxic chemical compound with a distinctive odour. Kindly take necessary relevant care during its use.

Industrial ethanol is produced from petrochemical feedstocks, typically by the acid-catalyzed hydration of ethene, represented by the chemical equation



Ethanol for use in alcoholic beverages and fuel is produced by fermentation: when certain species of yeast (most importantly, *Saccharomyces cerevisiae*) metabolize sugar in the absence of oxygen, they produce ethanol and carbon dioxide. The overall chemical reaction conducted by the yeast may be represented by the following chemical equation:



The process of culturing yeast under conditions to produce alcohol is referred to as brewing.

### **Why you should stop using cheap fabric / hanky perfumes!**

The sale of natural ethanol is strictly regulated and so impossible to obtain without a permit. Denatured synthetic alcohols, although available without permit or regulatory compliance, is expensive. To get over these problems, some manufacturers avoid using ethyl alcohol and instead use toxic methyl alcohol (methanol) as replacement.

Methanol is an industrial chemical compound with chemical formula  $\text{CH}_3\text{OH}$  and is easily available at almost half the price of government controlled ethanol.

Methanol, the simplest alcohol, is a light, volatile, colourless, flammable, poisonous liquid with a distinctive odour that is somewhat milder and sweeter than ethanol. Methanol is frequently used as a denaturant additive for ethanol manufactured for industrial uses — this addition of a poison economically exempts industrial ethanol from the rather significant ‘liquor’ taxes that would otherwise be levied as it is the essence of all potable alcoholic beverages.

Methanol is now produced synthetically from methane by a multi-step chemical process. Methanol is intoxicating, but not directly poisonous. It is toxic by its breakdown by the enzyme alcohol dehydrogenase in the liver by forming formic acid and formaldehyde which cause blindness by destruction of the optic nerve.

Methanol ingestion can also be fatal due to its CNS depressant properties in the same manner as ethanol poisoning. It enters the body by ingestion, inhalation or absorption through the skin. Though it is miscible with water, methanol is very hard to wash off the skin. It is a de-fatting agent and may cause skin to become dry and cracked. Skin absorption can occur and symptoms may parallel inhalation exposure. Continued exposure may cause eye lesions. Methanol is an irritant to the mucous membranes. Toxic effects are exerted upon the nervous system, particularly the optic nerve.

Once absorbed into the body, methanol is very slowly eliminated. Symptoms of overexposure include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma and death. A person may get better, but then worse again, up to 30 hours later. Persons with pre-existing skin disorders or eye problems or impaired

liver or kidney function may be more susceptible to the effects of the substance. Foetal tissue will not tolerate methanol. Dangerous doses will build up if a person is regularly exposed to vapours or handles the liquid without skin protection.

The initial symptoms of methanol intoxication are those of central nervous system depression: headache, dizziness, nausea, lack of coordination, confusion, drowsiness and with sufficiently large doses, unconsciousness and death.

The initial symptoms of methanol exposure are usually less severe than the symptoms resulting from the ingestion of a similar quantity of ethyl alcohol. Once the initial symptoms have passed, a second set of symptoms arises 10-30 hours after the initial exposure to methanol: blurring or complete loss of vision, together with acidosis. These symptoms result from the accumulation of toxic levels of formate in the bloodstream, and may progress to death by respiratory failure.

If methanol has been ingested, a doctor should be contacted immediately. The usual fatal dose is 100-125 ml. Toxic effects take hours to start and effective antidotes can often prevent permanent damage. This is treated using ethanol or fomepizole. Either of these drugs acts to slow down the action of alcohol dehydrogenase on methanol by means of competitive inhibition, so that it is excreted by the kidneys rather than being transformed into toxic metabolites.

### **Non-alcoholic oil-based perfumes**

A cursory look at the world fragrance market will reveal the trend of alcohol-free fragrances becoming popular. The basic underlying reason for this global market trend might be

different. Volatile organic chemical (VOC) restrictions, environmental pressures, religious constraints in Islamic nations, and political climate, coupled with government restriction of alcohol usage in consumer products, has helped to create this new market segment of non-alcoholic fine fragrances.

Perfume oil is another perfume delivery system that uses neither ethyl alcohol nor toxic methanol as a carrier solvent. There are many advantages of using oil-based perfumes over alcohol-based fragrances, apart from the need to follow governmental rules and regulatory requirements or use expensive synthetic denatured alcohol.

Alcohol is drying to the skin and since oil does not evaporate like alcohol, the odour strength, actually lasts longer on skin. People who are aller-

gic to perfumes are actually only allergic to the alcohol; such persons can use oil-based fragrances instead and pander to their desires.

To make non-alcoholic perfume oil, substitute alcohol and water with a carrier oil. Mineral oil or liquid paraffin or any de-odorised vegetable oils can be used. However jojoba wax, (jojoba is actually not an oil, but a wax and is liquid at room temperature), is recommended, since it has a long shelf life, is odourless and does not turn rancid. Moreover it blends into the skin, without leaving any greasy feel.

#### **Solid perfume**

Another form of fragrance delivery system, very easy to make, is a solid perfume. It consists of 12 parts of light liquid paraffin or mineral oil as carrier oil, 2 parts of beeswax and 0.5-1 part fragrance concentrate. Wax

and oil is taken together and melted. The mixture is then somewhat cooled. When still in the molten state, fragrance is added and mixed well. It is then poured into wide-mouth container jars. In case the product obtained is too hard, add more oil or less beeswax. Similarly, adjust fragrance dosage if too strong or weak.

#### **Dry fragrance spray**

If in case you desire a fragrance spray that goes dry on spraying then a silicone carrier is used, replacing alcohol and water. Cyclomethicone is perfect for this purpose, as it evaporates very quickly and delivers the fragrance without leaving any wetness behind. Fragrance concentrate to cyclomethicone ratio is normally about 1:3 to 1:6 (or greater). It is to be noted that greater the amount of cyclomethicone used in the product, weaker is the odour concentration.