



Fragrance Evaluating & Matching

Whether it's learning the scent of a new perfumery raw material or choosing the appropriate sample to send to a customer, we have found that using the proper procedures for fragrance evaluation can make or break the selection of the "best fragrance for the product."

Belle-Aire manufactures fragrances for many industries and for many types of products. These can range from luxurious perfumes, to candles, to personal care products, to odor masks for industrial cleaners. In the paragraphs to follow we have summarized various points of fragrance evaluation and the reasons behind them, in order for you to better understand the different ways to evaluate both fragrance oils and finished products.

Our first example illustrates the correct way to evaluate a sample of fragrance oil submitted from a fragrance house, such as Belle-Aire. A fragrance oil consists of combinations of many aromatic ingredients, sometimes upwards of 50-100 or more. Typically, the fragrance is composed of three different sets of "notes" that are defined by their volatility. These are known as the fragrance top notes, the middle notes and the base or dry-down notes. When smelling a fragrance directly from the bottle you will predominately perceive only the top notes of the scent. This is why it is important to use a fragrance blotter, made specifically for the purpose of evaluating fragrances. The tip of the blotter should be dipped into about ¼ inch of the oil. By immediately sniffing the scent from the blotter the most volatile "top notes" will dominate the odor. Within minutes or even less, the top notes will begin to evaporate. After this occurs, the middle notes of the fragrance will make their debut. This transition is not sudden, but more like an unfolding of the next layer as each note or combination of notes becomes apparent. Finally, after about 15 minutes for an extremely volatile scent, up to an hour for a more residual scent, the base notes or dry-down will begin to emerge. This drying down can last for an hour, a week, or even months, depending on the characteristic notes of the scent. Occasionally these notes are referred to as "fixatives" which are described in more depth in our Fragrance and Terminology Definition Guide. In most cases the base notes are remarkably different from the "first whiff" impression right out of the bottle and can dramatically alter the overall fragrance performance in the finished product. It is important to remember that all ingredients in a fragrance work together and have been artistically combined to create the final scent.

Sometimes the base product can make an accurate evaluation difficult to achieve. Competing base odors, low levels of fragrance in the product, reactions that have occurred between base ingredients and the fragrance, the age of the product or

other factors can all affect the way the fragrance appears to smell to the product user.

When we are evaluating fragrance matches for our customers by odor only, sometimes the top notes gives us the impression that the fragrance is right on, but as the fragrance changes from middle notes and then to the base notes, the scent can become either remarkably different or remain very close. Through the process of elimination at various stages of odor evaluation we can eventually find a scent that is similar throughout the fragrance cycle. This selection will then most likely perform the same or similar in the product as the target fragrance. (For exact matches, we typically must depend on special instrumentation to aid us in identifying the fragrance ingredients. However, the process is far more complex and requires highly technical procedures.)

When there is no fragrance oil available, there are several ways that a somewhat more accurate picture of the fragrance can be obtained from a finished product than by merely smelling it out the bottle. We depend on the following techniques and would like to share them with you at this point. This will enable you, the customer to perform in-house testing to see if an in-stock fragrance would be appropriate.

Dilute the target product (such as a shampoo or detergent) in hot water and evaluate the fragrance from the resulting vapor. Sometimes fragrance volatility can be increased over the base in this way and give a clearer picture of the fragrance odor. Unfortunately the top notes would still dominate this evaluation.

- Wipe the product over a large surface area and evaluate from this. This will increase the amount of fragrance evaporating and perhaps offer a better impression of its character.
- Place a small amount of the product on the back of your hand and spread it around. (For non-irritating products only!) By smelling the area from time to time you may be able to determine the way the fragrance changes and therefore identify more materials in the fragrance as middle and dry-down notes. You can also compare products by repeating this procedure on your other hand.
- Spray the diluted product into the air. Aerosolizing tends to give an overall impression of the fragrance without any part dominating the odor. Top, middle and base notes can be observed simultaneously.
- Develop an “expert panel” of people that have demonstrated skill and interest in fragrance evaluation. Train them with the above techniques and the language of fragrance notes in order to arrive at any meaningful commonly described notes.
- If appropriate, in addition to descriptive adjectives, comparisons to national brands that many people are familiar with can help type a fragrance quickly and accurately.

- Discuss the impressions of the fragrance with other evaluators using common definitions. Sometimes shared dialogue can enlighten everyone and provide a more complete picture of the fragrance make-up.
- If the fragrance is offered in a variety of forms as is likely in cosmetics, then evaluate the form that contains the most fragrance and the least competing base odors. For example, an alcoholic body spray would be easier to evaluate than a shampoo which would in turn, be easier to work with than a lotion that say contained lanolin and/or other materials with their own unique odors.
- Try to develop a product base that is very similar to the competing product. A fragrance can respond very differently in different mediums. Acidity or alkalinity or the pH of the product, quaternary materials, alcohols, proteins, surfactants, etc., etc. can add to, deplete, enhance, change or otherwise affect the overall odor. Even water can affect the fragrance!
- Compare your final product with the competing product under actual use conditions. Test varying fragrance levels as this can very often affect the perception of the fragrance. Certain materials become much less pronounced at higher dilutions, while others can be perceived at very low levels. The balance of the fragrance then may be shifted and be perceived differently if the levels are not similar. Test both the concentrated product and the diluted forms.

If, after trying the above methods (referring to the customer's attempt to type the fragrance from their own inventory) and the fragrance is not satisfactory, then the customer needs to turn to us for help. A large quantity of product should be provided along with base, listing the product ingredients with any differences noted, the dilution factors involved, MSDS's for both the product and your base and enough time to complete the project. The fragrance house is faced with the same set of variables as you however our fragrance library provides us with extensive choices for typing the odor. Finally, be as complete and open as possible when requesting this type of assistance. If available, the actual fragrance oil would dramatically speed the process and result in a better duplication than by odor evaluation only.

Just remember to test, try and evaluate. This will make your fragrance selections the best they can be.

If you have any other questions about fragrances, please give us a call. We would be happy to help you in any way.

Belle-Aire Fragrances, Inc.