
PERFUME



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WHAT IS PERFUME



- Perfume is a mixture of fragrant essential oils or aromatic compounds, fixatives and solvents used to give the human body, animal, food objects and living spaces a pleasant scent.
- It has been used for centuries by mankind.
- Perfumes are supposed to release a continuous pleasant fragrance that will provide a long lasting feeling of freshness.
- Initially it was only used for religious purpose but now it has become an ornament of sophistication for both men and women.

HISTORY OF PERFUME



- The Egyptians were the first who used perfume for personal enjoyment, but the production of perfume was reserved for the priests and they used it in religious purpose.
- The Greek used an extraordinary amount of perfume and for each part of the body they used a different fragrance for hygiene and cult of the body.
- The history of the Arabs is the fusion of art and science. Two talented Arabian chemists-Jābir ibn Hayyān and Al-Kindi established the perfume industry.
- The Romans used perfume as a part of luxury.

HISTORY OF PERFUME



- The oldest perfumery was discovered on the island of Cyprus 4,000 years ago indicating that perfume manufacturing was on an industrial scale.
- The Hungarians introduced the first modern perfume, made of scented oils blended in an alcohol solution at the command of Queen Elizabeth of Hungary.
- France is the birthplace of modern perfumery. France provided to grow aromatic plants for perfume industry with raw materials. Even today, France remains the centre of the European perfume design and trade.
- England and Germany also contributed a lot in modernization of perfumery.



ADVANTAGES

- Enjoy the wafting fragrance of a well-perfumed person passing by side.
- Smell more pleasing

DISADVANTAGES

- Some VOCs, such as formaldehyde, ethanol, and d-limonene, cause eye, nose, and throat irritation, difficulty in breathing, allergy symptoms and headaches.
- Chemicals may irritate others, especially in tight spaces.
- Contact dermatitis, an allergic reaction in the skin can occur.
- Diethyl phthalate (DEP) an irritant and suspected hormone disruptor that is absorbed through the skin and can accumulate in human fat tissue.

NOTES IN PERFUME



- Perfume is described in a musical metaphor as having three sets of *notes*, making the harmonious scent *accord*.
- These notes are created carefully with knowledge of the evaporation process of the perfume.

The three notes are:

- a. Top notes
- b. Middle notes
- c. Base notes



Each of these levels, however, has its own primary purpose.

NOTES IN PERFUME



a) Top notes:

They are generally the lightest of all notes and recognized immediately after application. Top notes consist of small, light molecules with high volatility that evaporate quickly.

Common fragrances of top notes include citrus (lemon, orange zest), light fruits (grape, berries) and herbs (clary sage, lavender).

b) Middle Notes:

The middle notes, or the heart notes, make an appearance once the top notes evaporate. The middle note compounds form the "*heart*" or main body of a perfume and act to mask the often unpleasant initial impression of base notes, which become more pleasant with time.

Common fragrances of middle notes includes rose, lemon, ylang ylang, lavender, nutmeg and jasmine.

NOTES IN PERFUME



c) *Base notes:*

Base notes or bottom or dry notes appear while middle notes are fading. The base and middle notes together are the main theme of a perfume. Base notes bring depth and solidity to a perfume.

Common fragrances of base notes include sandalwood, vanilla, amber and musk.





CLASSIFICATION OF PERFUMES

- Perfumes are classified into five major groups **on the basis of concentration of fragrance** and duration of lasting:

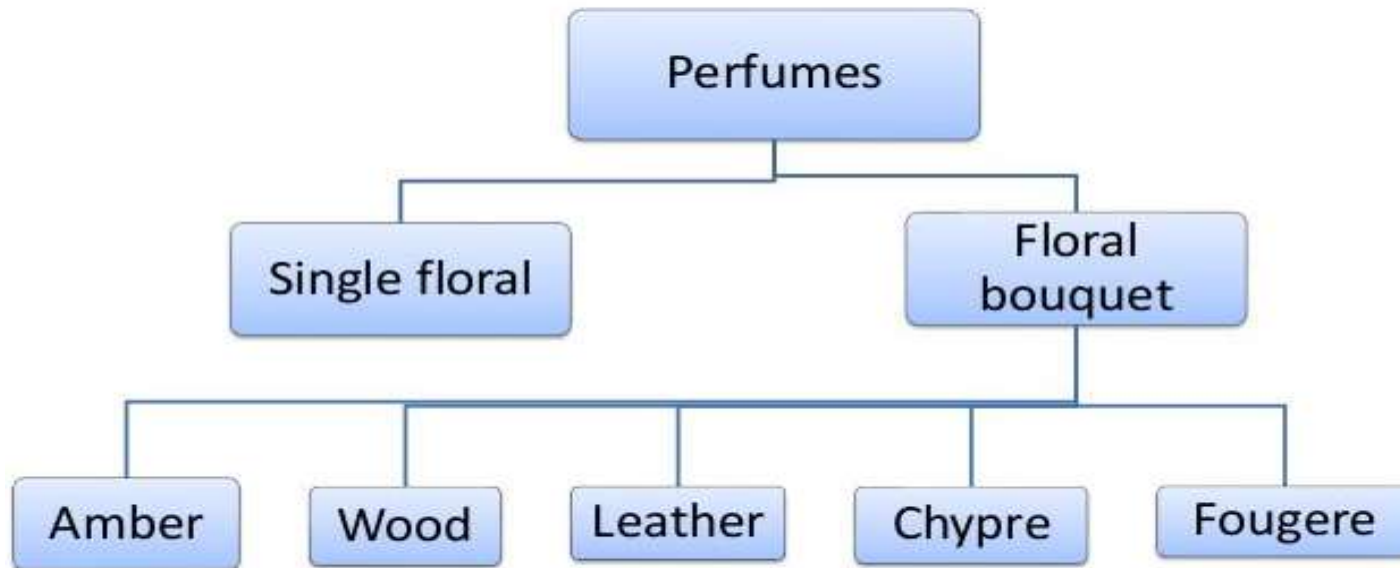
Class	% of aromatic compound	Duration (hours)
Parfume(perfume)	20-30	6-8
Eau de parfume	15-20	4-5
Eau de toilette	5-15	2-3
Eau de cologne	2-4	2
Eau fraiche	1-3	2



CLASSIFICATION OF PERFUMES



Traditional Classification





- **Single floral:** Fragrances that are dominated by a scent from one particular flower. Ex: daisy, sunflower.
- **Floral Bouquet:** containing the combination of several flowers in a scent.
- **Ambery:** A large fragrances class featuring the scents of vanilla and animal scents together with flowers and woods. Can be enhanced by camphorous oils and incense resins.
- **Woody:** Fragrances that are dominated by woody scents, topically of sandalwood and cedar. PATCHOULI, with its camphorceous smell, is commonly found in these perfumes. Ex: sandalwood(chandan)

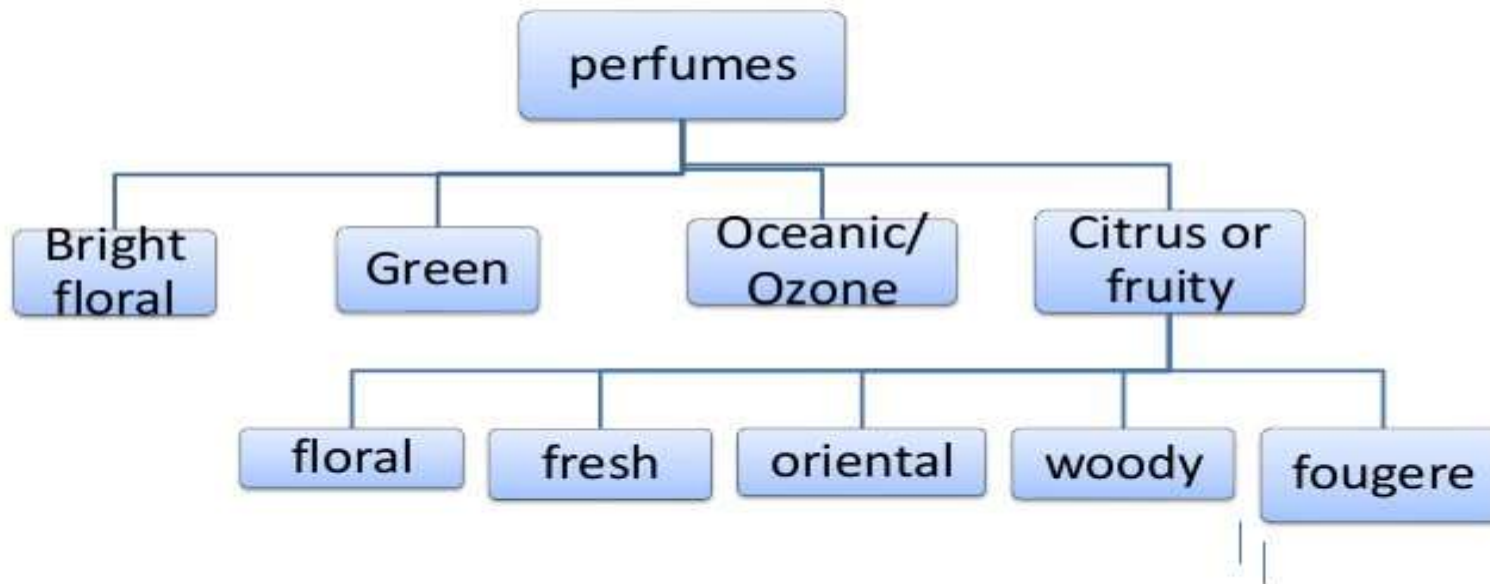


- **Leather:** A family of fragrances which features the scents of honey, tobacco, wood, and wood tars in its middle or base notes and a scent that alludes to leather.
- **Chypre:** French meaning is cyprus. This includes fragrances built on a similar accord consisting of bergamot, oakmoss, patchouli and labdanum. This family of fragrances is named after a perfume by Francois Coty.
- **Fougere:** Means fern in French, built on a base of lavender, coumarin, and oakmass. Many men's fragrances belong to this family of fragrances, which is characterised by its sharp herbaceous and woody scent.

CLASSIFICATION OF PERFUMES



Modern Classification





- **Bright Floral:** Combining the traditional single Floral and Floral Bouquet categories.
- **Green:** a lighter and modern interpretation of the chypre type.
- **Oceanic/Ozone:** The newest category in perfume history, a very clean, modern smell leading to many of the modern androgynous perfumes.
- **Citrus or Fruity:** An old fragrances family that until recently consisted mainly of 'freshening' due to the low tenacity of citrus scents.

AROMATIC SOURCES



Fragrances used in perfume can be found from following sources:

a) Plant Source:

Barks, flowers, blossoms, fruits, resin, roots, seeds, woods etc.

b) Animal Source:

Musk, civet, honeycomb etc.

c) Synthetic Source:

Calone, synthetic terpenes etc.

COMPOSITION OF PERFUME



Perfumes are mainly composed of –

1. Essential oils:

Derived from natural aromatic plant extracts and/or synthetic aromatic chemicals. E.g. limonene, linalool, geraniol, citral etc.

2. Fixatives:

Natural or synthetic substances used to reduce the evaporation rate. E.g. benzyl benzoate, benzyl alcohol etc.

3. Solvents:

The liquid in which the perfume oil is dissolved in is usually 98% ethanol and 2% water.

Alcohol allows fragrance to spread along with it and does not permit microbial growth in the perfume.

MANUFACTURING PROCESS



Perfumes can be manufactured by following steps:

- I. Collection
- II. Extraction
- III. Blending
- IV. Aging



MANUFACTURE OF PERFUME

I. Collection:

Before manufacturing process begins the sources of suitable fragrances are collected in the manufacturing centre.

II. Extraction:

Oils are extracted from plants and other substances by several methods like:

a. Steam distillation:

steam is passed through plant materials held in a still, whereby the essential oil turns to gas. This gas is then passed through tubes, cooled, liquefied and collected.

MANUFACTURE OF PERFUME



b. Solvent extraction:

The flower parts are dissolved in benzene or petrolatum that retains the fragrance of the flower. Alcohol is used to dissolve the fragrance and heated to obtain it after evaporation of alcohol.

c. Enfleurage:

Flowers are kept in glass sheet with grease that absorb the fragrance of flowers.

d. Expression:

The citrus fruits or plants are manually or mechanically pressed until all the oil is squeezed out.

MANUFACTURE OF PERFUME

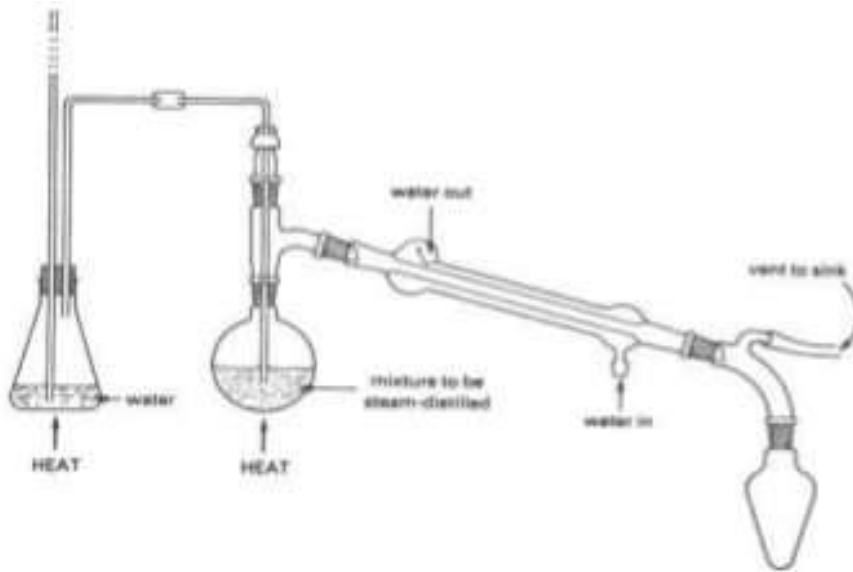


III. Blending:

Once the perfume oils are collected, they are ready to be blended together according to a formula determined by a master in the field, known as a "nose." After the scent has been created, it is mixed with alcohol. Most full perfumes are made of about 10-20% perfume oils dissolved in alcohol and a trace of water.

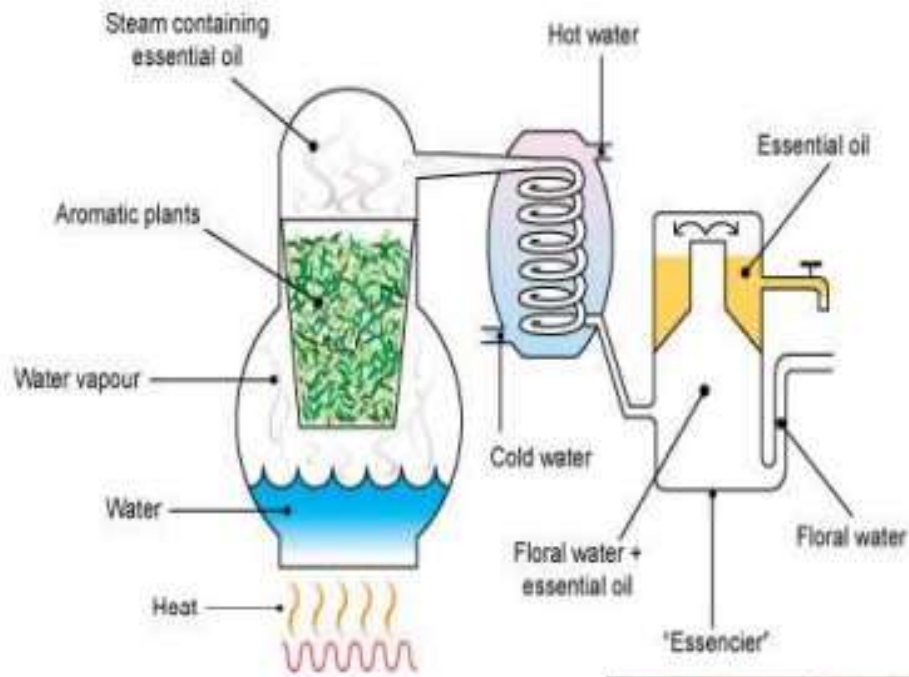
IV. Aging:

Fine perfume is often aged for several months or even years after blending to ensure that the correct scent has been achieved.



Maceration







Fragrance allergenicity

- Allergenicity caused by fragrance to the users when added in cosmetic products has become a key issue and was addressed for the first time in the second meeting of CHIC (Cosmetic Harmonization and International Co-Operation).
- The EU representative addressed the issue of fragrance allergenicity, referring to the SCCNFP (Scientific Committee for Cosmetic Products and Non Food Products) opinion that fragrances are a leading cause of contact allergy and that 24 fragrance ingredients were named as the main cause of fragrance allergenicity.

How can fragrance substance become skin allergens?



- To cause a skin allergy, a certain minimum amount of the fragrance substance must penetrate the skin and attach to a skin protein. Only once the fragrance substance is attached to a skin protein can it provoke a cascade of events in our immune system which ultimately ends in allergy symptoms.
- Skin allergy to fragrance ingredients occurs when an individual's skin has been exposed to a certain minimum dose of a fragrance allergen.
- The symptoms are redness, swelling, basically described as 'skin rash'.



Fragrance Allergen Requirements in the EU Updated

- Annex III of EU Cosmetic Regulation 1223/2009 currently lists 26 allergens, all of which must be listed in the ingredients list on the label or packaging of a product if they are present in concentrations greater than 0.001% in leave-on products and 0.01% in rinse-off products.

In 2011, the Scientific Committee on Consumer Safety (SCCS) published an opinion on fragrance allergens in cosmetic products (SCCS/1459/11). In response to the SCCS opinion, the European Commission published a public consultation on fragrance allergens. The deadline for comments was 14 May 2014.



Fragrance Allergens

- All cosmetics that contain any fragrances will have the word 'parfum' in the ingredients list.
- Fragrance ingredients are tested to assess how likely they are to cause skin reactions.
- There are 26 fragrance ingredients, listed that are considered more likely to cause reactions in susceptible people.
- These must be indicated in the list of ingredients, in addition to the word 'parfum'.
- If their concentration exceeds 0.001% in leave-on products (e.g. a moisturiser) and 0.01% in rinse-off products (e.g. a shampoo).
- This way of labelling cosmetics was introduced in 2005 to help people to make informed choices about what they buy, particularly if they have a diagnosed allergy to a specific fragrance ingredient.
- Such labelling will also aid dermatologists trying to identify the cause of a patient's reaction.

INCI name

Amyl cinnamal

Benzyl alcohol

Cinnamyl alcohol

Citral

Eugenol

Hydroxycitronellal

Isoeugenol

Amylcinnamyl alcohol

Benzyl salicylate

Cinnamal

Coumarin

Geraniol

Hydroxyisohexyl 3-cyclohexene
carboxaldehyde

Anise alcohol

Benzyl cinnamate

Farnesol

Butylphenyl methylpropional

Linalool

Benzyl benzoate

Citronellol

Hexyl cinnamal

Limonene

Methyl 2-octynoate

Alpha-Isomethyl ionone

Evernia prunastri

Evernia furfuracea



INGREDIENTS CAUSING ALLERGIC REACTION

Ingredients	Use	Side effects
Sandal wood	Fragrance	Hypersensitivity
Limonene	Slightly astringent smell	Irritates the skin
Benzyl alcohol	Fixative	Skin irritant causing redness and pain
Benzyl benzoate	Fixative; sweet balsamic odor	Skin irritation like blister, itching, scaling, redness.
Acetone	Solvent	Inhalation cause dryness of mouth & throat
Ethyl acetate	Solvent	Defatting effect on skin & may cause drying & cracking

CONTROVERSIAL INGREDIENTS IN COSMETICS/COSMECEUTICALS





ROOT + REVEL

THE TOP 10

Most Toxic

SKINCARE INGREDIENTS
TO AVOID



HYDROQUINONE



COAL TAR



SLS / SLES



PARABENS



FRAGRANCE



TRICLOSAN



MINERAL OIL



PHthalATES



ALUMINUM



FORMALDEHYDE



PARABENS (Isobutylparaben, Butylparaben, Methylparaben, Propylparaben)

- **What they are:** A group of preservatives used in many cosmetics to keep them fresh and germ-free (usually listed as methyl-, butyl-, and propyl-paraben on the ingredient list).
- **The controversy:** In 2004, study detected parabens in samples of cancerous breast tissue. Parabens are also known to mimic estrogen in the body, making them a possible hormone disrupter.



- **Why they're bad:** These preservatives are used to prevent bacteria, yeast, and mold from growing in your makeup.
- However, they also mimic estrogen in the body and could increase the expression of genes that may cause human breast tumor cells to grow.
- **Where you'll find them:** Look for anything that ends in "paraben" on the ingredient label-especially in deodorant, moisturizer, and makeup.
- For trustworthy makeup that's still beautiful, Tarte cosmetics are all paraben-free.



- **The latest news:** Parabens are readily absorbed by your body and flushed out, but it's still unclear whether they pose any long-term health risks.
- **One thing that is certain is how we're being exposed to them:**
- A study in the Journal of Exposure Science and Environmental Epidemiology found that pregnant women who used more personal-care products had a higher amount of parabens in their urine;
- The biggest contributors were lotions, cosmetics, hair gels, and fragrances.

FORMALDEHYDE

- Formaldehyde is a colorless, strong-smelling gas used in a wide range of industries and products including building materials, walls, cabinets furniture and personal care products
- **FOUND IN:** Nail polish, nail glue, eyelash glue, hair gel, hair-smoothing products, baby shampoo, body soap, body wash, color cosmetics





FORMALDEHYDE LIBERATORS

- The FDA reopened an investigation on parabens in 2005, and came to the same conclusion: Since parabens are typically used in concentrations far below what they deem safe (up to 25 percent) is safe.
- Typical levels in products are between 0.01 to 0.3 percent, they don't believe there is enough evidence to be concerned about their use in cosmetics.
- **Why they're bad:** Formaldehyde is classified as a probable human carcinogen by the Environmental Protection Agency, and preservatives like Diazolidinyl urea, DMDM Hydantoin, Quaternium-15, and sodium hydroxymethyl glycinate.



- All release the carcinogen into hair and skin products to keep bacteria at bay.
- So while your shampoo stays bacteria-free, you could experience an allergic reaction, dermatitis or other skin irritation, eye damage, headaches, and dizziness.
- “These products continue to release formaldehyde over the life of the product,” says Karen Behnke, CEO and founder of Juice Beauty, so the sooner you switch, the better.

Where you'll find them: They're incredibly common in products like shampoos, conditioners, skin moisturizers, cleansers, hand cream, hair gel, and shaving cream.

- Juice Beauty PomSmooth Shampoo repairs and hydrates color-treated hair without the help of these preservatives.
- Recognized by the EPA as a carcinogen, it's linked to lung cancers, Hodgkin lymphoma and leukemia, and myeloid leukemia.
- It permeates through inhalation and can also cause eye, nose, and throat irritation; reproductive and developmental toxicity; asthma; neurologic and behavioral toxicity; and immunological toxicity.
- It's banned for use in cosmetics in Sweden and Japan.

1,4 DIOXANES



- **Why it's bad:** This petroleum-derived carcinogen ends up in personal care products as a byproduct of the chemical process that creates sulfates.
- The International Agency for Research on Cancer ranks it as a possible carcinogen, and the National Toxicology Program also calls it a reasonably anticipated carcinogen.
- It remains on California's Proposition 65 list of substances known to cause cancer or birth defects, and is known (at the very least) to cause skin irritation.
- Because testing of final products is not required by the US government, 1,4-dioxane is a common hidden ingredient in cosmetics and personal care products.
- 1,4-dioxane is found in products that create suds, like shampoo, liquid soap, and baby bubble bath.
- EWG's analysis suggests that 97 percent of hair relaxers, 57 percent of baby soaps, and 22 percent of all products in Skin Deep database may be contaminated with 1,4-dioxane.



- The ethoxylation process, where carcinogenic ethylene oxide added to make harsh ingredients milder, also produces 1,4-dioxane as a byproduct, another hidden ingredient in cosmetics and personal care products.
- If a manufacturer does test for 1,4-dioxane contamination and subsequently does not use vacuum-stripping method to remove it, the dangerous chemical remains in the final product
- 1,4-dioxane is rated 8 by EWG; the International Agency for Research on Cancer has classified it into group 2B, meaning that it is “possibly carcinogenic to humans;” and it has been included on the California Proposition 65 “Chemicals Known to the State to Cause Cancer” list.

OTHER REASONS OF USING PERFUME



- To mask body mal odor
- To complement one's mood and please one's senses
- Helps to get rid of anxiety and depression
- To deepen spirituality
- To soothe someone
- For religious purpose
- To be fresh and chilled all day long

LEADING PERFUME BRANDS



There are several leading expensive brands of perfume around the world that are not available in Bangladesh. E.g.

- Clive Christian no.1 (price- \$2150 per oz)
- Channel grand extrait (\$4200 per oz)
- Shalini Perfume (2.2 oz bottle \$900)
- Chanel No. 5 (per 100 ml \$ 234)

BRANDS AVAILABLE IN BANGLADESH



Brands Available For Men

Brand	Product
Calvin Klein	a. Be b. Obsession c. Eternity d. One
Gucci	a. Gucci Envy b. Made to Measure c. Gucci by Gucci
Mont Blac	a. Presence b. Ferrari

Brands Available For Women

Brand	Product
Paris Hilton	a. Heiress b. Dazzle c. Just Me
Blue lady	Blue lady
Calvin Klein	a. Beauty b. Eternity c. Euphoria

STORAGE OF PERFUMES

- Fragrance compounds in perfumes degrades or break down if stored improperly in the presence of heat, light and oxygen.
- An open bottle will keep its aroma intact for several years, as long as it is well stored.
- Perfumes are best preserved when kept in light-tight aluminum bottles and are refrigerated at a relatively low temperatures between 3-7°C.
- Sprays have the advantage of isolating fragrance inside a bottle and preventing it from mixing with dust, skin, and detritus(waste or debris) which would degrade and alter the quality of perfume.