

Unit 3-Perfumes

- Introduction :Perfumes
- Classification of perfumes
- Perfume ingredients listed as allergens in EU regulation.
- Controversial ingredients: Parabens, formaldehyde liberators, dioxane.

Introduction :Perfumes

- The word *perfume* derives from the Latin "*per fumum*", meaning *through smoke*.
- Perfumery, or the art of making perfumes, began in ancient Mesopotamia and Egypt and was further refined by the Romans and Persians
- The first modern perfume, made of scented oils blended in an alcohol solution, was made in 1370 at the command of Queen Elizabeth of Hungary and was known throughout Europe as Hungary Water
- France quickly became the European center of perfume and cosmetic manufacture. Cultivation of flowers for their perfume essence, which had begun in the 14th century

- **Perfume** is a mixture of fragrant essential oils and aroma compounds, fixatives, and solvents used to give the human body, objects, and living spaces a pleasant smell.
- Perfume is associated in many cultures with the sensual and romantic side of life.
- Perfumes are usually formulated in alcohol, however, these may be cloudy solutions.
- **Eau de perfumes** are usually formulated in oils and are normally clear and generally have an amber color due to the natural
- color of the oils.

Essential oils for perfumes

Classified according to volatility, or the rate they diffuse into the air:

- 1. Base notes**, are the **least volatile** and will last for a longer period of time. These are the aromas that will last for several hours or longer. Oils like frankincense, myrrh, sandalwood and vanilla are used as base note
- 2. Middle notes** tend to be floral or spicy and give body to blends. These may last for 30 minutes to about an hour. Ex-clove, ylang-ylang, lavender, jasmine, rose, and geranium.
- 3. Top notes** are the **most volatile** and are first perceptible odors from a perfume. Top notes are usually of short duration lasting a few minutes to maybe 30 minutes. Ex- bergamot, juniper berry, cedarwood, lavender, geranium, gardenia, cinnamon, and clove.



Lime, lemon,
maderin orange, grass,
apple, pineapple, peach,
raspberry, juniper berry,
gardenia, cinnamon

TOP NOTES: citrus and fruity

rose, jasmine, violet,
geranium, clove,
ylang-ylang

MIDDLE NOTES: floral

sandalwood,
cedarwood,
frankincense,
myrrh, musky,
vanilla,

BASE NOTES: woody

The fragrance pyramid

Perfume types

- reflect the concentration of aromatic compounds in a solvent like ethanol or a mix of water and ethanol. The concentration by percent/volume of perfume oil is as follows:
- **Perfume extract (Extrait)**: 15-40% (IFRA: typical 20%) aromatic compounds (Note: IFRA is the International Fragrance Association)
- **Eau de Parfum (EdP)**, Parfum de Toilette (PdT): 10-20% (typical ~15%) aromatic compounds. Sometimes listed as "eau de perfume" or "millésime".
- **Eau de Toilette (EdT)**: 5-15% (typical ~10%) aromatic compounds
- **Eau de Cologne (EdC)**: Chypre citrus type perfumes with 3-8% (typical ~5%) aromatic compounds
- **Splash and After shave**: 1-3% aromatic compounds

Classification of Fragrance Materials

Perfumery Materials: Classification on basis of their origin

NATURAL SOURCE

- 1. Essential Oils** – Citronella oil, Lemon grass oil, Sandalwood Oil, Orange Oil, Eucalyptus Oil, Lavender Oil, Clove Oil, Patchouli Oil etc.
- 2. Semi-synthetic Materials** – Origin will be natural – Subject to reactions: Ionone, Hydroxycitronellal, Vanillin
- 3. Animal Origin** – Musk, Civet

SYNTHETIC FRAGRANCE CHEMICALS

- Synthetic fragrance chemicals began in the first half of the last century and ran parallel to the rapid development of organic chemistry
- Some plant fragrance materials are difficult to extract from natural sources and therefore chemists have successfully produced them synthetically
- Total range of synthetic fragrance is very vast and many of them are made from coal tar and petroleum routes.

Purely Synthetic Materials –

Lilial ,

Aldehyde C12MNA,

Amyl Cinnamic Aldehyde Galaxolide etc.

Classification by Functional Groups

- Hydrocarbons – Open, Cyclic, Aromatic (Saturated or unsaturated)
- Alcohol – Primary, secondary, tertiary
- Aldehydes / Ketones
- Esters
- Ethers
- Lactones
- Phenols
- Halogen containing compounds – Rosecrystals
- Nitrile-Geranyl nitrile
- Sulphur contg – Dimethyl Sulphides

Classification on --FRAGRANCE FAMILY

1. FLORAL

2. CITRUS

3. FRUITY

4. WOODY

5. HERBAL

6. SPICY

7. MUSKY / ANIMALIC

8. ALDEHYDIC

FLORALS

ROSE JASMINE

LAVENDER

WHITE FLOWER (MUGUET,LILY ,
TUBEROSE)

CITRUS

- **LEMON**
- **ORANGE**
- **BERGAMOT**
- **GRAPE FRUIT**

WOODY

- CEDARWOOD
- SANDALWOOD
- VETIVER
- PATCHOULI

Example : Fahrenheit and Samsara



HERBAL

- LEMONGRASS
- CITRONELLA
- PEPPERMINT
- SPEARMINT

A vibrant, artistic illustration of various spices. The composition includes cinnamon sticks, whole cloves, nutmeg, and other aromatic herbs, all rendered in a rich, textured style. The word "SPICY" is prominently displayed at the top in a colorful, rainbow gradient font.

SPICY

- CINNAMON
- CLOVE
- NUTMEG

Example : Opium, Tommy Hilfiger

ALDEHYDIC

- **Aldehyde C-10**
- **Aldehyde C-11**
- **Aldehyde C-12**
- **Aldehyde C-14**

Example : Chanel
no.5

ANIMALIC

- **CIVET**
- **MUSK**
- **SYNTHETIC
MUSKS**

Conclusion

- Fragrances are made by blending individual fragrant materials
- These Ingredients can be Natural or Semi-synthetic or synthetics
- Materials can be classified based on their Origin,
- Chemical Structure and Functional groups The most common and practical approach –
- Materials are generally classified based on their odour character