Fragrance & Flavour Creation

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Magical & Evocative

They can bring to

- life long – forgotten memories
- Influence perception of the present
- Conjure images of the future
Raw Materials for Fragrance & Flavour

- **Natural**
  - Essential Oils
  - Oleoresins
  - Isolates
  - Resinoids
  - Absolutes
  - Concretes
  - Resins
  - Gums
  - Extracts

- **Synthetic**
  - Aroma Chemicals
  - Synthetic Essential Oil Specialties
Aromatic Plants

Extraction & Processing

- Oleoresin
- Essential Oils
- Resinoids
- Resins & Gums
- Concrete & Absolute
- Isolates
- Extracts
- Attars
Essential Oil

- Odour/Aroma/Essence
- Natural/Plant
- Oil

*e.g.* Mustard Oil

- Volatile

*e.g.* Kerosene Oil
Concrete

Solvent Extraction of Flowers

Oil + Resin + Gums + Waxes + Colour

Intermediate Product
Absolute

- Extracted out of concrete
- Product of Direct use
- More strong & long lasting than Essential oil
Oleoresin

- Oil + Resin
- Solvent Extraction of Spices
Resins & Gums

- Natural Exudates from Plant
- Resin is Insoluble in water & soluble in organic solvents
- Gums are soluble in water
Resinoids

- Solvent Extraction of Resins & Gums
- Very long lasting
- Good for agarbatti & Dhoopbatti
Attars may be defined as the distillates obtained by the hydrodistillation of flowers and/or herbs & spices over Sandalwood oil or other materials like DOP, DEP, Paraffin etc.
Isolates

Components Isolated from Natural Extract

Simple Physical Means
Solvent Extraction

- Oleoresin
- Concrete
- Absolute
- Resinoid
Natural Aroma Extract

Are they utilized as such?

NO

Processing

Blending

Product
What a good Fragrance is?

It should Smell without any Smell
Flavour = Fragrance + Taste
It is a harmonious combination comprising of natural and/or synthetic ingredients, with stability, diffusiveness and ability to get fixed in required cosmetic and other products.
A combination of natural and/or synthetic ingredients with capability to get fixed in required product to give mingled but unitary experience which includes taste, smell and sensory perception, particularly mouth feel.
Classification of Fragrant Raw Materials

- Based on Odour Group
- Based on Volatility
## Classification based on odour groups

<table>
<thead>
<tr>
<th>Odour group</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rose</td>
<td>Rose</td>
</tr>
<tr>
<td>Jasmine</td>
<td>Jasmine</td>
</tr>
<tr>
<td>Orange</td>
<td>Orange Flower</td>
</tr>
<tr>
<td>Tuberose</td>
<td>Tuberose</td>
</tr>
<tr>
<td>Violet</td>
<td>Violet</td>
</tr>
<tr>
<td>Balsamic</td>
<td>Vanilla</td>
</tr>
<tr>
<td>Spicy</td>
<td>Cinnamon</td>
</tr>
<tr>
<td>Caryophyllaceous</td>
<td>Clove</td>
</tr>
<tr>
<td>Camphored</td>
<td>Camphor</td>
</tr>
<tr>
<td>Lemony</td>
<td>Lemon</td>
</tr>
<tr>
<td>Minty</td>
<td>Menthol</td>
</tr>
<tr>
<td>Anisic</td>
<td>Aniseed</td>
</tr>
<tr>
<td>Almondy</td>
<td>Bitter Almond</td>
</tr>
</tbody>
</table>
## Classification Based on Volatility

<table>
<thead>
<tr>
<th>Volatility</th>
<th>Note</th>
<th>Position on Poucher’s Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Top</td>
<td>1-14</td>
</tr>
<tr>
<td>Medium</td>
<td>Middle</td>
<td>15-60</td>
</tr>
<tr>
<td>Least</td>
<td>Base</td>
<td>61-100</td>
</tr>
</tbody>
</table>
Study of Fragrant Raw Materials

- Daily identity Parade - *Indispensable*
- One nose can not be better than another
- It is the matter of olfactory memory
- Study with contrast in odour
- Study with similarity of odour
  - Relatively
  - Absolutely
  - Actively
**A Note on Notes of Perfumery**

**Base Note**
- Responsible for success of fragrance, if any
- Initially they give unpleasant note
- Subsequently they are good in odour
- Accords between bases leads to success in Perfumery

**Middle Note**
- It helps to bind the base & top note together
- It acts as a modifier in the blend

**Top Note**
- It imparts very pleasant note on opening of bottle
- Responsible for diffusiveness of the blend
Creation of Fragrance

Technical requirements

- Harmonious
- Stable
- Diffusive
- Capable to get fixed in required product
- Immiscible in Water (except in few cases)
Creation of Flavour

Technical requirements

- Harmonious
- Stable
- Capable to get fixed in required product
- Miscible in Water (except in few cases)
Modes of Fragrance & Flavour Formulation

- Existing formulation within the company.
- Technical literature on chemistry of raw materials like essential oils, oleoresins etc.
- Research reports on chemistry of fragrance & flavour components in target materials.
- Personal records and practical experience of fragrance & flavour profile.
General Guideline
Fragrance Formulation

- **Top Note**  20-25%
- **Middle Note**  20-30%
- **Base Note**  40-50%
Safety & Regulatory aspects

**Fragrance**
IFRA
International Fragrance Association

**Flavour**
FEMA
Flavouring Extracts Manufacture’s Association
# Fragrance in Alcoholic Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Fragrance</th>
<th>Grade of Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfume</td>
<td>15-30 %</td>
<td>90-95%</td>
</tr>
<tr>
<td><em>Eau de Perfume</em></td>
<td>8-15%</td>
<td>80-90%</td>
</tr>
<tr>
<td><em>Eau de toilette</em></td>
<td>4-8%</td>
<td>~80%</td>
</tr>
<tr>
<td><em>Eau de cologne</em></td>
<td>3-5%</td>
<td>~70%</td>
</tr>
<tr>
<td><em>Splash Cologne</em></td>
<td>1-3%</td>
<td>~70%</td>
</tr>
<tr>
<td><em>Eau Fraiche</em></td>
<td>~3%</td>
<td>~80%</td>
</tr>
</tbody>
</table>
Thanks for patient hearing & request for more questions.
# Fragrance Creation

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenyl ethyl Alcohol</td>
<td>42</td>
</tr>
<tr>
<td>Citronellol</td>
<td>10</td>
</tr>
<tr>
<td>Geraniol</td>
<td>10</td>
</tr>
<tr>
<td>Phenyl Ethyl Acetate</td>
<td>5</td>
</tr>
<tr>
<td>Cinnamic Alcohol</td>
<td>5</td>
</tr>
<tr>
<td>Sandal Mysore Coeur</td>
<td>10</td>
</tr>
<tr>
<td>Fixolide</td>
<td>10</td>
</tr>
<tr>
<td>Clove Oil</td>
<td>3.7</td>
</tr>
<tr>
<td>Geranium Oil</td>
<td>4</td>
</tr>
<tr>
<td>Rose oxide</td>
<td>0.2</td>
</tr>
<tr>
<td>Aldehyde C11</td>
<td>0.1</td>
</tr>
</tbody>
</table>