

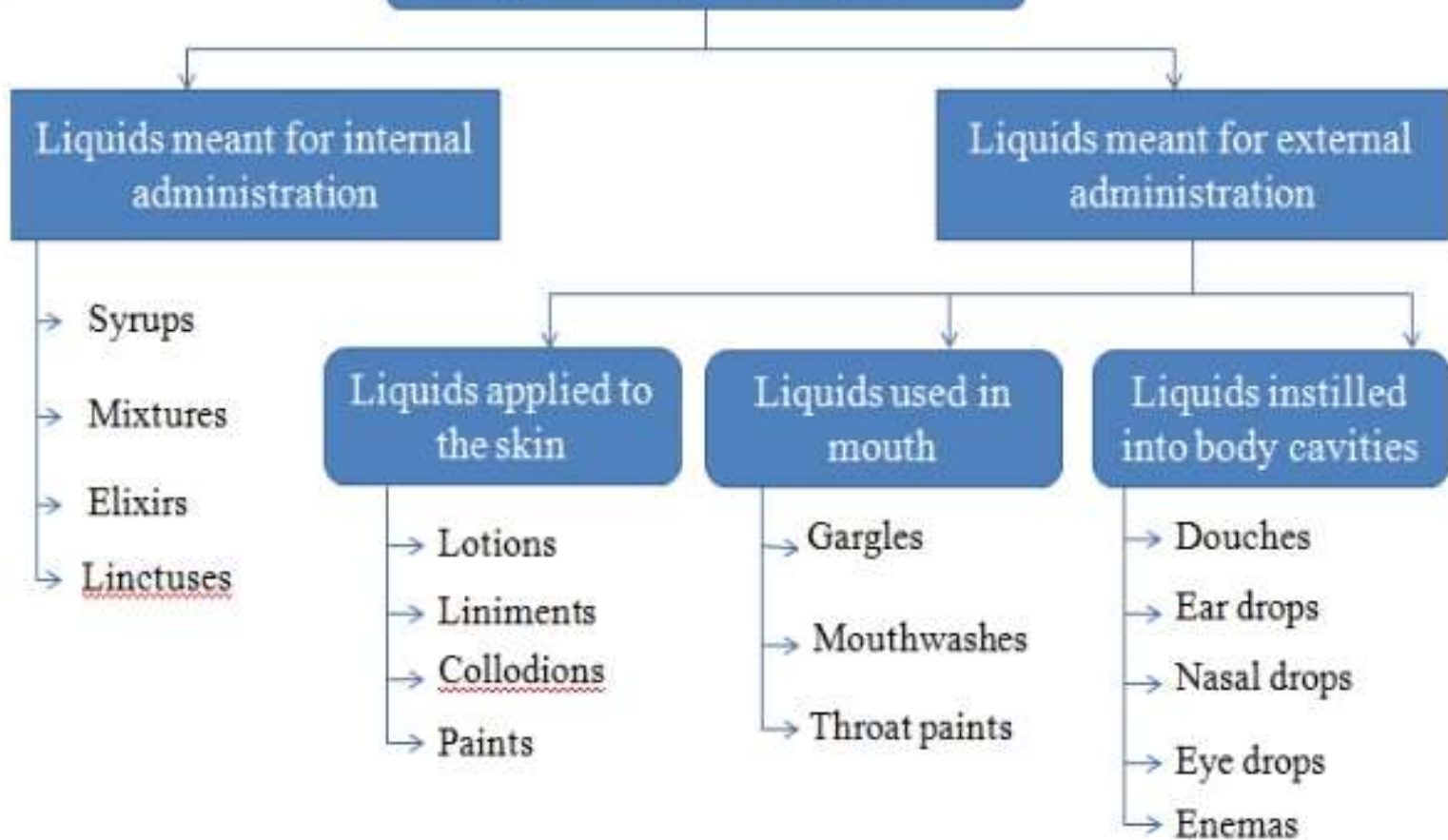
MONOPHASIC LIQUID DOSAGE FORM

Monophasic liquid dosage form

- Monophasic L. D.F refers to liquid preparation in which there is only '**One phase**'.It is represented by **true solution**.
- **True solution:-** clear homogenous mixture that is prepared by dissolving solid, liquid or gas in a liquid. Solution is basically composed of 2 ingredients:-
 - Large amount:- solvent.
 - Small amount:- solute.

Classification

Monophasic Liquid Dosage Forms





Syrups

- A syrup is a concentrated or nearly saturated solution of sucrose in purified water.
- The concentration of sugar is 66.7% w/w.
- Sweet and viscous preparations.
- 2 types of syrups
 - A. Medicated syrup- contains medicinal substances and
 - B. flavoured syrup- contains aromatic or flavoured substances

- **Advantages:-**

- Retards oxidation because it is partly hydrolyzed (break down by chemical reaction with water) into reducing sugars as like laevulose and dextrose.
- Prevents decomposition of various vegetable substances because of **high osmotic pressure**.
- **Palatable.**

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- **Formulation of syrups:-**
 - **Vehicle:-** Purified water, Potable water is not used as it contains both volatile and nonvolatile impurities.
 - **Additives:-**
 1. **Chemical stabilizers:-** Glycerin, Sorbitol, Propylene glycol added to **prevent crystallization** of sucrose.
 2. **Surfactants** like **tween** used to dissolve ingredients to make a clear syrup.
 3. **Coloring agent:-** coal tar dyes as like amaranth , compound tartrazine.

4. Flavoring agent:- **Tinctures:-** lemon tincture,
ginger tincture.

Fruit Juice:- Raspberry Juice, Wild Cherry.

Essence:- Vanilla.

5. Preservatives:- benzoic acid, sodium benzoate, methyl paraben etc. may be used.

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- **Method of Preparation**
 - 1. Simple solution method
 - 2. By process of extraction

1. By simple solution method

eg. Simple syrup I.P

Rx

Sucrose		667 g
D.W	Q.S	1000 g

Method :

1. Weigh the beaker empty and weigh the sucrose in it
2. Add small quantity of water with stirring to dissolve the sucrose on gentle heating (using water bath).
3. Weigh again to complete the weigh by hot water

Simple syrup U.S.P.

Rx

Sucrose		850 g
D.W	Q.S	1000 ml

Methods :

Prepare by using boiling water

2. By Process Of Extraction

Ex.Tolu Syrup I.P

Rx

Tolu balsam	12.5 g
Sucrose	66.7 g
Purified water	100 g

- MOP:

1. Add tolu balsam to purified water in tared vessel
2. Cover vessel lightly & boil for half an hour
3. Cool add sucrose
4. Heat on water bath to dissolve sucrose.

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- **Storage:-** well dried, completely filled in well Stoppard container in cool dark place temperature **not above 25 ° C.**
 - The glass bottles fitted with polypropylene moulded or black thermosetting plastic screw closures are commonly used for storage of bottles.
 - The bottles may be colourless or amber coloured (light resistant container)

Elixirs

- Clear sweetened, aromatic, **hydro alcoholic liquids** intended for **oral use**.
- **Ethyl alcohol (5-40 %)** main ingredient.
- Water, glycerin or propylene glycol, flavoring agent, coloring agent and some preservatives are used.
- **Medicated elixirs** contain potent drug such as antibiotics, antihistamines and sedatives.
- **Flavored elixirs** are non medicated and are used as flavours and vehicle.

- **Formulation of elixir:-**

1. Vehicle:- water, alcohol, syrup, glycerin, sorbitol, propylene glycol.

The water is used to dissolve the majority of ingredients of elixir.

The flavouring agent containing essential oils are easily soluble in alcohol.

Alcohol at a concentration of 5-40% is used to make a clear solution.

glycerin, sorbitol, propylene glycol are also used as vehicles to dissolve certain drugs which are **not soluble in water and alcohol**.

- **Additives:-**

- 2. **Chemical Stabilizers:-** citric acid added in neomycin elixir to adjust the pH between 4-5 to prevent darkening of elixir. Disodium edetate may be used to squeeze heavy metals that catalyze decomposition of neomycin.

- **Coloring agent:-** coal tar dyes eg. amaranth , compound tartrazine, green S. and tartrazine.
- **Flavoring agent:-** Black currant syrup, Raspberry Syrup, Lemon Syrup, Orange Syrup.
- **Preservatives:-** 20 % alcohol, propylene glycol and glycerol as vehicle inhibits growth of microbes. Chloroform water in double strength , benzoic acid and methyl paraben can also be used as preservatives.

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- **Storage:-** well filled well closed air tight glass bottles having screw caps. Elixirs are required to be stored in a cool place and protected from light.

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- Example

Piperazine Citrate Elixir IP

- Piperazine citrate 180g
- Chloroform spirit 5ml
- Glycerine 100ml
- Orange oil 0.25 ml
- Syrup 500ml
- Purified water up to 1000ml
- Method:- Dissolve the piperazine citrate in part of purified water. Add the orange oil , glycerine, syrup, chloroform water and sufficient water to produce required volume.



Thank You