Spirits and Elixir

Spirit: are alcoholic or hydro-alcoholic solutions of volatile substances.

Previously it was prepared by distillation but now a days generally prepared by simply dissolving the volatile substance in alcohol.

Some spirits are:

1) Therapeutic agent of value
2) Flavoring agent

The amount of volatile material in spirit varies greatly and no fixed percentage can be given.

In all cases the volatile oil content of the official spirit is much greater than that of the corresponding aromatic water.

Also the alcoholic content varies, the lowest percentage of alcohol is in the aromatic spirit of ammonia (62-68%) which is used internally as carminative.

The highest alcohol content is in camphor spirit (80-87%) which is used externally.

Commonly the percentage of alcohol should be not less than 60% and should not reach 100%.

The volatile oil in aromatic water present in small quantities because these small quantities are enough to make saturated solution.

However, the percentage of alcohol depend upon the quantity and type of volatile oil.

Preparation of spirit by:

1) Simple solution
2) Maceration
3) Chemical reaction
4) Distillation

Preparation of spirit and it's problems

1) In the preparation of spirit, it must be kept in mind that the oil dissolved in alcohol are precipitated causing turbidity when the solution are mixed with water, in order to avoid this turbidity, water except that specified in the formula should be avoided and all the equipment should be dried and the filter paper should be moistened with alcohol. So water must be kept away during the preparation of spirit because volatile substance (oil) is precipitated in water.
2) Spirit should be stored in light resistant container and in a cool place to prevent evaporation & volatilization of alcohol or active principle

Uses of official spirit

1) Carminative
2) Antacid
3) Mild reflex circulating stimulant (camphor spirit) as counter irritant
4) Flavoring agent

Prescriptions

℞ **Aromatic spirit of ammonia**

Ammonium carbonate	34 g
Dilute solution of ammonia	90 ml
Oil of lemon	10 ml
Oil of lavender	1 ml
Oil of myristica	1 ml
Alcohol	700 ml
D.W. q.s.	1000 ml

Procedure: dissolve the solid material in the diluted solution of ammonia with little amount of water while the oil is dissolved in alcohol with little amount of water also, then add the aqueous solution to the alcoholic solution after filteration of each solution (this addition to avoid the dilution of alcohol which cause the precipitation of volatile oil) . Used as Carminative

℞ Spirit of camphor

Camphor 100 gm

Alcohol q.s. 1000 ml

Procedure: Dissolve camphor in ¾ of alcohol, filter and complete the volume by alcohol.

Used as counter irritant for temporary relief of minor aches and pains of muscles and joints associated with simple backache, arthritis, strains, bruises and sprains, may be used internally as mild expectorant.

℞ Compound spirit of cardamom

Oil of cardamom 1 ml

Oil of cinnamon 1 ml

Oil of clove 1 ml

Anethol 0.1 ml

Oil of caraway 0.1 ml

Alcohol q.s. 10 ml

Mitt 20ml

spirit of anise

Oil of anise 100 ml

Alcohol q.s. 1000 ml

Mitt 20ml

Elixirs

Defined as sweetened hydro-alcoholic solution containing flavoring material (as volatile oil), it may contain medicinal substances , their primary solvents are alcohol and water.

Elixirs are distinguished from other classes of preparation by the presence of sugar and alcohol in the finished product.

However several of the official elixirs, may not contain sugar or any other sweetening agent.

Some commercial elixirs do not contain alcohol, and in some elixirs sugar has been replaced by saccharin.

In the official elixir the alcohol content varies from 4-40% (generally there is just enough alcohol to keep the volatile oil or other medicinal substance in solution)

The official elixirs are used most widely due to:

1) Their pleasant flavor due to the presence of sugar and volatile flavoring agent
2) Their relative stability
3) The ease with which most of them are prepared

The elixir sugar content is lower than that of syrup .

Preparation of elixir

Elixirs are usually prepared by simple solution with agitation and \by the admixture of two or more liquid ingredients. Alcohol soluble and water soluble component are generally dissolved separately in alcohol and in purified water, respectively. Then the aqueous solution is added to the alcoholic one rather than the reverse in order to avoid the rapid dilution of alcoholic solution which cause ppt of the alcohol soluble component(to maintain the highest possible alcoholic strength at all time so minimal separation of alcoholic component will occur).

Differences between spirit and elixir

1-Elixir contains sweetening agent.

2- Elixirs are more viscous than spirit and may need preservative(10-12.5% alcohol is enough as preservative).

3-Elixirs are used internally only while spirit used externally (camphor spirit)and internally (compound spirit of ammonia).

4- In elixir primary solvent are alcohol and water sometime water only example lactated pepsine elixir , in sprit primary solvent is alcohol.

5-The % of alcohol is less than spirit (62-68%)while in elixir (4-40%) .

Classification of elixir

A-Non medicated elixir

Used as palatable vehicle, the purpose of this type is to make it possible for medicine to be dispensed in palatable form.

1-Aromatic elixir

2- Aqueous elixir of glycerhiza

3- Compound benzaldehyde elixir.

4- Isoalcoholic elixir

5- Red aromatic elixir

B-Medicated elixir

These elixir have therapeutic action and this group further classified according to their therapeutic activity

1- Antihistaminic elixir example allermine elixir(diphenhydranmine HCL) and allerfine elixir (chlorpheniramine elixir)
2- Expectorant example bisolvon and terpine elixir
3- Sedative and hypnotic example phenobarbital elixir,sodium phenobarbital and hypnoral elixir.
4- Digestive Elixir ex: pepsin elixir

5- B-plex , Ferro B , Toniphos Elixir
6- Miscellaneous medicated Elixir (Digoxin, dexon, acetaminophen, piperazin citrate, antipyrol)

Rx Phenobarbital elixir

Phenobarbital 4 g

Tr. of sweet orange peel 30 ml (flavouring and sweetening agent)

Solution of amaranth 10 ml (colouring agent)

Alcohol 125 ml

Glycerine 450 ml (co-solvent, stability, and viscosity)

Simple syrup 150 ml (sweetening agent)

D.W. q.s. 1000 ml

Mitte 20 ml

Sig. ʒ i o.n.

Procedure: dissolve phenobarbital in alcohol, add the tr. of orange peel, then glycerin then syrup then amaranth, add sufficient water to produce final volume, mix well and filter if necessary (prefer by cotton before adding the coloring agent)

Use : sedative in low dose and hypnotic in high dose

Rx Pediatric paracetamol elixir

Paracetamol 120 mg

Alcohol 0.5 ml

Chloroform spirit 0.1 ml

Propylene glycol 0.5 ml (solubility, stability and viscosity)

Conc. of raspberry juice 0.125 ml (colour and flavour)

Amaranth solution 0.01 ml

Inverted syrup 1.375 ml (sweetening agent)

Glycerol q.s. 5 ml

Procedure: dissolve paracetamol in alcohol then add chloroform spirit, PG, raspberry juice, amaranth and inverted syrup then complete the volume by glycerin (filter by cotton if required)

Use: analgesic and antipyretic

Note: paracetamol and phenacetin require suspending agent when ordered in mixture form (insoluble in water) or making elixir.

Rx Aromatic Elixir (non-medicated) (Home Work)

Compound orange spirit 12 ml

Syrup 375 ml

Talc powder 30 gm

Alcohol } a.a Q.S 1000 ml
water

Mitt. 50 ml