**LINIMENTS**

**LAB. TWO**

**LINIMENTS**

Are alcoholic or oleaginous solutions or emulsions of various medicinal substances intended for external application to the skin with rubbing.

**Notes:**

* The vehicle for liniment should be selected according to the following :
1. The type of action desired .e.g, Liniments with alcoholic or hydro-alcoholic vehicles are useful in instances in which rubefacient,counterirritant,or penetrating action is desired.While oleaginous liniments are employed primarily when massage is desired.
2. Solubility of the desired components in the various solvents.
* Liniment that are emulsions or that contain insoluble matter must be shaken thoroughly before use to ensure an even distribution of the dispersed phase.
* For oleaginous liniment the solvent may be fixed oil or volatile oil or it may be a combination of fixed and volatile oils.

**White liniment (emulsion type liniment)**

**Rx**

Ammonium chloride 12.5 g

Dilute ammonia solution 45 ml

Oleic acid 83.3 ml

Turpentine oil 250 ml

Water 625 ml

Ft. emulsion

**Procedure:**

1. Mix turpentine oil and oleic acid in a bottle.
2. Add an equal volume of warm water (50 ºC) to a dilute ammonia solution. Then add this dilute solution (in small amount to the oily liquid, shake vigorously after each addition.
3. Dissolve the ammonium chloride in the rest of the water and add it to the bottle (in small amount) and shake vigorously after each addition.

**Notes:**

* In white liniment, turpentine oil is emulsified with NH4 oleate produced from oleic acid and dilute ammonium solution, and this emulsifying agent (ammonium oleate) is oil in water emulsifying agent (monovalent soap) but the preparation also contain NH4Cl which due to common ion effect depress the ionization of the soap and decrease the solubility in water, this together with high percent of turpentine oil in the liniment cause phase inversion producing water in oil emulsion.

 NH4CL NH4+ + CL-

 Oleic acid + NH4+ NH4oleate

* NH4CL is used as a laxative but here as a system acidifier.
* Dilute ammonia solution is used as a system circulatory stimulant but here is used as a source of alkali.
* Oleic acid is used as a source of free fatty acid.
* Turpentine oil is used as counterirritant.