
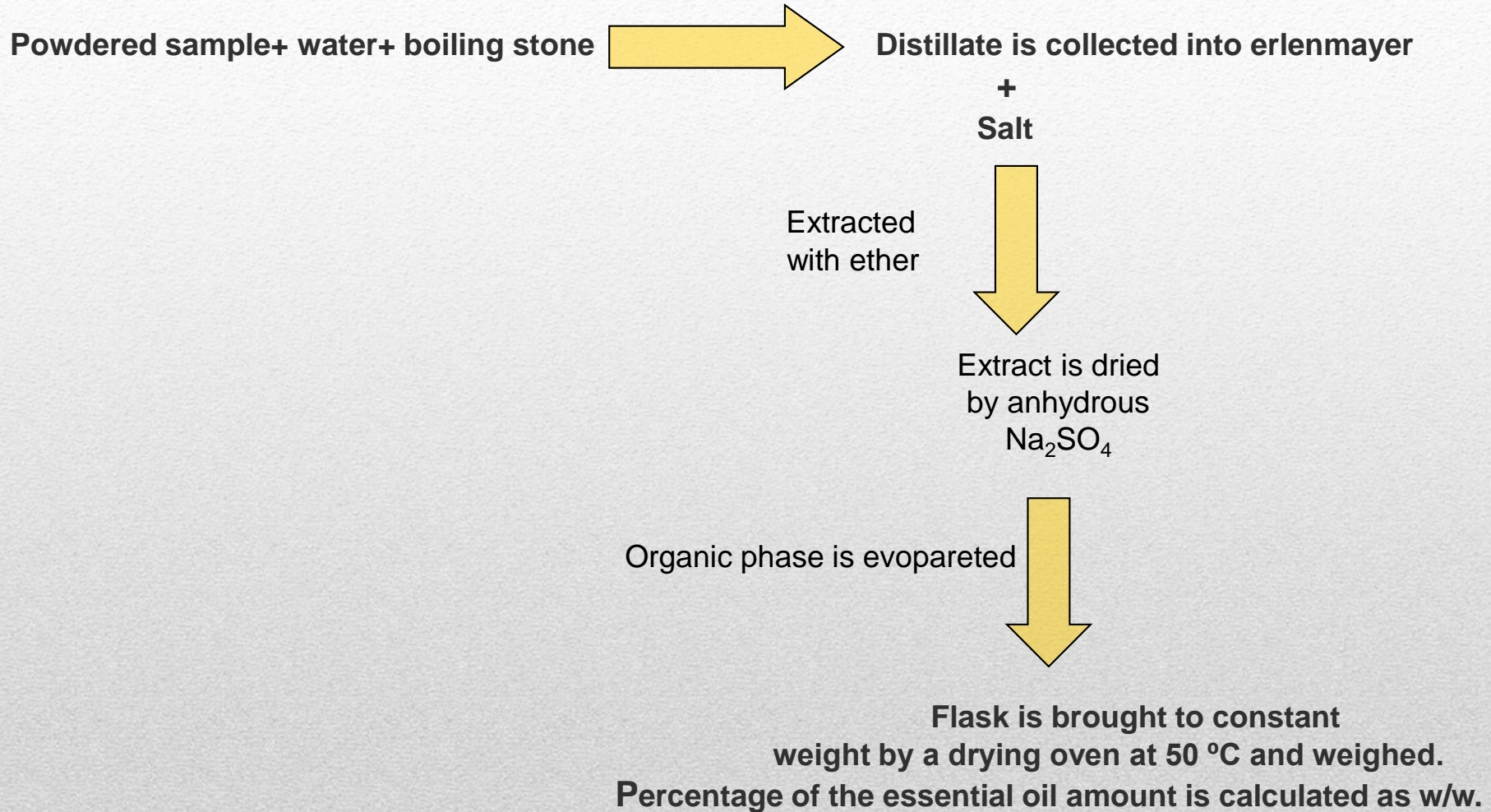


**QUANTATIVE ANALYSIS OF
VOLATILE OILS
(GRAVIMETRIC METHOD)**




In this method, volatile oil is separated by water distillation, water-oil distillate, saturated with salt then extracted with ether. Solvent; evaporated in a tared container. the weight of the remaining volatile oil is calculated and % volatile oil is calculated (w/w) .

Experimental process:



- The reason for the extraction with ether; dissolution of volatile oils in this solvent and ether is low-flying (34,6 °C). Instead of water, such as pentane, hexane, benzene and petroleum ether and nonpolar solvents with low boiling point may also be used.
 - Water saturation rate with water is 30%.
60 g of NaCl are required for 200 ml of distillate.
 - The reason why we use 50 °C oven, volatile oils fly at higher temperatures.
 - Why do we feed with salt?
Distillate water and volatile oil coexist. Volatile oils carry water-soluble compounds even water-soluble. Water can not attract water-soluble compounds in volatile oil when saturated with salt, it is easy to completely remove the volatile oil.
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Pharmacopeias accept the quantitative analysis method of volatile oil with volumetric method. Because, gravimetric method has some disadvantages;

- Quantitation by this method takes along time. A lot of equipments are used.
 - Due to the distillation and extraction, if the extraction is not successfully performed, yield will be poor.
 - Essential oil can not be used after these processes.
 - Because of a lot of equipments, amount of essential oil can be lost.
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