A Simple Evaporation Technique

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Concentration of an extract to a small volume is often necessary prior to spotting on thin layer plates. In many instances, the extract is concentrated to a desired volume, transferred to a suitable container and final evaporation accomplished by a stream of air or nitrogen. A known volume of solvent is then added and the sample is ready for spotting. Often the vessel used for the final evaporation step is not suitable as a storage vessel and the sample must be transferred again. The following described method is considerably more rapid than air drying, it eliminates the necessity of transferring the sample to a storage vessel and may be accomplished with a minimum of expensive equipment.

The sample is first concentrated to incipient dryness using a Rinco rotary vacuum evaporator with a 24/40 ♀ spindle. The flask is then removed, rinsed twice with 2 ml of a desired solvent and the rinses transferred to a 5 ml capacity screw cap vial.

The open end of a straight ground joint, 6 inches long with a 24/40 ♀, is snuggly sealed with a rubber stopper. The vial is placed in the ground joint with a pair of forceps and sufficient water added to the joint to cover 1/3 the height of the vial. When the ground joint is affixed to the evaporator, it may be tilted as much as 45°

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and placed in a hot water bath. The complete arrangement of the components is illustrated in figure 1.

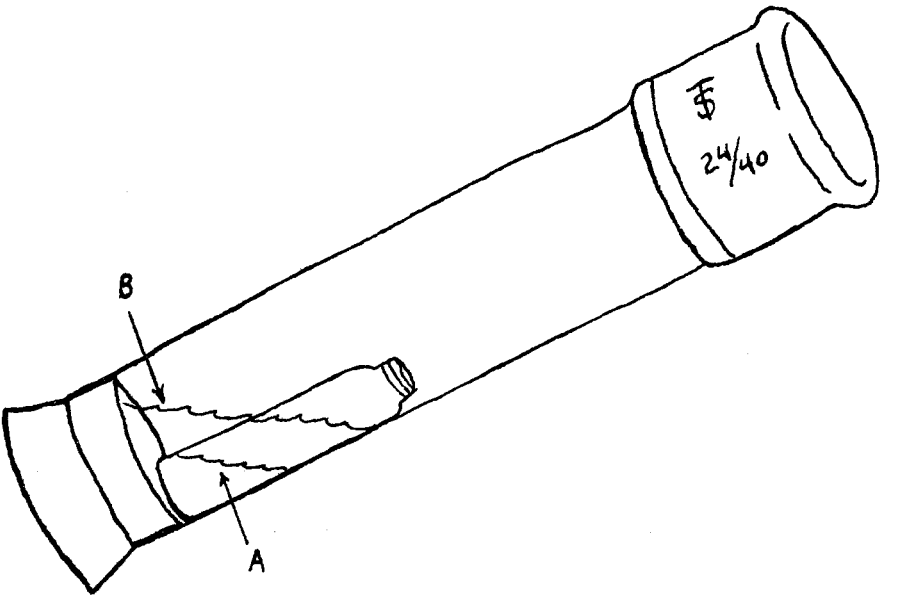

Figure 1. Orientation of components used in evaporation technique. (A) indicates level of solvent in vial, (B) indicates water level in ground joint.

Due to the screw threads of the vial being indented, the water will not enter. The vial will ride smoothly atop the rubber stopper as the joint rotates using the water as a lubricant. It has been found advantageous to use water from the water bath to fill the ground joint since temperature equilibrium is more rapid.

Once the solvent in the vial is reduced to a desired level, the original concentrating flask may be rinsed again and the entire process repeated as necessary to insure complete recovery of the com-

pound of interest.

Care must be taken that excessive vacuum is not applied which may cause the water to boil over into the vial. Also, the vacuum must be released slowly so that the vial is not violently drawn up to the metal spindle of the evaporator.

The complete operation may be accomplished in 3-5 minutes, and the residue dissolved in any solvent to a maximum volume of 5 ml. By placing a teflon wafer within the screw cap, the vial may then be used to store the sample until ready for analysis.

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