

## **Quantitative Transfer of Samples**

Quantitative Transfer simply means that all the material you are investigating must be moved from one place to another, without any loss of sample. You may be asked to transfer a solid or liquid sample quantitatively from one vessel to another, for example from a weighing vessel to a beaker, or from a beaker to a volumetric flask.

### **Transfer of a Solid Sample**

Solid samples are generally analyzed by drying, weighing, and dissolving in an appropriate solvent for analysis. If a sample is in a single large chunk, such as a tablet or capsule, transfer can be accomplished easily using forceps. The weighed sample is simply picked up using clean, dry forceps and moved into the receiving vessel. The use of forceps prevents contamination of the sample from moisture or oil on the analyst's hands. However, in our laboratory, the sample is in usually powdered or crystallized form. Once the sample is accurately weighed, transferring without any loss or contamination is important to ensure the accuracy of your analysis. Samples can be weighed on weighing paper, in a weighing boat or dish, or in a clean, dry, beaker. The weighing receptacle is placed on the balance, the balance is then tared to zero, and the sample is weighed into the receptacle.

If you are using weighing paper, fold it in half, then in half again, to create a crease in the paper when unfolded. Place the paper on the balance such that it forms a concave surface for your sample. Once your sample has been weighed, the sample can be transferred to a receiving vessel by carefully tipping the creased weighing paper and pouring the solid into the beaker. Tap the paper with a clean scoopula or stir rod to knock particles into the beaker. The paper should then be rinsed with a small amount of the solvent being used to remove all traces of solid sample.

Weighing onto a weighing boat, weighing dish, or beaker is essentially the same technique except you will not need to create a concave surface. Once the sample has been weighed, transfer is accomplished by carefully pouring the sample into the receiving vessel. The weighing boat or beaker is then rinsed with solvent until no trace of solid remains. This may take three to five rinsings. Use only a small amount of solvent for each rinse.

### **Transfer of a Liquid or Wet Sample**

Liquids may also require transfer from one vessel to another, for example, you may wish to dissolve a known amount of solid in a beaker of solvent, then transfer this solution to a volumetric flask, and add solvent to the mark on the flask to prepare a solution of known volume, and therefore known concentration. When transferring a liquid sample to a receiving vessel, rinse the dispensing vessel with solvent, and transfer the rinsings to the receiving vessel. At least three washings are recommended to ensure that none of your sample remains in the dispensing vessel. If you use a funnel to aid in the transfer, the funnel should also be rinsed with solvent, and the rinsings added to the receiving vessel.