

Cleaning Lab-ware

Is it Clean?

When it comes to lab methods, clean is a relative term. It depends on what you are measuring and the method used. For the most part you are cleaning to make sure the analyte you are measuring is not present and any materials that will interfere with the analysis. For example, if you are analyzing for nitrate, a very water-soluble ion, a simple rinse with de-ionized water is enough to clean most lab ware. However, if you are analyzing for phosphate, rinsing with de-ionized water will not be adequate. Many phosphate compounds are not soluble in neutral solutions. In order to assure removal of phosphates, lab-ware needs to be rinsed with a dilute acid solution (.001N HCl is adequate) and then rinsed with de-ionized water. (This is also the cleaning method for most micronutrients e.g. Zn, Fe, Cu, Mo etc.) Only non-phosphorous containing soap should be used. Volumetric devices such as pipettes and burettes should not have any droplets of solution on the inside of the device. A drop of liquid on the inside of a burette is a drop that didn't make it into the titration but was measured. Also, it should be noted that many lab ware-materials leach small amounts of chemicals into the sample solution e.g. soft plastics leach plastisizers (phthalates) into sample solutions.

The bottom line – any lab-ware (glass or plastic) should be cleaned to meet the needs of your analysis. All lab-ware in this lab should be considered dirty and in need of cleaning according to your analysis needs. Often methods will specify the type of lab-ware to be used and the method of cleaning.