

4.3: THE DEEP UNDERSTANDING

I believe that the following will not be a surprise to anyone, but it is perhaps the primary reason why students suffer through sub-par lab experiences: lack of understanding. One piece of advice I usually give is to make sure that you understand each step in the procedure.

A chemical procedure is in many ways like engineering: every element serves a purpose, and has a specific function. A very fulfilling and rewarding exercise is to make sure that you have this correlation firmly in your mind before you enter the lab. This will give you a deep understanding, and make the outcome of your experience more positive, both scientifically but also personally.

Do you really understand why we added the base in step 3? Do you really understand why we shake the separatory funnel, or why we add the anhydrous sodium sulfate? Do you really understand why we distilled the product, and why we did not recrystallize it?

A key feature of surviving (and enjoying!) an organic chemistry lab experience is therefore to attain a deeper understanding. That way, you will see how the elements of the procedure come together, and how each aspect has a vital and important purpose. This can be a valuable way to prepare, and to make sure that you are stacking the odds in your favor, to make sure that the experiment goes well.

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