

CHEM 321: Laboratory Notebook Definitions

For the most part these will come from two different areas:

1) The chemical concepts

- These are directly related to the isolation or reaction studied in a given laboratory experiment.
- You must define any chemical concept which is NEW to laboratory portion of the course.

2) The common techniques

- These are found on the "Common Techniques Used in Organic Chemistry" flowchart.
- You do not have to learn all of the techniques on that flowchart at once, as we will gradually learn them throughout the year. However, you should refer to that flowchart often to see which techniques from that chart are in the current experiment.
- You must define any common technique which is NEW to laboratory portion of the course.

To aid you in this process, we are going to give you the cues for the Extraction and Purification of Caffeine. However, it will be up to you to find definitions for the new terms. You may use the internet or books to find the definitions. You must cite your sources.

New Chemical Concept:

- Isolate a natural product from a biological source.

New Techniques:

Isolation:

- Liquid-Liquid Extraction
- Simple Distillation
- Sublimation

Characterization:

- Thin-Layer Chromatography

You are expected to use these words in their proper context in your laboratory report. DO NOT repeat the definition of any one of these: assume your reader knows the definitions.

Example Notebook Definition:

Liquid-liquid extraction: Liquid-liquid extraction, solvent extraction, or partitioning, is a technique in which chemicals are separated based on their solubility preferences for two different immiscible liquids, usually an organic solvent and water. This type of extraction is mostly a part of a work-up step in which a substance from one liquid phase moves into another liquid phase. A separatory funnel is the main glassware used to carry out this technique. In order to allow chemicals to move from one phase into another, the two liquids are mixed vigorously. Pressure builds up inside the separatory funnel during this mixing, thus the separatory funnel must be inverted and vented often. It is best to drain aqueous layers into beakers and organic layers into Erlenmeyer flasks.