

The first part of the semester will be spent determining the identity of unknowns assigned to you. The experiments you will perform are outlined in Chapter 10 of your textbook, but which tests you perform will be up to you. I would recommend that you measure physical properties of your unknown (melting point, boiling point, density, refractive index), conduct the ignition test and the solubility tests and obtain an IR spectrum of your compound. From these measurements, you can identify which chemical tests would be most useful to perform. You may also find helpful information on the lab links page of the CHEM 3114 website. For your first unknown, you will work as part of a group, and you will make your identifications together. You will also receive two unknowns individually. Your final determinations will be due on **Friday, April 6 at 3:00 PM.**

Remember as you perform your experiments:

- Do not remove any chemicals from the lab except to collect an IR spectrum. Do not remove any chemicals from Wood Science under any circumstance.
- None of the tests are completely binding. Be sure to assess the results of all of your experiments before assigning an identity to your unknown.
- Functional group chemical tests tend to be more accurate than the general classification experiments.
- Reagents for many of the chemical tests are available as kits in the front of the lab or in the stockroom. Ask the instructor or the lab assistant if there is a chemical test you wish to perform, but can't find the corresponding chemicals.
- Many compounds can be identified by forming derivatives of the products. Feel free to request the reagents necessary for forming derivatives, as they may not be compiled into a handy kit.
- Unknown samples must be identified using chemical and physical properties compared to literature values. Samples may not be compared to samples of known materials, so don't ask.