

Steps for Recrystallization (see: textbook, pp 104-119)

“Use an Erlenmeyer flask. Don’t use a beaker.”

1. **Choosing the solvent.** “Like dissolves like.” Some common solvents are water, methanol, ethanol, ligroin, and toluene. When you use a solvent pair, dissolve the solvent in the better solvent, and add the poorer solvent to the hot solution until saturation occurs. Some common solvent pairs are ethanol-water, *t*-butyl methyl ether-ligroin, and toluene-ligroin.
2. **Dissolving the solute.** To the crushed or ground solute in an *Erlenmeyer flask* add solvent; heat the mixture to boiling. Add more solvent as necessary to obtain a hot, saturated solution.
3. **Decolorizing the solution.** If it is necessary to remove colored impurities, cool the solution to near room temperature, and add more solvent to prevent crystallization from occurring. Add decolorizing charcoal in the form of palletized Norit to the colored solution, and then heat it to boiling for a few minutes, taking care to swirl the solution to prevent bumping. Remove the Norit by filtration, and then concentrate the filtrate.
4. **Filtering suspended solids.** Dilute the hot solution slightly to prevent crystallization from occurring during filtration. Filter the hot solution. Add solvent if crystallization begins in the funnel. Concentrate the filtrate to obtain a saturated solution.
5. **Crystallizing the solute.** Let the hot saturated solution cool gradually to room temperature (this should take about 20 minutes). Do not disturb the solution. If necessary, cool it in ice. If crystallization does not occur, scratch the inside of the flask or add seed crystals.
6. **Collecting and washing the crystals.** Collect the crystals by suction filtration on a Hirsch funnel or a Büchner funnel. First, wet the filter paper with solvent, then apply vacuum, and add the crystal-containing solution. Once solvent disappears into the filtrate, add a small volume of cold wash solvent and continue to apply vacuum.
7. **Drying the crystals.** Press the crystals obtained on the filter to remove solvent. Then remove them from the filter, squeeze them between sheets of filter paper to remove more solvent, and spread them on a watch glass to dry.