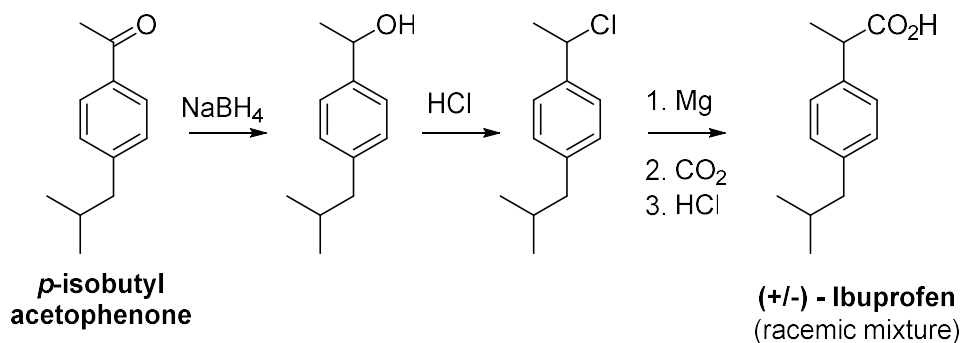
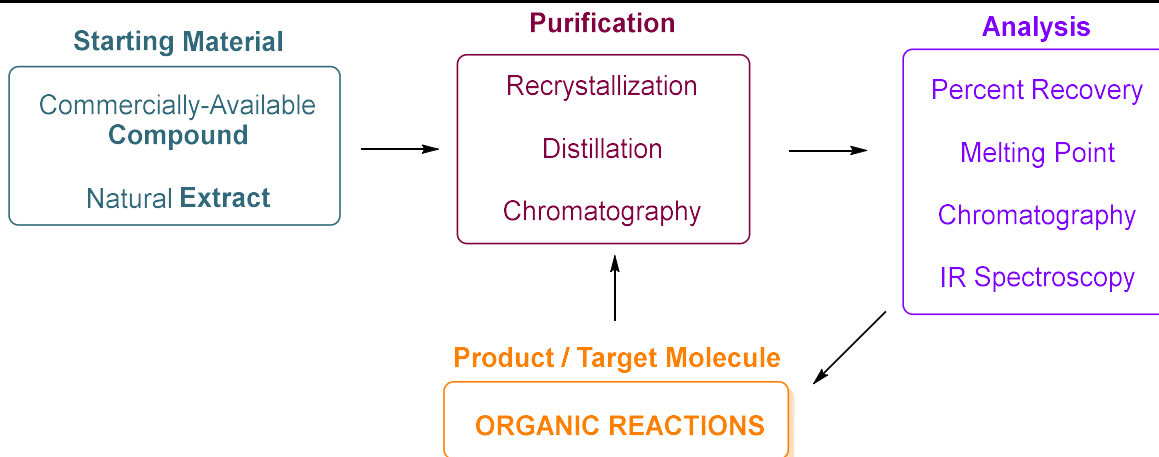


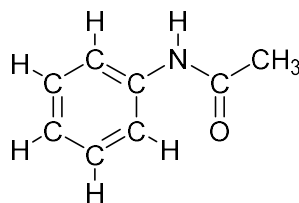
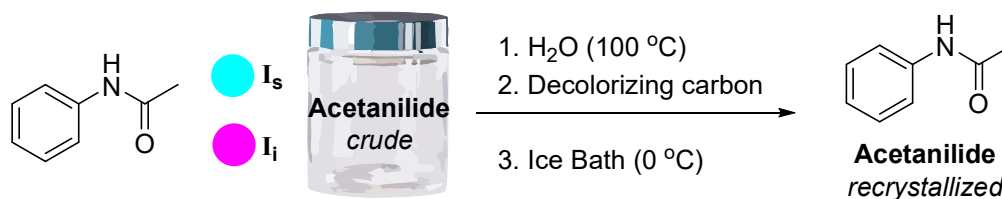
**CHEM 8L, Lecture 1 – Recrystallization**

Course Introduction &amp; Policies

Experiment 1 – Purification of Acetanilide

Kjonaas, R. A., et. al. *J. Chem. Ed.* **2011**, 88, 825 – 828.**RECRYSTALLIZATION** → purification of solids based on solubility

- Dissolve solid in solvent, remove **insoluble (I<sub>i</sub>)** and **soluble (I<sub>s</sub>) impurities**
- **Precipitate** (crystallize) solid from solution & **isolate** via filtration
- **Analyze** by percent recovery and melting point (Lecture 2)



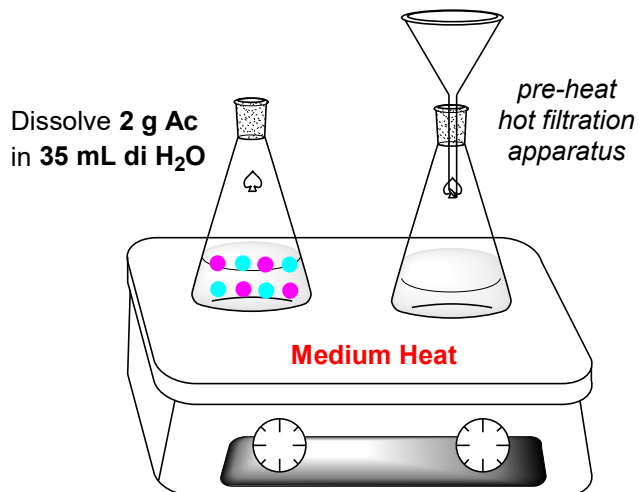
**Acetanilide (Ac)**  
(*ass-it-an-il-id*)

**Experimental Procedure**

(1. Choose recrystallization solvent...WATER!)

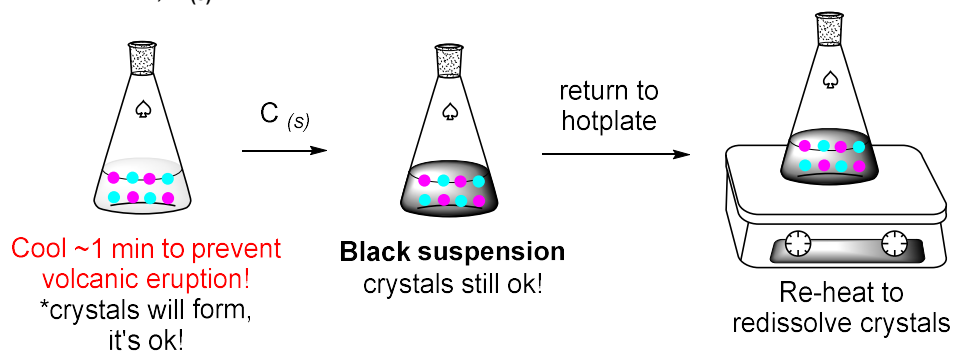
- Best *theoretical % recovery* (Lecture 2): high solubility in hot solvent, low solubility in cold solvent

2. Dissolve sample in *minimum volume* of hot deionized water (di H<sub>2</sub>O)

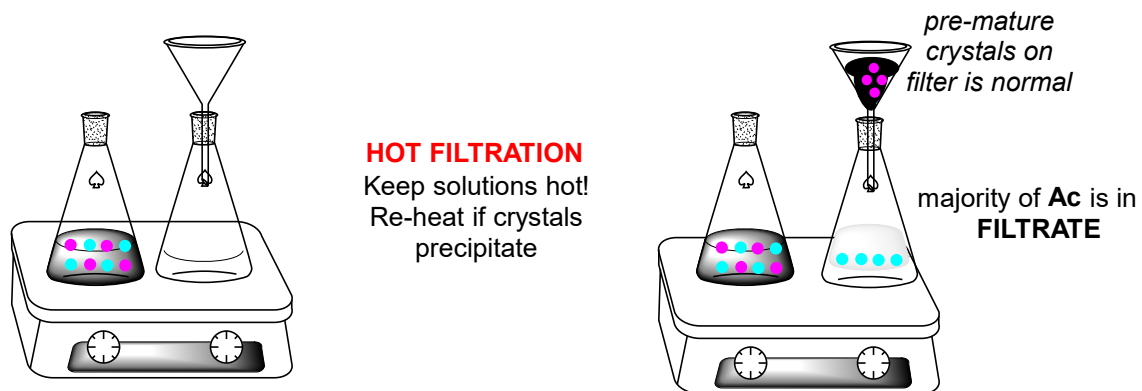


**SAFETY FIRST**  
Use 2 hot mitts  
to handle  
hot glassware

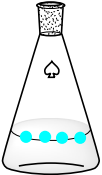
3. Add activated charcoal, C<sub>(s)</sub>



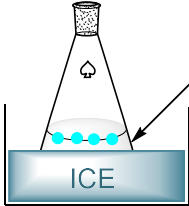
4. Remove I<sub>i</sub> via hot filtration



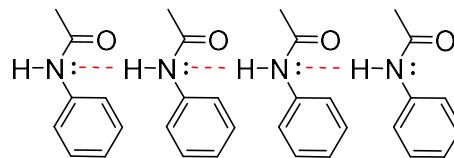
## 5. Cool to induce crystallization

  
Cool on bench  
maybe crystals,  
maybe not

*Multi-task!*  
Set up cold filtration  
apparatus while  
crystals form

  
Cool in ice bath

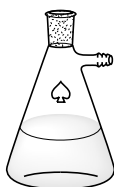
CRYSTAL LATTICE formation,  
based on hydrogen-bonding patterns  
(H-bond)

6. Remove  $I_s$  via cold filtration7. Wash with cold di  $H_2O$ 

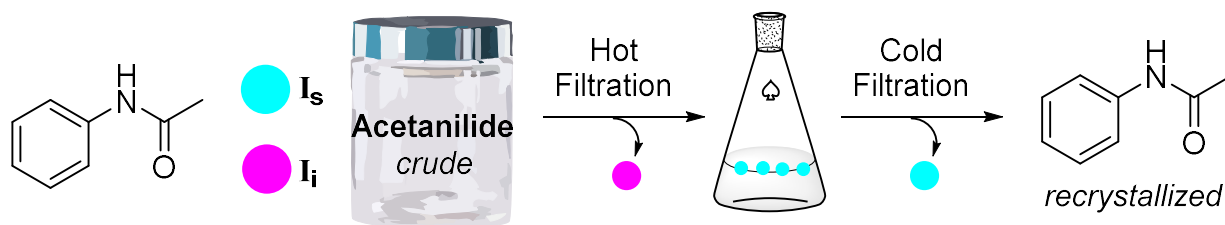
8. Dry to remove solvent from solid

**COLD FILTRATION**  
**by vacuum**

Keep solutions cold!



## 9. Percent Recovery &amp; Melting point analysis (Lecture 2)

**Recrystallization Procedure Overview****This Week = First Lab Meeting**

- **Arrive on time & dressed for lab** (see dress code in SAFETY RULES online)
  - o 15+ min late or not dressed = dropped from course ☹️
- No experimentation, no assignments due before lab
- **Intro Packet:** Safety, Writing, & Error Analysis
  - o Provided in lab, skim online before lab to prep
- Optional, encouraged: Bring your blank notebook to start preparing for Exp 1

**Exp 1** performed week 2 – pre-lab Q's & notebook due

- Exp 1 (intro, procedure, pre-lab, post-lab Q's, report cover page) on [acrochem.sites.ucsc.edu](http://acrochem.sites.ucsc.edu) > CHEM 8L

Please read **syllabus** and go to 'Preparing for the First Day' tab of acrochem site for answers to questions on course policies, wait-lists, late adds, etc.