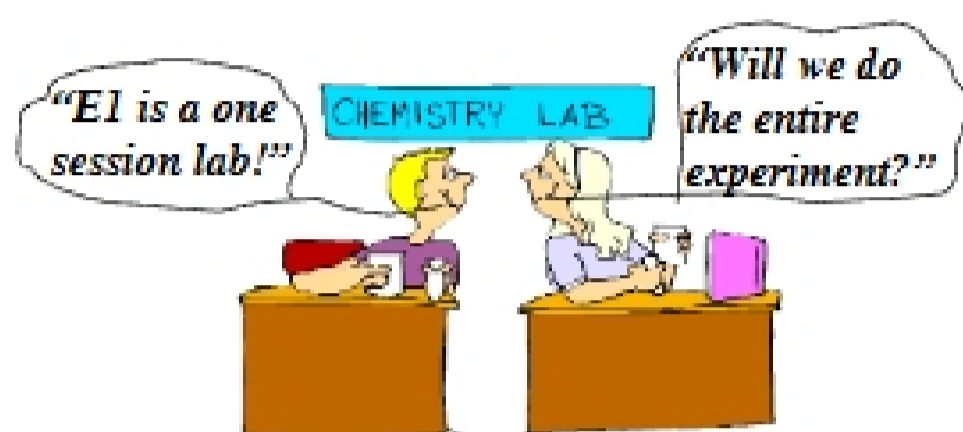


E1 Precipitation and Water Purity



Experiment 1 Pre-lab Report

Pre-lab Report (page 34)

- **Due at the start of Lab (8am or 11am or 2pm)**

Goals for Experiment 1

One session three hour lab

- **Complete Parts 1 and 2A and 2B (all).**
- **Complete part 3 OR 4 as assigned*.**
- **Complete team report and turn in at the end of lab or by the grace period deadline indicated in the lab manual, p. 232.**

* Team assignments are on p. 227

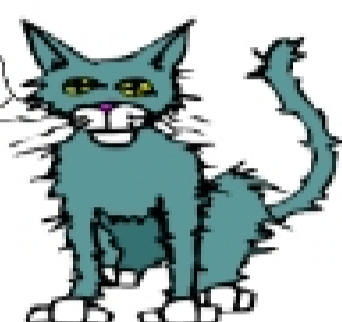
Discussion: first hour of next session

- **Prepare discussion abstract and presentation during lab or before next session.**

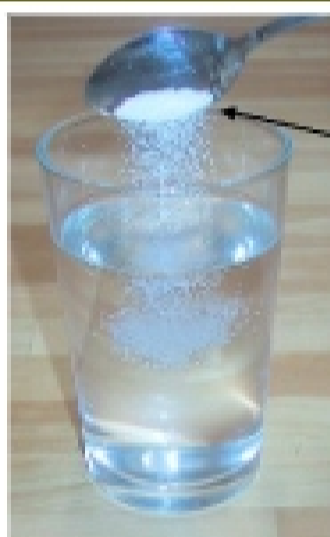
Background: Salts

- Ionic compounds with cations (+ ions) and anions (- ions) in fixed positions in a crystalline solid.

"I'm a cation.
Note my eyes!"



Background: Salt Formulas



- In the solid, the salt ions are fixed in a rigid lattice.
- The simplest ratio of the ions in the solid is represented by the formula of the salt.
- See Figure 3, p. 223 of the manual for common ion charges and periodic table position

Salt Formulas

cation	anion	compound
Ca^{+2}	Cl^{-1}	CaCl_2
Ba^{+2}	O^{-2}	BaO
K^{+1}	S^{-2}	K_2S
Fe^{+3}	Br^{-1}	FeBr_3
Cr^{+3}	O^{-2}	Formula ?

Background: Water and Salt Solubility



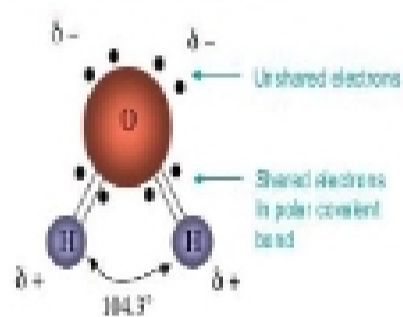
• In the solid salt, the ions are fixed in a rigid crystal lattice

• In water solution the salt ions are dissociated and free to move about.

Salt Solubility in Water

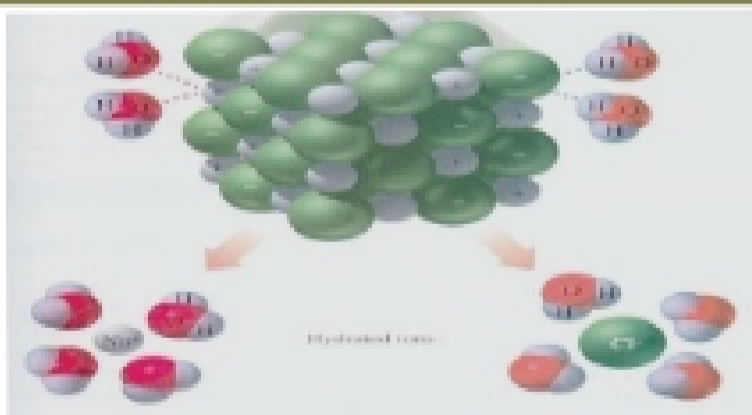
• Water (H₂O) is polar.

Structure of water molecule



DEMO

Salt Solubility in Water



• Polar water molecules reduce the effective charges of the ions in the solid and thus salt ions dissociate and the salt dissolves.