50 (tiny) things to remember during the AP chemistry exam:

1. The speed of a chemical reaction is not related to the equilibrium position.

2. [Hydrogen bonding is an INTERmolecular force, not an INTRAmolecular bond](http://www.adriandingleschemistrypages.com/ap/writing-good-answers-to-ap-bonding-questions-full-subscription-article/).

3. Electrolysis is only necessary when a reaction is non-spontaneous with a positive Delta G.

4. Rutherford’s ‘Gold Foil Experiment’ produced evidence of a dense, positively charged nucleus.

5. Le Chatelier’s principle is not an explanation it itself. A shift in position to reduce an external stress (Q versus K), is.

6. [Periodic trends are not explanations](http://www.adriandingleschemistrypages.com/ap/writing-good-answers-to-ap-periodicity-questions/).

7. The solubility rules that you need to know are that sodium, potassium, ammonium and nitrate salts are all soluble in water.

8. Potassium manganate(VII) and sodium dichromate(VI), when in acid, are common oxidizing agents.

9. Orders of reaction can only be found experimentally.

10. Wash a buret with the solution that it will be dispensing in the titration, and fill the tip.

11. Phenolphthalein is pink in basic solution.

12. Gases behave ideally when at relatively low pressures and relatively high temperatures.

13. The first ionization energy of an atom corresponds to the lowest energy peak on a PES spectrum. No other ionization energies match any PES peaks.

14. Catalysts increase the rate of the forward *and* the backward reaction.

15. Common ions make slightly soluble salts even less soluble.

16. Kp expressions include ONLY gas partial pressures.

17. Very large K values suggest that reactions go to completion and massive ones suggest a practical*lack* of an equilibrium at all.

18. Kw = (Ka) (Kb).

19. Optimal buffers have pH = pKa.

20. In % error calculations, the actual, accepted value is in the denominator.

21. The existence of a C=C double bond (sigma + pi), prevents rotation and can cause cis/trans isomerization.

22. Clean up an acid spill with a carbonate, not an equally corrosive, strong base.

23. Writing the full electronic configuration of an atom can help to explain differences in ionization energies.

24. Transition metal ions are often colored in solution.

25. Reduction always takes place at the cathode.

26. Decreasing the [ ] of a reactant in a REDOX equilibrium/galvanic cell reaction, will force the reaction backward and lower the voltage – and vice-versa.

27. Fluorine always has an oxidation number of  -1.

28. The bigger the pKa, the weaker the acid.

29. The bigger the Ka, the stronger the acid.

30. A carboxylic acid can be represented by R-COOH and RCO2H.

31. [When using R](http://www.adriandingleschemistrypages.com/ap/which-r-do-i-use/) = 0.0821 in P V = n R T, pressure must be in atm, temperature in K, and volume in L.

32. Neat handwriting and presentation of your work CAN make your (and the graders) life easier.

33. On the exam, use the FULL atomic masses printed on the periodic table.

34. When predicting shape, a double bond counts as one area of electron density.

35. It is unlikely that any numerical answer on the AP exam will ever require 10 significant figures!

36. Since C and H have a similar electronegativity, hydrocarbons are largely non-polar.

37. Polarity in organic molecules helps them to be soluble in water, otherwise non-polar organic molecules will dissolve non-polar (covalent) solids.

38. Only the first bond of a double or triple bond is counted in hybridization. The others are pi bonds formed by the overlap of UNhybridized p orbitals.

39. Breaking bonds within reactants is ENDOTHERMIC (+ve).

40. Alcohols are soluble because they can H-bond with water, NOT because they have a hydroxide group – they DON’T!

41. Ions travel through the salt bridge, not electrons.

42. Net ionic equations must balance charge as well as atoms.

43. A graph of 1/[X] versus time gives a straight line for a second order reaction.

44. Bromine and mercury are liquids at room temperature.

45. Transition metals lose their s electrons first.

46. Always use temperature in K in gas calculations.

47. The units of Delta H and Delta S are often different, and if so, must be converted in a Delta G calculation.

48. The cathode and anode have DIFFERENT charges in a galvanic cell and an electrolytic cell.

49. Orders of reaction can be fractions.

50. Iodine is a solid at room temperature.