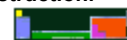


Revised August 2012



AP LAB 7b: The Blank Periodic Table

Use the blank periodic table on page two of this worksheet, and www.chemcool.com to complete the tasks below.

On the blank periodic table, each small set of six, rectangular boxes represents each of the first twenty elements. In the first box the element's atomic number is written. Add the following data to the other boxes, in the order shown, working from the top down. **(The hydrogen boxes are completed for you as an example).**

1. Complete the data.

- i. Insert the symbol for all 20 elements
- ii. Insert the 1st ionization energy in kJ mol^{-1} for all 20 elements
- iii. Insert the 2nd ionization energy in kJ mol^{-1} for all 20 elements
- iv. Insert the atomic radii (in pm) *for the following elements only*

H, Li, Be, O, F, Na, Mg, Al, S, Cl, K, Ca

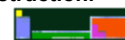
- v. Insert the ionic radii (in pm) *for the following ions only*. Include the charge on the ion in parentheses

H⁻, Li⁺, Be²⁺, O²⁻, F⁻, Na⁺, Mg²⁺, Al³⁺, S²⁻, Cl⁻, K⁺, Ca²⁺

2. Using Excel, create and print the following plots.

- A column chart of 1st and 2nd ionization energies plotted next to one another, for each of the first 20 elements
- A column chart comparing the atomic and ionic size plotted next to one another for each of the elements and their ions listed in (iv) and (v) above

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		Groups		THE BLANK PERIODIC TABLE	Groups										
		1	2		13	14	15	16	17	18					
Periods	1			1							2				
				H											
				1312											
				n/a											
				37.1											
				208 (-1)											
	2	3 4		Transition Elements						5	6	7	8	9	10
	3	11 12		Transition Elements						13	14	15	16	17	18
4	19 20		Transition Elements												