

Lab: Notches and Tabs

Students: Please read the following information given below, and then come to class on your lab day with the following already prepared in your notebooks:

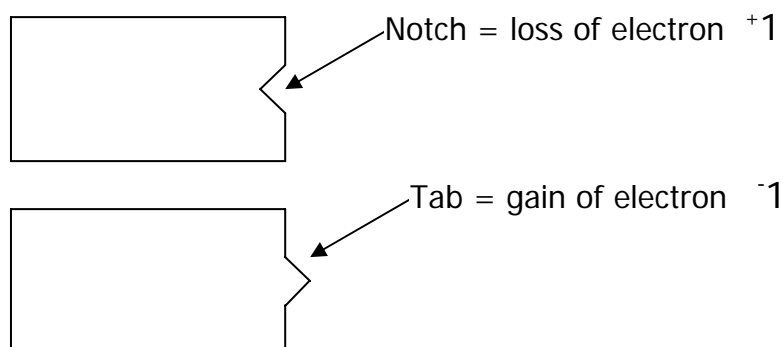
- 1) Date, 2) Partner, 3) Title, 4) Purpose, 5) Materials, 6) Safety, and 7) Diagram
- 8) Procedures/Observations

The Data table and Questions (#1-8) need to be printed out. Bring the data table and sheet of paper ions with you to your lab class. The questions will be done after completion of the experiment. The data table and questions will be due one week after performing the lab in class (your next lab class).

An ion is an atom that has acquired a charge because it has either lost or gained electrons. The charges correspond to the oxidation states. When oppositely charged ions attract each other, they form ionic bonds. The ions combine in whole number ratios, depending on how many of the cation is necessary to satisfy the anion and vice versa. Once the proper ratio is achieved, the sum of the charges on the cations should be equal to the sum of the charges on the anions. They should completely neutralize each other. The overall charge on an ionic compound is "0". In this lab, ionic compounds will be constructed using paper "ions".

The last page of this document contains a full sheet of paper "ions". You will cut out some of these ions and reassemble them together to make compounds. Each notch and tab piece represents an ion with a charge. Notice that there are notches and tabs of different sizes. The number of the notches or tabs on the piece indicates how high the charge is. The notches (the pieces with the triangle cut out) represent the cations that have lost electrons and the tabs (the pieces with the extra point) represent the anions that have gained electrons. The notches and tabs are intended to fit together to form compounds.

All notches and tabs must have partners! Once the model compounds have been created, make sure to label them to show the new compound formed.



Name _____

Date _____

Period _____

Lab Group # _____

Lab: Notches and Tabs**Data:** print this out! You will use this sheet in lab, so you must have it with you on your lab day.

Elements involved	Notches and Tabs Model Compound (Should be taped or glued below) Label the ions!	Formula of Compound
Na and Cl (3 pt)		
Ba and I (3 pts)		
Al and S (4 pts)		

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Lab: Notches and Tabs**Questions:** Answer in complete sentences and be sure to explain where necessary

1. What is the sum of the charges in the formula for NaCl? _____ (1 pt)
2. How many iodide ions are needed to balance the charge on the barium ion from above? (1 pt)
3. What does the subscript "2" indicate in the formula for barium iodide? (2pts)
4. Name the cation in the compound that forms between aluminum and sulfur. _____ (1pt)
5. Name the anion in the compound that forms between aluminum and sulfur. _____ (1 pt)
6. Explain when Roman Numerals would be necessary to use in writing compounds.
Give 2 examples. (2pts)
7. When would parentheses be used to write a chemical formula? Give 2 examples. (2pts)

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8. Print this out and complete the chart below: make this neat (10 pts)

Name of Compound	Cation	Anion	Formula
Cesium bromide	Cs^{+1}	Br^{-1}	CsBr
Aluminum chloride			
Strontium oxide			
Radium chloride			
Aluminum phosphide			
Tin (II) sulfide			
Tin (IV) sulfide			
Barium chloride			
Beryllium nitride			
Lead (IV) fluoride			
Sodium oxide			
Magnesium arsenide			
Aluminum carbonate			
Barium sulfate			
Calcium dichromate			
Aluminum phosphate			
Copper (I) phosphate			
Manganese (IV) iodate			
Strontium nitrate			
Titanium (III) oxalate			

