

Element Search

Name: _____

Today you will analyze the ingredients in your household item search for their readily apparent chemical composition. You will do this by looking at the name of the ingredients and checking off each element found on a frequency (tally) sheet. There are some simple clues as to the composition of some not so apparent compounds below. I have used the chemical symbol for the elements mentioned. Use the table on the next page if you are unsure of the element's symbol.

Rules for the interpretation of chemical names:

1. All oil or petroleum-based products are hydrocarbons and contain H and C.
2. All forms of alcohol (the term will end in -ol) contain C, H, and O.
3. All protein-containing molecules (will have the term -amine or -amino- in their name) contain C, H, O, N.
4. Glycerine contains C, H, O.
5. Sugars of all types (glucose, fructose, lactose, maltose, galactose, etc.) contain C, H, O.
6. Benzene, propane, butane, methane, ethane, ... are all hydrocarbons and contain C and H.
7. Ammonia and ammonium contain N and H.
8. Any term ending in -ate or -ite contains O.
9. Any term containing the term oxide has O in it.
10. All acids have H in them.
11. All plant and animal extracts are hydrocarbons – see #1.
12. Hydroxides have H and O in them.
13. Thiocyanates contain S, C, and N.
14. When reading the ingredients look for the name or part of the name of an element in the words.

Example: *sodium laureth sulfate* (this ingredient contains sodium, sulfur, and oxygen. Don't worry about the "laureth.")

Use the tally sheet provided to complete your sample data frequency count. Then transfer the data to the computer using the spreadsheet program. Save your spreadsheet and graphic analysis plot to the disk provided at your computer station. Be sure to use the "Save As" function to save to the disc. Do not save your data to the hard drive of the computer! Do not save to the blank template on the disk. Rename your chart before you save to the disk.