Name: _____ Chem 9, Section: _____

Lab Partner: _____ Experiment Date: _____

Making Soap - Saponification

Experimental Observations

You may make observations after the soap has dried; it will be returned in lab section or lecture.

1. Does it smell like any soap that you have used?

2. Wash your hands with your soap. Does it lather like regular soap?

3. Does it clean your hands as well as regular soap? Explain.

Now rinse your hands thoroughly just in case your soap contains any unreacted sodium hydroxide.

Questions

1. The saponification reaction occurs between an acid and a base, shown in the figure in the procedure. In the reaction you performed, what is the acid and what is the base?

2. The base used in the saponification reaction must always contain a hydroxide ion. What bases are most commonly used for this reaction?

3. The products of the reaction are glycerol and a crude soap. The chemical formula of the soap is $CH_3(CH_2)_{14}COO^-\ Na^+$. Draw the line-angle structure.

4. One the above structure, circle the portion of the molecule that is water-soluble. Why is this portion water-soluble?

5. On the above structure, box the portion of the molecule that is fat-soluble. Why is this portion fat-soluble?

6. On the above structure, add interactions to water molecules: positive ion to hydrogen dipole and negative ion to oxygen dipole.

7. During lab section, why did the saponification reaction require the long period of stirring?

8. After lab section, why did the soap have to "cure" in the molds?

9. Do you think that the type of fat used will make a difference in the product? Why or why not?