



## Chemical Pie

Theory: Organic Chem, Esters

Purpose: To demonstrate how easily human “Chemical Senses” can be tricked and A Lead-In to Ester Study

Materials: Two pastry Pie crusts, Box of Ritz crackers, 1.5 Cups of sugar, Cinnamon, 1 Tsp. Of Butter, 1.5 Tsp. Of cream of tartar, Pie pan, Mixing Bowl, Large Pot

### Procedure

1. Place 2 cups of water in the pot and heat until it boils
2. While the water is heating, mix the sugar and cream of tartar in a bowl.
3. Add the mixture to the boiling water, a little at a time, and stir to dissolve.
4. Add 20-25 whole crackers, one at a time, to the boiling solution.
5. Boil for about 3 min. But do not stir.
6. Pour the mixture into a pastry- lined pie pan.
7. Sprinkle a small amount of cinnamon on top of the pie filling.
8. Melt the butter and drip it evenly over the filling.
9. Cover with a pastry top. Stick a knife through the top several times to allow steam to escape. (Make a design)
10. Bake the pie in the preheated oven at 450F for about 20 minor until the crust is brown.
11. Cool and enjoy eating your experiment. Bring a sample to class in order to receive credit for this lab.

### Discussion:

1. What flavors can you detect in your apple pie?
2. List some other food products that contain artificial flavors?
3. What does this lab have to do with esters?
4. What item gives this lab the appearance of apples?
5. What is the purpose of the cream of tartar?
6. What is the chemical formula for potassium tartrate (cream of tartar)
7. Look on-line to see if there are any other recipes that you can make to “trick” your senses and include it in the discussion.

### Resources:

### Conclusion: