**Lipstick: Gas Chromatography EXPERIMENT by Julia Hains**

**Purpose**

The purpose of this investigation is to introduce you to the gas chromatograph as a tool used by chemists to separate mixtures and identify their components. In this investigation you will be comparing the spectrum of the lipstick sample found at the crime scene with a spectrum you obtain. Your sample to be analyzed came from one of the four suspects.

**Materials**

Sample bottle from suspect

Syringe

Acetone

**Procedure**

1. Put on your goggles.

2. Obtain a sample marked “SUSPECT” by name.

3. Record the suspect name on your report sheet.

4. Obtain a syringe for the gas chromatograph. Clean it with acetone by placing the needle in a small amount of acetone, pull out the plunger part of the way and push the plunger back in. Repeat this a few times.

5. Fill the syringe with your sample. Place the needle in your sample. Pull the plunger out to the 5 µL mark. Discard the 5 µL. Place the needle in your sample again. Pull the plunger out to the 5 µL mark. Push the plunger back in until the sample amount is 1 µL. You only want this much in the instrument. Do not put more than 1 µL in the gas chromatograph.

6. Go to the instrument now.

**LIPSTICK: Gas Chromatography REPORT SHEET**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Suspect Name:

Observations:

Do you think your suspect could have committed the crime? Support your statement with specific information obtained from your spectrum.

**LIPSTICK: Gas Chromatography**

**TEACHER GUIDE**

Purdue will supply all samples and syringes. You need to supply approximately 100 mL of acetone for rinsing the syringes.

**INSTRUMENT SET-UP**

The temperatures on the GC for this experiment are different than the ones in the instruction book.

Column: 150°

Detector: 160°

Injector port: 160°

All other instructions are the same.