FLINN SCIENTIFIC

Name_____

Recycling Plastics by Density

Data Table

Unknown Plastic (Label)	A	B	C	D	E	F
Liquid #1	DI Water	DI Water	DI Water	DI Water	DI Water	DI Water
Float or sink?						
Liquid #2						
Float or sink?						
Liquid #3						
Float or sink?						
Density Range						
Recycling Code						

Post-Lab Questions *(Use a separate sheet of paper to answer the following questions.)*

1. Determine the density range and identify the recycling code #1–6 for each unknown plastic. Enter the results in the data table.
2. (a) Why were the unknown plastics cut into uniform size and shape pieces before measuring their densities? (b) Why was it necessary to rinse the unknown plastics with water and pat them dry before testing in each new liquid?
3. The density of a pure substance is a characteristic physical property. Why is the density of a plastic such as LDPE always stated as a range (0.90–0.94 g/mL)?
4. Explain why if a sample sank in water and floated in the 10% sodium chloride solution, it did not need to be tested in other liquids.
5. Which two plastics (#1–6) cannot be identified using the liquids in this experiment? What is the density of a "Liquid #4" that could be used to determine the densities of these two plastics more precisely?
6. What are the advantages and disadvantages of the two principal methods of recycling plastics?
7. *(Optional)* Conduct a household "audit" to find 15–20 different plastic products. Write down the name of each product, and identify the recycling code of the plastic.