Name: _____

Locker Number: _____

Special Experiment

IODINATION OF PHENOLS

Your assigned phenol: _____.

1. Write a balanced chemical equation for the iodination of your phenol. Use structural formulas.

2. Report the following for your recrystallized sample of your iodophenol.

   a) the mass (**grams**) of your product: _____

   b) the **color** of your product: _____

   c) the **melting point range** of your product: _____

3. Report the **percentage yield** of your product. Show your calculation, including a complete setup with cancellation of units.

4. Attach the infrared spectrum of your product to this report sheet. Identify the principal peaks in the spectrum and show how they verify the structure of your product.

5. Be sure to submit your sample of your iodophenol. Use a properly labeled sample vial.

ANSWER THE FOLLOWING QUESTIONS

1. Outline the mechanism for the formation of your iodophenol, starting from your assigned phenol.

2. Why did the iodination take place at the specific ring carbon you proposed?

3. Why does the amount of diiodination increase at elevated temperatures?

4. Why is it important to add the sodium hypochlorite solution *slowly* over a 30-minute period, rather than adding it all at once?

5. Indicate which product would be formed upon the iodination of each of the following compounds:

a) eugenol

b) salicylic acid

6. Indicate which product would be formed upon the *nitration* of each of the following compounds, using the traditional method:

a) benzene

b) toluene

c) chlorobenzene

d) benzoic acid