

Lab 10: Synthesis of Benzil

Reading

- Pavia, et al. 4th edition , Expt. 36B, pp. 309–311.

Prelab Assignmet

Your prelab should include the following: Date, Introduction, Haz-Mat, Reactant Table, Chemical Equation, and Procedures.

Procedural Notes

We will follow the procedure in the lab book. Please note the following:

1. We will use the purified product from the benzoin synthesis as the reactant in this experiment. Students who have less than 0.300 g of benzoin will be given additional benzoin by the instructor.
2. The reaction gives off a noxious brown gas (NO_2 and N_2O_4 - Yuck! SMOG!) during the heating. We will use the bench top fume hoods to contain the fumes. Make sure to lower the bell of the hood so that the top of the condenser is above the bottom rim of the bell.
3. **Reminder:** Remember to always stand the conical vials in a small beaker to avoid them falling over and spilling.

Postlab Questions

Answer these questions in your lab notebook after your conclusion is a section titled “Post-lab Questions”

1. The instructions in the lab text emphasize that the reaction mixture should not be heated above 70 °C. According to the lab text, what could happen if the reaction temperature is too high?
2. Compare the IR spectrum of benzoin (on page 308 of the lab text) with the IR spectrum of benzil (page 311). Explain how the changes in the important peaks are related to the differences between the two structures.