

Procedure

1. Obtain 8 disposable test tubes.
2. Label 4 tubes with the number that corresponds to the compound that will be added.
3. Add 2 mL of DCM to each of the tubes.
4. Add 0.5 mL of each substrate to its corresponding numbered tube.
5. Add 0.5 mL of the bromine solution to the 4 remaining tubes.
6. Place all 8 tubes into an ice-water bath for 5 minutes.
7. Add one of the bromine tubes to one of the 4 substrate tubes and record how long it takes to react. Record the time and then repeat step 7 for the remaining substrates.
8. Once the order has been determined for each set of tubes, all of the tubes can be poured into an Erlenmeyer flask.
9. Quench any residual bromine by added a few (3-4) drops of cyclohexene to the flask or enough such that the solution is colorless.
10. Dispose of the solution in the halogenated waste container.

Notes

- It generally works best for one student to time the reaction while another student adds the bromine to the ethyl benzene and toluene reactions.
- The test tubes should be rinsed with DCM before disposing in the glass waste containers.
- It works best to mix the bromine solution with substrate with a pipet.