

Experiment

Synthesis of Benzimidazole

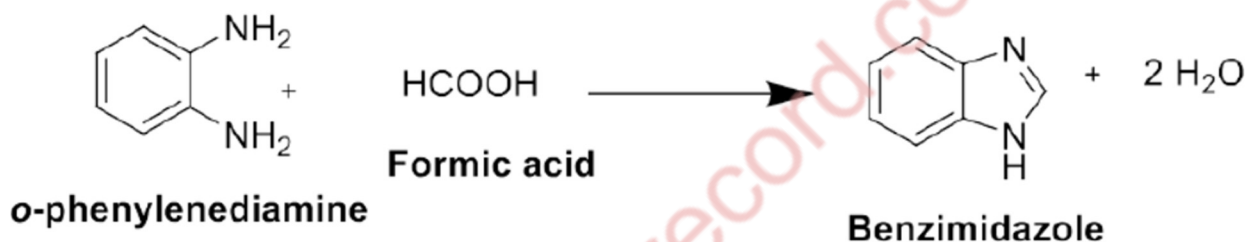
Aim;- To synthesize benzimidazole and calculate its percentage yield.

Reference;- B.S. Furniss, A.J. Hannaford, P.W.G. Smith, A.R. Tatchell, Vogel's Textbook of Practical Organic Chemistry, 5th Edition, Pg. 1162.

Requirement;-

-  **Chemicals-** *o*-phenylenediamine, formic acid, NaOH
-  **Glassware-** beaker, conical flask, Measuring cylinder, Glass rod.
-  **Equipment:-** Condenser, water bath.

Principal;- Orthophenylene diamine and formic acid are heated together in a condensation reaction to form benzimidazole.



Procedure

1. Place 27g of *o*-phenylenediamine in 250 ml RBF and add 16 ml of 90% formic acid.
2. Heat the mixture on water bath at 100°C for 2 hrs. Cool, add 10 % sodium hydroxide solution slowly, with constant rotation of the flask, until the mixture is just alkaline to litmus.
3. Filter off the solid benzimidazole and wash with a little cold water.
4. Recrystallize from hot water and dry upon hot air oven or in the air.

Calculation:-

Theoretical yield :-.....g

Practical yield:-.....g

Formula:- % yield= Practical yield/Theoretical yield ×100

Result:- Benzimidazole has synthesized successfully and percent yield was found to be%