**Experiment No 08**

**Aim:** Preparation of benzimidazole.

**Material/Reagent Required:** 0.5 M o-phenylenediamine, 90% formic acid, 10% NaOH, blucher funnel, Norite, round bottomed flasks.

**Procedure:**

* Take 1gm of o-phenylenediamine and 0.5 gram formic acid in r.b. flask.
* Heat it on reflux for 2 hours
* Cool and add 10% NaOH with constant stirring and mix till alkaline to Litmus
* Filter and crude benzimidazole is obtained
* Wash with ice water and take crude benzimidazole in boiling water + add charcoal stir for 15 minutes.
* Filter and cool it
* Wash with water and dry it
* Dry pure benzimidazole

**Chemistry Involved:** Benzimidazole is a heterocyclic aromatic organic compound. This bicyclic compound consists of the fusion of benzene and imidazole. It is a colourless solid.

|  |
| --- |
| **Benzimidazole** |
|  |

Benzimidazole is produced by condensation of o-phenylenediamine with formic acid,[[2]](https://en.m.wikipedia.org/wiki/Benzimidazole#cite_note-wagner-2) or the equivalent trimethyl orthoformate.

C6H4(NH2)2 + HC(OCH3)3 → C6H4N(NH)CH + 3 CH3OH

**Importance of the Experiment:** The benzimidazole is a very important compound in field of pharmacy and its derivatives play very important role as a therapeutic agent e.g., antiulcer and anthelmintic drugs. Apart from this the benzimidazole derivatives exhibit pharmacological activities such as antimicrobial, antiviral, anticancer, anti-inflammatory, analgesic, etc.