

### 5. Experiment name: Preparation of Phenothiazine

**Aim:** To prepare phenothiazine from diphenylamine.

**Reference:** <http://www.prepchem.com/synthesis-of-phenothiazine/>

#### **Requirement:**

Chemicals: Diphenylamine, Sulphur, anhydrous calcium chloride, alcohol.

Apparatus: Beaker, Buchner funnel, measuring cylinder, filter paper.

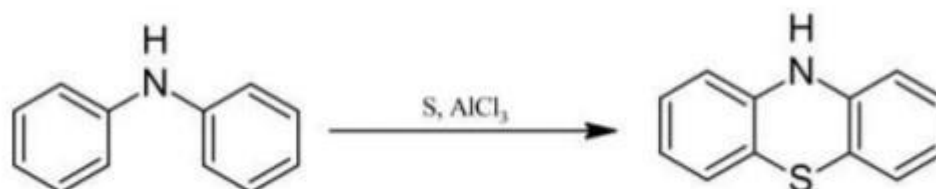
#### **Procedure:**

22 g of diphenylamine, 8.2 g of sulphur and 3.2 g of anhydrous calcium chloride are melted together. The reaction sets 140-150 °C with the rapid evolution of hydrogen sulphide; by lowering the temperature, a few degrees the reaction can be slackened. When the reaction has moderated, the temperature is raised to 160 °C for a time. The melt, when cool, is ground up and extracted, first with water and then with dilute alcohol. The residue consists of almost pure phenothiazine. It can be recrystallised from alcohol. Yield 93%, yellowish leaflets; m.p. 180 °C.

#### **Principle:**

Phenothiazine is prepared by fusing diphenylamine with sulphur with rapid evolution of hydrogen sulphide.

#### **Reaction:**



**Conclusion:** Phenothiazine was synthesized and the percentage yield was found to be \_\_\_\_\_%.