**Abstract:-**

The objectives from this experiment are to synthesis Nerolin(Ingredient in many perfumes) and to understand how the perfumes are produced. This reactions occur by SN2(Bimolecular Nucleophilic Substitution Mechanism-One step reaction). After heat the mixture for 2 hours and cool it, we have got Nerolin in its solid state(Like powder) by suction filtration.

**Chemicals:-**

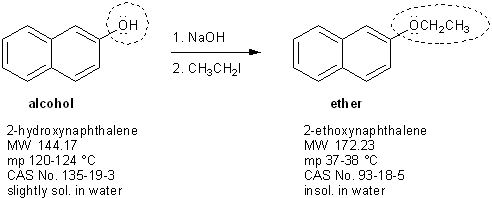
| Name | Methanol | B-Naphthol | Potassium Hydroxide | Ethyl Iodide | Boiling chips |
| --- | --- | --- | --- | --- | --- |
| Structure | CH3OH | C10H8O | KOH | CH3CH2I | CaCO3 / SiC |

**Table 1: Chemicals Used**

**Glassware:-**

| Round bottom flask | Graduated Cylinder | Bunsen burner | Condenser | Beaker | Buchner Funnel | Filter Flask |
| --- | --- | --- | --- | --- | --- | --- |

**Table 2: Tools Used**

**Reactions and Mechanisms:**

**Figure 1 : Reaction of synthesis Nerolin**

**Experimental Procedure:-**

| **Step** | **#** |
| --- | --- |
| 40ml of **Methanol**, 5.8g of **B-Naphthol**, and 3.26g of **Potassium hydroxide** are added into 100ml round bottomed flask | **1** |
| The contents of the flask are shaken for few minutes(Until all dissolve), then 3.6ml of **Ethyl iodide** and a couple of **boiling chips** are added to the round bottomed flask. | **2** |
| A reflux condenser is attached. (Have your instructor approved your setup). The mixture is boiled for two hours. | **3** |
| The reaction mixture is cooled to room temperature. The mixture is poured(after cooled at R.T) into a 250ml beaker and 100ml of ice cold water are added. The mixture is cooled in an ice bath in order to effect crystallization of Nerolin. | **4** |
| The crystallized Nerolin is collected by suction filtration. | **5** |

**Table 3: Procedure of synthesis Nerolin**

**Data:-**

Volume of methanol: 40 ml.

Mass of β-Naphthol: 5.80 g.

Mass of KOH: 3.26 g.

Volume of ethyl iodide: 3.6 ml

Mass of Nerolin: 0.82 g.

**Calculation and results:-**

**Discussion & Comments:-**

Nerolin is used I perfumery and as a fixative in soaps; fixative reduce the evaporation rate of other added volatile scents.

The percentage yield is very low(12%) and this indicate that there is a huge error in our experiment. This may be because of the lost material stay in the glassware, or steric hindrance plays a part as the β-Naphthol anion is quite bulky.

**Questions:-**

**Q1.(2)** Because Nerolin sublimate, from solid to gas.

**Q2.(5)** By extraction. Mix Nerolin and β-Naphthol with organic solvent(CH2Cl2). Add KOH to mixture, then Potassium β-Naphthol will dissolve in aqueous layer and Nerolin will remain in organic layer. We take aqueous layer and acidify it with HCl to reform β-Naphthol. Note: Now organic layer contain Pure Nerolin.( Then heat to get the pure Nerolin)

**Q3.(6)** In our experiment we mix β-Naphthol with KOH and CH3OH and wait for the reaction to take place and Potassium β-Naphthol cannot retain to β-Naphthol , then we add CH3CH2I. This procedure help us to insure that no side reaction occur, thus CH3CH2OH will not produce.

**Good Luck**