

## GRADE 12 PRESCRIBED EXPERIMENT 1: PREPARATION OF ESTERS

NAME OF LEARNER : .....  
DATE : .....  
SCHOOL : .....  
TOTAL MARKS : 50

### 1. Title

Preparation and identification of Esters

### 2. Aim of the experiment

- \* To synthesize/prepare esters, methylbutanoate and ethylbutanoate.
- \* To write the chemical equations for the formation of methylbutanoate and ethylbutanoate using structural formulas.

### 3. Materials/Apparatus

Equipment/ Glasswares

2 test tubes

Water soluble marker

Test tube rack

Eye dropper

2 x 250 ml beakers

Hot plate

10 ml graduated cylinder

Thermometer

Lab apron & Safety goggles

Water bath

Chemical / Reagents

Methanol

Ethanol

Concentrated sulphuric acid

Butanoic acid

### 4. Safety Precautions

- **Concentrated sulphuric acid** is a strong oxidizing agent and highly corrosive. It is dangerous and can burn skin, eyes, and clothing very badly. Avoid contact with skin or clothes. Wear gloves and proper eye protection when using this substance. Use only in a fume hood. Use exactly as directed. If it is spilled, wash immediately before the acid has a chance to cause a burn, and inform the instructor.
- **Butanoic acid** (all organic liquid acids) is toxic and corrosive to skin, eyes, and clothing. While working on this experiment, wear safety goggles, full face shield, gloves, and lab apron. Wash spills and splashes off your skin and clothing immediately, using plenty of water.
- All burners and other flames in the laboratory must be extinguished before you start this experiment.
  - **Methanol** is highly flammable. It is poisonous if swallowed. Its vapour is harmful to the eyes, lungs and skin and other organs.
  - **Ethanol** is flammable, poisonous and its toxic.
- **Detect odours of these esters with caution** because vapors produced may be harmful. Breathing the vapours of some of these esters can cause sore throat, dizziness, headache, and drowsiness. Hold the test tube 30 cm away and 15 cm below your nose. Waft a small amount of vapor or odour from the ester toward your nose, sniffing cautiously, once or twice. Do not breathe deeply while sniffing.

# 14 Learner Guide Grade 12 Experiment 1 Preparing Different Esters

**M Lipman**



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