

LAB REPORT: GAS CHROMATOGRAPHY (FID/ECD)

1. Title

Gas Chromatographic Analysis Using Flame Ionization and Electron Capture Detection

2. Objective

To separate and quantify volatile organic compounds using gas chromatography coupled with flame ionization and electron capture detection.

3. Introduction

Gas Chromatography (GC) is a powerful analytical technique used to separate, identify, and quantify volatile organic compounds in a mixture. It involves the injection of a sample mixture onto a stationary phase, which then separates the components based on their volatility and interaction with the phase. The separated components are then detected by a suitable detector, such as Flame Ionization Detection (FID) or Electron Capture Detection (ECD), to produce a chromatogram showing the relative abundance of each component over time.

6. Results

Representative GC Results (FID & ECD)

Retention Time (min) | Compound | Detector | Peak Area (AU)

2.5 | Methanol | FID | 1250

5.8 | Chloroform | ECD | 980

9.2 | Toluene | FID | 1650

12.7 | PCB-28 | ECD | 760