



TRINITY COLLEGE FOR WOMEN NAMAKKAL

Department of Chemistry

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AP/Chemistry

Experimental methods in chemistry

Gas Chromatography

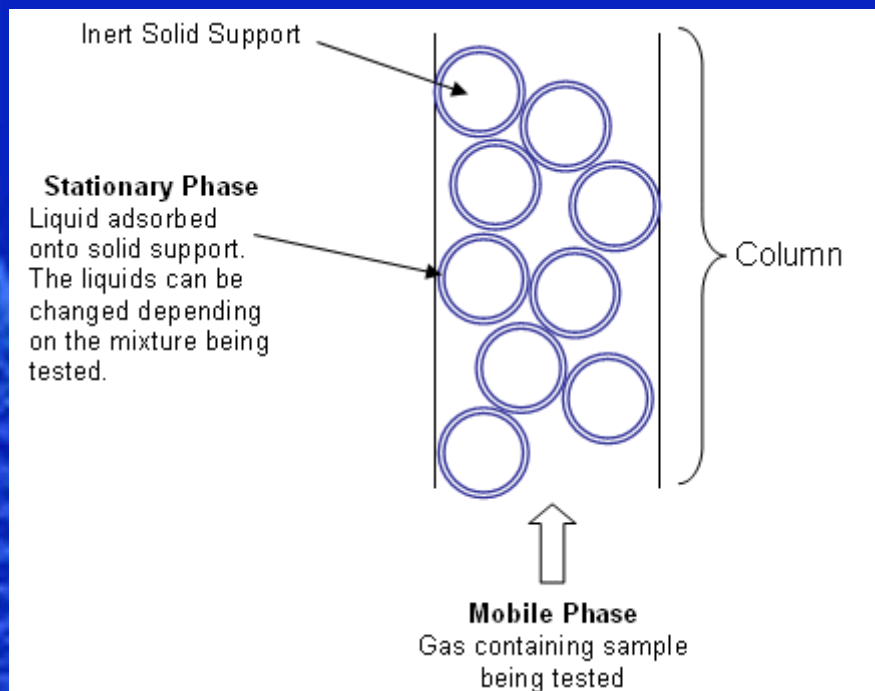
- * It is a technique where by the components of a mixture in the gaseous state are separated as the sample passes over a stationary liquid or solid phase and a gaseous mobile phase*
- * Based on stationary phase G.C classified into two types...*

Gas solid chromatography (G.S.C)

Gas liquid chromatography (G.L.C)

Gas Liquid Chromatography (G.L.C)

In a gas liquid chromatography the mobile phase is an unreactive gas, such as nitrogen (The carrier gas), and the stationary phase comprises of a small amount of Non volatile liquid held on a finely divided inert solid support....

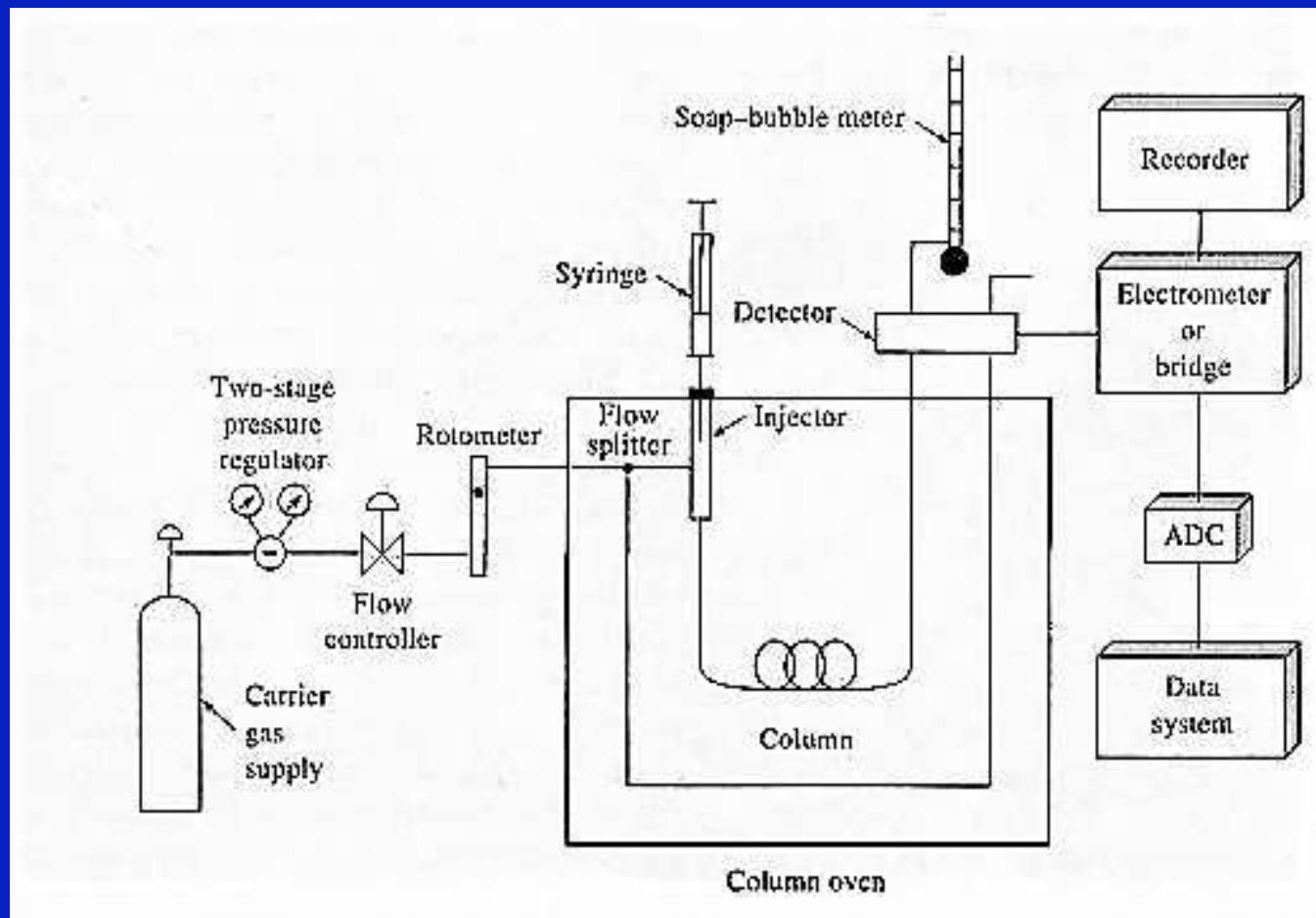


Gas liquid Chromatography Principle of Operation

- *Gas liquid chromatography runs on the principle of partition*
- *In GLC the components of vapourise samples are fractionated due to partition between a gaseous mobile phase and a liquid stationary phase held in column*

Instrumentation

- * *Flow of carrier gas*
- * *Flow regulator and flow meter*
- * *Injection Port*
- * *Column*
- * *Temperature Controlled Device*
- * *Detector*
- * *Recorder*



The Mobile Phase (carrier gas)

** An inert gas such as He*

** Function is to transport sample vapours through column.*

** No chemical interaction with sample.*

** Sample Injection*

** Sample is injected using a syringe into a flowing stream of hot mobile phase .*

** High temperature causes vapourization of sample.*

** Introduces a narrow plough of sample vapour onto the column*

Columns

**Column is heart of GC, Which decides the separation efficiency*

**It is made up of glass or copper*

Detectors

**Generate an electrical signal proportional to solute concentration or mass flow rate.....*

Recorder

- * Recorder is a device that draws the chromatogram that results from a chromatographic process onto chart paper*
- * The device can have a full scale deflection voltage that commonly ranges from one mv to 10v*
- * The time scale of the chart movement normally ranges from about 1cm per second to 1cm per hour*

THANK YOU

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