



## Gas Chromatograph (GC)

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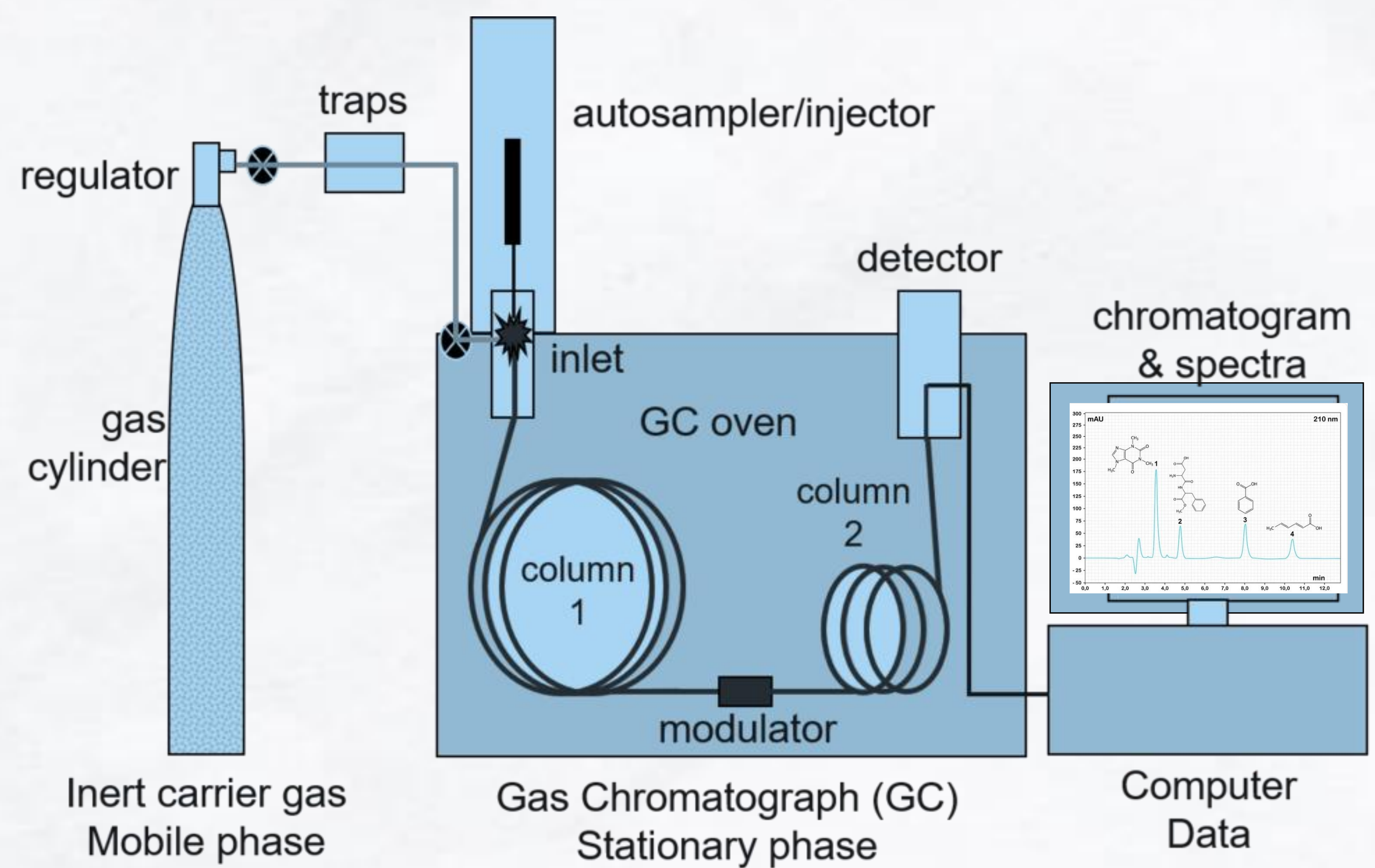
### INTRODUCTION :

A gas chromatograph (GC) is an analytical instrument that measures the content of various components in a sample. The analysis performed by a gas chromatograph is called gas chromatography. Gas chromatography is the process of separating compounds in a mixture by injecting a gaseous or liquid sample into a mobile phase, typically called the carrier gas, and passing the gas through a stationary phase.



### Operation :

The sample solution injected into the instrument enters a gas stream which transports the sample into a separation tube known as the "column." (Helium or nitrogen is used as the so-called carrier gas.) The various components are separated inside the column. The detector measures the quantity of the components that exit the column. To measure a sample with an unknown concentration, a standard sample with a known concentration is injected into the instrument. The standard sample peak retention time (appearance time) and area are compared to the test sample to calculate the concentration.



### Components :

1. Injection port
2. Column
3. Carrier gas flow control equipment
4. Ovens and heaters
5. Integrator chart recorder
6. Detector

### Uses :

1. Food analysis.
2. Quality control.
3. Research.
4. Forensics.
5. Measuring air pollution.
6. Blood alcohol analysis.

