

GC

Principle

Gas Chromatography (GC) is a type of chromatography used for separating and analyzing compounds that can be vaporized without decomposition. VOCs (Volatile Organic Compounds) and SVOCs (Semi-Volatile Organic Compounds) are normally analyzed, but other compounds can be analyzed previous derivatization.

A gaseous or liquid sample is injected in the carrier gas stream and interact with the stationary phase of the chromatographic column, that is commonly a microscopic layer of viscous liquid or solid particles. The separation of the constituents of a mixture is due to the different interaction of each compound with the stationary phase and/or by boiling point.


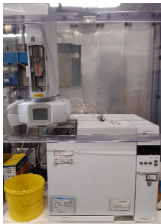


The time that each component takes to reach the detector (retention time) is the principle parameter used for the identification. Each component is detected as a chromatographic peak (ideally with Gaussian shape) and the area of the peak is used for quantification: the results can be expressed as Area Percentage (area of each peak vs sum of the area of all the peaks in the chromatogram) or with a calibration line (using response factors).

Different detectors are used to reach different goals in terms of sensibility (from ppb to percent), selectivity and specificity.

Capabilities

- Quantification of VOCs and SVOCs in different matrices: polymers, dispersions, final products, waters, gas, ecc...
- Quantitative determination of fluorosurfactants in different matrices: polymers, dispersions, final products, waters, ecc...;
- Determination of purity;
- Analysis of gas mixtures.

Assets

	Asset	Details
	Agilent Technologies 7890 GC System	GC System with autosampler for liquid injection and TCD and FID detectors
	Agilent Technologies 7820A GC System	GC System with autosampler for liquid and HeadSpace injection and TCD and FID detectors
	Agilent Technologies 7890A GC System	GC System with autosampler for liquid injection, microECD and FID detectors and LTM Column Module.
	Agilent Technologies 7890B GC System	GC System with autosampler for liquid and HeadSpace injection and TCD and FID detectors



**Thermo Scientific
Trace 1310**

GC System with Valve Oven and ECD and FID
detectors

[back to Organic Ion Chromatography and Gas Chromatography](#)