



Gas Chromatographer's Triple Quadrupole



TECHNICAL DETAILS

Manufacturer: Bruker

Model: 456 GC TQ

Extras: -

HOW IT WORKS?

This system can operate in GC-MS or GC-FID mode, with PTV and S/SL injectors.

A GC-MS is an analytical equipment that allows the analysis of several compounds in a sample (identification and quantification). The principle of the gas chromatography technique: a sample solution is inserted into the equipment's injector and transported by a gas through column (helium as carrier gas). The various components present in the sample are separated within the column in the oven and are analysed in the mass spectrometer with triple quadrupole detector.

To quantify a sample of unknown concentration, a standard must be injected into the equipment. The retention time of the standard and its area will be compared with the sample and used to calculate the concentration. Allows for identification of organic compounds using NIST libraries and quantification of target compounds by Full scan, SIM and MRM (MS/MS and MS_n reduce matrix influences and provide more detailed structural information).

In GC-FID mode, FID detector uses a flame to ionize organic compounds containing carbon. Following separation of the sample in the GC column, each analyte passes through a flame, fuelled by hydrogen and zero air, which ionizes the carbon atoms. The intensity of response depends on the number of oxidizable carbon atoms in the molecule.

APPLICATIONS

The system can be used in food analysis and testing, environmental analysis, forensic, hydrocarbon analysis, and unknown sample identification. The equipment is configured to identify and, in some cases, measuring biological fluid steroid in fish; identify pheromone in fish, support evaluation studies of biological activity (antimicrobial, antioxidant, cytotoxicity).

ANALYSIS REQUIREMENTS

Samples must be volatile and thermally stable. Liquid samples (filtered at 0.2 µm). The volume required is 500µl (vial) or 100µl (insert) of sample. In case of method development, a minimum of 1 ml solution will be required. Sample, blanks, and standards must be processed with same procedure steps.

ACCESS CONDITIONS

Remote