INTRODUCTION:

Laboratories worldwide use elemental analyzers for measuring the carbon, hydrogen, nitrogen, sulfur, oxygen, and halogen content in samples such as chemical-reaction products, soils, biological fluids, and waste or drinking water. Benchtop elemental analyzers come in a variety of types for specific applications: total organic content (TOC), total organic halogen (TOX), nitrogen, nitrogen concentration relative to protein (N/protein) derived from protein molecules, and CHN analyzers, named after the three main elements they measure—carbon (C), hydrogen (H), nitrogen (N). This purchasing guide presents models of benchtop elemental analyzers currently available for the laboratory.

TOC ANALYZERS

TOC analyzers instantly measure organic material in waters, a critical choice for testing water quality and validating environmental standards. Total organic carbon (TOC) analyzers measure the carbon content of a sample. TOC analyzers can be used to measure the carbon content of biological samples, purgeable organic halogen (POX) in industrial solvents. TOC analyzers indirectly measure organic molecules in water, a popular choice for testing water quality and validating environmental standards.

NITROGEN ANALYZERS

Nitrogen analyzers come in several types that are suitable for different applications. Some nitrogen analyzers are designed for use in chemical labs, while others are used in environmental labs. The type of nitrogen analyzer you choose will depend on the specific needs of your laboratory.

CHN ANALYZERS

CHN analyzers determine the elemental composition of soils, paints, and gases by measuring the carbon, hydrogen, and nitrogen content of a sample. CHN analyzers are useful for determining the elemental composition of a variety of materials, including paints, wood, textiles, and biological samples. CHN analyzers are available in a range of sizes and models, so it's important to choose one that meets the needs of your laboratory.

LAB MANAGER'S INDEPENDENT GUIDE TO PURCHASING AN ELEMENTAL ANALYZER

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The flared end of this pump tubing allows the large sample capillary tube to be inserted. It can be difficult to insert the sample tube into the peristaltic pump tubing on your ICP-MS. This is particularly so if the peristaltic pump tubing has a small internal diameter (ID). An example is the pump tubing used for the internal standard which usually has an ID of 0.2 to 0.4 mm and is incompatible with the sample tubing OD of 1.3 mm.

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