

helium ionization detector

in gas chromatography

A weak beta source and a high potential raise the helium atom of the carrier gas to a metastable state. All other substances having an ionization potential lower than 18 eV are ionized, and the current that results is used to measure the components. The detector is usually employed to measure inorganic compounds at concentrations between 0.1 and 10 ppmv. It has a linear range of about 10^2 but is somewhat unstable and requires great care to ensure the helium purity and to eliminate all leaks in the system.

Source:

PAC, 1990, 62, 2167 (*Glossary of atmospheric chemistry terms (Recommendations 1990)*) on page 2191