

electron capture detector (in gas chromatography)

A small radioactive source containing ^3H or ^{63}Ni ionizes the molecules of the carrier gas (nitrogen or argon–methane), and a potential difference creates a small current. This current is reduced when an electronegative substance (such as a halocarbon) is introduced. The reduction in current is a measure of the concentration of the electronegative substance. The detection limit (threshold) varies greatly according to the substances to be analysed and can reach a mixing ratio of 10^{-12} . The linear dynamic range may be 10^4 but the maximum measuring value generally lies below 1 ppmv.

1990, 62, 2191