

## electron capture detector

*in gas chromatography*

A small radioactive source containing  $^3\text{H}$  or  $^{63}\text{Ni}$  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.

**Source:**

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