doi:10.1351/goldbook.F02503

fraction extracted, E

The fraction of the total quantity of a substance extracted (usually by the solvent) under specified conditions, i.e. $E_{\mathrm{A}} = \frac{Q_{\mathrm{A}}}{Q_{\mathrm{A}}^{'}}$ where Q_{A} is the mass of **A** extracted and $Q_{\mathrm{A}}^{'}$ is the total mass of **A** present at the start.

Notes:

1. E may be expressed as a percentage, $\%\ E$.
2. The term extractability is qualitative and should not be used as a synonym for fraction extracted.
3. If the aqueous phase is extracted with n successive portions of solvent, the phase volume ratio (solvent/feed) being r each time, the fraction extracted is given by:

   $$E_n = 1 - (r\,D + 1)^{-n}$$

   If $n = r = 1$ and $E_1 = \frac{D}{1 + D}$ this expression is a concept of value in chromatography theory.
4. The fraction extracted is also known as the recovery factor, especially for a multistage process.

Source:

PAC, 1993, *65*, 2373 *(Nomenclature for liquid-liquid distribution (solvent extraction) (IUPAC Recommendations 1993))* on page 2384

