

## Recommended Nomenclature for Solvent Extractions Terms

**Aqueous Continuous:** The condition when the organic phase is dispersed as small droplets throughout the aqueous phase.

**Crud:** A common term for the mass of solids that accumulate at the organic/aqueous interface.

**Diluent:** The organic solvent that the extractant is dissolved in to form the organic phase. It consists of either aliphatic or aromatic hydrocarbons, or a mixture of the two.

**Dispersion:** An unstable emulsion caused by contacting the organic and aqueous phases.

**Distribution Coefficient:** It is a measure of the extracting power of the organic phase. It equals the concentration of the metal in the organic phase divided by the concentration in the aqueous phase.

**Distribution Curve:** Also known as isotherm and McCabe-Thiele diagram. It is a plot showing the relationship, at equilibrium, between the concentration of the metal in the aqueous phase as a function of the metal in the organic phase.

**Emulsion:** It is a stable dispersion of the organic and aqueous phases that require a long time to coalesce and separate.

**Entrainment:** is the suspension of small droplets of one phase that is carried away by another phase.

**Extractant:** The active component in the organic phase that chemically reacts with the metal to form an organic-metal complex that is soluble in the organic phase.

**Extraction Kinetics:** The rate at which a metal transfers from the aqueous phase to the organic phase. It determines the contact time and size of the mixer.

**Loading Capacity:** The maximum concentration of a metal in the organic phase under a given set of conditions.

**Modifier:** A component added to the organic phase, usually for preventing the formation of a third phase by increasing the solubility of the organic-metal complex.

**O/A Ratio:** The quantity of organic phase divided by the quantity of aqueous phase.

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**Percent Extraction:** It is calculated by the following equation:

$$\% \text{ ext}'n = O/A \times D / (1 + O/A \times D) \times 100$$

“D” is the distribution coefficient.

**Phase Continuity:** The type of dispersion of the two phases; either aqueous or organic continuous.

**Phase Disengagement:** A term used to describe when the organic and aqueous phases coalesce and separated into two components

**Phase Inversion:** A change in the dispersion from one phase continuity to the other.

**Separation Factor:** It is a measure of the selectivity of the organic phase. It is calculated by the following equation:

$$SF = D_{\text{metal}} / D_{\text{impurity}}$$

“D” is the distribution coefficient.

**Settler Area:** A measurement to describe the required size for a settler. Usually expressed as  $\text{m}^3/\text{h}/\text{m}^2$

**Organic Continuous:** The condition when the aqueous phase