

### 3.1: Standard State of Nonvolatile Solutions

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The activity is a relative measure as it measures equilibrium relative to a standard state. The standard state is defined by the International Union of Pure and Applied Chemistry (IUPAC) and followed systematically by chemists around the globe. The standard state for a solution is defined in terms of the infinite-dilution behavior. This is in contrast to the standard state concentration of 1 mol/L. This can be reconciled by considering that the standard state is a hypothetical solution of 1 mol/L in which the solute has infinite-dilution properties, e.g. solute particles do not interact with each other. This means that the activity coefficient describes all non-ideal behavior when the value is not equal to 1.

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