

## SECTION OVERVIEW

### 16.9 Free Energy and Work

The concept of an ideal solution is fundamental to chemical thermodynamics and its applications, such as the use of colligative properties. An **ideal solution** or ideal mixture is a solution in which the enthalpy of solution ( $\Delta H_{\text{solution}} = 0$ ) is zero; with the closer to zero the enthalpy of solution, the more "ideal" the behavior of the solution becomes. Since the enthalpy of mixing (solution) is zero, the change in Gibbs energy on mixing is determined solely by the entropy of mixing ( $\Delta S_{\text{solution}}$ ).

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