

Freezing points are best determined by plotting a curve of temperature vs. time for a substance as it cools from a liquid (or molten) state to the solid state. This is caused by the tendency of the solvent to exclude solute as it freezes; that is, it tends to freeze pure, which causes the concentration of the solution to increase as solid forms. The cooling curve will often show a dip where the liquid becomes super cooled before crystallization begins. The freezing point is determined by extrapolating the temperature at the flat section of the graph where freezing is occurring back to the Y-axis. Once freezing actually begins, the temperature will rise due to the release of  $\Delta H_{\text{fus}}$ , the enthalpy of fusion.