

phases are initially at different pressures and/or different chemical potentials whereas, in the adiabatic example, they are initially at different temperatures and/or different chemical potentials, the stable phase being in a temperature range where that phase is stable. In each case, there is a difference in an intensive property, and there exist conditions where the stable phase will be the one that disappears. It somehow seems less surprising that a small amount of stable phase could dissolve into a metastable phase at a different temperature, than into one with different chemical potentials.

In an isothermal multicomponent system, closed with respect to material, chemical potentials did not need to change monotonically as the system approached equilibrium. In Hillert's kinds of closed systems, pressure and temperature do not need to change monotonically. It should be possible to have a series of metastable adiabatic equilibria, in which the temperature takes on values on either or both sides of the final equilibrium temperature. The same thing is possible for pressure, but inertial effects (such as sound waves), which are usually not included in thermodynamics of phase equilibria, can also give oscillatory pressure changes.

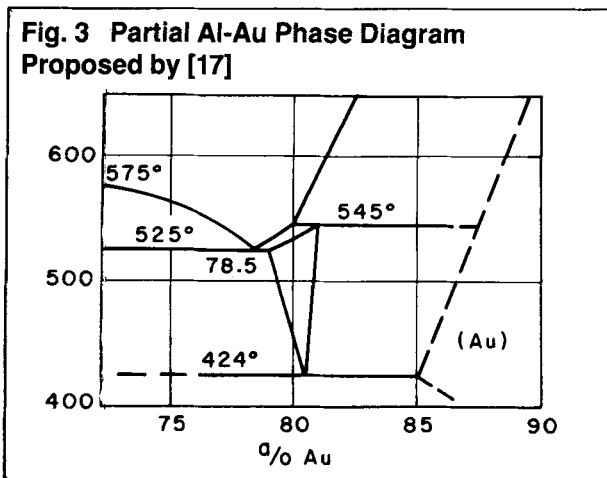
Consider, for example, a liquid held adiabatically below its triple-point pressure. For a wide range of initial temperature, the entropy content is such that the final equilibrium is solid plus vapor. Depending on whether solid or vapor nucleates first, the temperature will respectively either rise or fall. In some of these cases, the temperature will initially move further away from its final equilibrium temperature.

During fast reactions, large systems often approximate adiabatic conditions. Undercooling is often observed to terminate with rapid thermal changes. Temperature and pressure, unlike chemical potential, are easier to monitor during a metastable reaction sequence. A system closed with respect to volume and heat could indeed give valuable information about metastable reactions.

Contributed by J.W. Cahn, Metallurgy Division, Center for Materials Science, National Bureau of Standards.

### The Al-Au (Aluminum-Gold) System

On page 72 of Vol. 2, No. 1, Fig. 3 should be changed as shown in the following figure.



In Reference 38 on page 74 of Vol. 2, No. 1, the authors should read "M.E. Straumanis and J.S. Shah".

### Evaluations of Alloy Systems

On page 43, line 10 of Vol. 1, No. 2, in the sentence, "The third set consists of six previously unpublished U-X binary diagrams (where X = Cd, H, Hg, Mg, Sb or Zn) that were recently evaluated by Chiotti", the words "previously unpublished" should have been deleted because most of these phase diagrams have been previously published as acknowledged in the references.

### The H-U (Hydrogen-Uranium) System

On page 101 of Vol. 1, No. 2, the constant term in Table 1, Equation 6, should be 6.415.

### The V (Vanadium) System

On page 40 of Vol. 2, No. 1, Fig. 2 should be replaced by the following figure.

**Fig. 1 Heat Capacity Versus Temperature for V**

