

APPENDIX 1

Determination of the Resistance at Perfect Order, R_o .

The following procedure was used to determine the quantity $R_o(T,P)$, the resistance the sample would have were it perfectly ordered at the temperature and pressure of the kinetic run. This quantity must be found for each sample for use in the rate equation (Eq. 1). All of the samples were annealed at 368°C to grow a large, stable domain size. During this anneal the resistance of one sample was monitored.

The resistance of the monitored sample at perfect order and 25°C was determined as follows:

(1) A large domain sample was reheated to 368°C in the annealing furnace and equilibrated at a series of temperatures from 368°C to 298°C . The equilibrium resistance of the monitored sample was measured at each temperature. The order-dependent portion of the resistance at each temperature was extracted from the measured resistance by subtracting the temperature dependent resistance. The temperature-coefficient of resistance at constant order was measured by reheating the samples to 368°C , quenching to room temperature, and measuring the variation of resistance at constant order in the range from 22 - 38°C . The temperature coefficient of resistance of the quenched sample at constant order, $(dR/dT)_q$, was 3×10^{-5} ohm/ $^\circ\text{C}$.