from equations (3) that at the point of equal concentrations

.....R.p. 389 (6)

The criterion for the formation of a diagram of this type is

.....R.p. 389 (7)

(together with the satisfaction of inequalities (2) or (2a)).

Table 1

Key

1) System

2) calc.

3) expt.

According to (6), at the point of equal concentrations

.....R.p. 389 (8)

In this relation between T_m and x_o there are no unknown energies of mixing ; hence the validity of the calculation may be verified primarily by reference to the satisfaction of relation (8).

Data for ten binary systems forming diagrams with points of equal concentrations are given in Table 1 (T_m the calculated T_m were determined from (8) by means of experimental values of x_o).

The calculated and experimental values of T_m agree closely for all the systems considered except two : gold-copper and gold-nickel, which are characterized by the greatest difference between the atomic radii of the components, so that the "lattice-distortion energy" is a maximum /2/. The deviations from relation (8) for the Au-Cu and Au-Ni systems qualitatively agree with those expected after considering the energy of distortion.