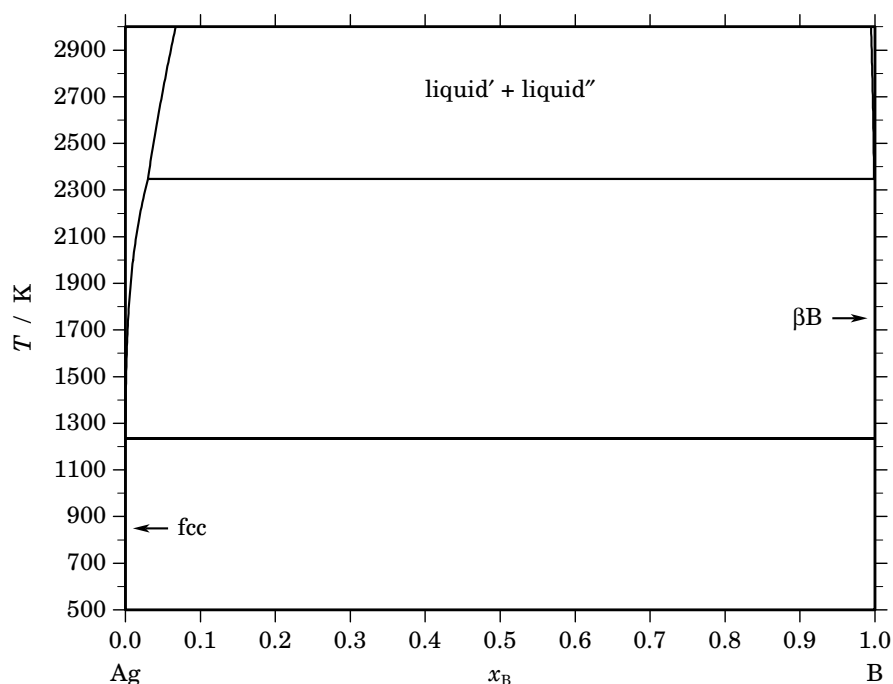


Ag – B (Silver – Boron)**Fig. 1.** Calculated phase diagram for the system Ag-B.

No phase diagram data are available for the Ag-B system, except for the invariant equilibrium at 1235 K reported by Wald and Stormont [1970Wal]. Ag and B are immiscible in both the liquid and solid state [1965Wal]. This is consistent with the reported insolubility of B in liquid Ag even at 1873 K [1915Gie]. However, reliable information on the extent of minor solubilities is not available. The compound AgB_2 was obtained by direct synthesis at an unspecified temperature and identified as having a hexagonal structure [1961Obr]. However, X-ray results of alloys with 66.6 at.% B [1965Wal] annealed for two months at 1173 K did not confirm the existence of AgB_2 [1990Kar]. The thermodynamic assessment of the Ag-B system was carried out by Korb [2004Kor]. The calculated phase diagram is in good agreement with available experimental information.

Table I. Phases, structures and models.

Phase	Struktur- bericht	Prototype	Pearson symbol	Space group	SGTE name	Model
liquid					LIQUID	$(\text{Ag},\text{B})_1$
fcc	A1	Cu	$cF4$	$Fm\bar{3}m$	FCC_A1	$\text{Ag}_1(\text{B},\square)_1$
βB	...	βB	$hR105$	$R\bar{3}m$	BETA_RHOMBO_B	$\text{B}_{93}\text{B}_{12}$

Table II. Invariant reactions.

Reaction	Type	T / K	Compositions / x_{B}			$\Delta_{\text{r}}H / (\text{J/mol})$
$\text{liquid}'' \rightleftharpoons \text{liquid}' + \beta\text{B}$	monotectic	2346.9	0.999	0.030	1.000	–50292
$\text{liquid} + \beta\text{B} \rightleftharpoons \text{fcc}$	degenerate	1234.9	0.000	1.000	0.000	–11297

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