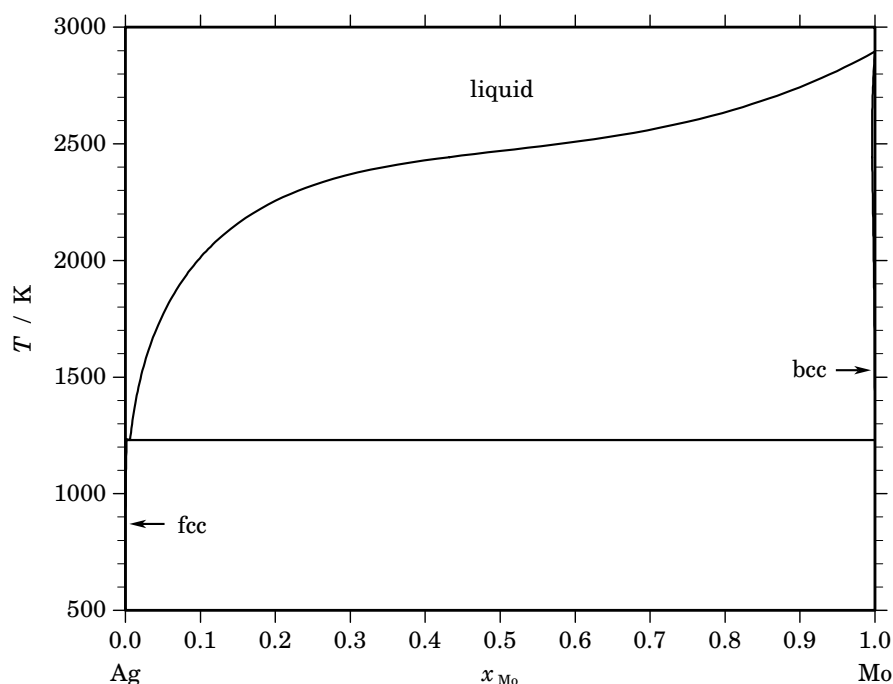


**Ag – Mo (Silver – Molybdenum)****Fig. 1.** Calculated phase diagram for the system Ag-Mo.

The experimental information on the Ag-Mo system is limited [1990Bar]. The Ag-Mo system is characterised by the liquid, the fcc phase based on Ag and the bcc phase based on Mo with very small solubility for Ag. The experimental studies [1924Dre, 1948Lin] indicate the insolubility of Mo in solid silver as determined by X-ray investigations and microscopy. According to Dreibholz [1924Dre] liquid Ag can dissolve at least 5.6 at.% Mo at about 1873 K. Linel [1948Lin] observed that several percent of Mo are soluble in liquid Ag at 1673 K. An assessment for the Ag-Mo system has been provided by Korb [2004Kor]. The invariant at 1231 K reported by Baren in [1990Bar] can be reproduced well by the calculations.

**Table I.** Phases, structures and models.

Phase	Strukturbericht	Prototype	Pearson symbol	Space group	SGTE name	Model
liquid					LIQUID	(Ag,Mo) <sub>1</sub>
fcc	A1	Cu	<i>cF4</i>	<i>Fm<math>\bar{3}m</math></i>	FCC_A1	(Ag,Mo) <sub>1</sub>
bcc	A2	W	<i>cI2</i>	<i>Im<math>\bar{3}m</math></i>	BCC_A2	(Ag,Mo) <sub>1</sub>

**Table II.** Invariant reactions.

Reaction	Type	<i>T</i> / K	Compositions / <i>x</i> <sub>Mo</sub>			$\Delta_r H$ / (J/mol)
liquid $\rightleftharpoons$ fcc + bcc	eutectic	1230.0	0.006	0.002	1.000	−11513

**Table IIIa.** Integral quantities for the liquid phase at 2900 K.

$x_{\text{Mo}}$	$\Delta G_{\text{m}}$ [J/mol]	$\Delta H_{\text{m}}$ [J/mol]	$\Delta S_{\text{m}}$ [J/(mol·K)]	$G_{\text{m}}^{\text{E}}$ [J/mol]	$S_{\text{m}}^{\text{E}}$ [J/(mol·K)]	$\Delta C_P$ [J/(mol·K)]
0.000	0	0	0.000	0	0.000	0.000
0.100	−4484	1954	2.220	3355	−0.483	0.000
0.200	−6128	3444	3.300	5938	−0.860	0.000
0.300	−6969	4481	3.948	7760	−1.131	0.000
0.400	−7397	5076	4.301	8831	−1.295	0.000
0.500	−7555	5241	4.412	9159	−1.351	0.000
0.600	−7474	4986	4.296	8754	−1.299	0.000
0.700	−7103	4323	3.940	7626	−1.139	0.000
0.800	−6281	3264	3.291	5785	−0.869	0.000
0.900	−4599	1819	2.213	3240	−0.490	0.000
1.000	0	0	0.000	0	0.000	0.000

Reference states: Ag(liquid), Mo(liquid)

**Table IIIb.** Partial quantities for Ag in the liquid phase at 2900 K.

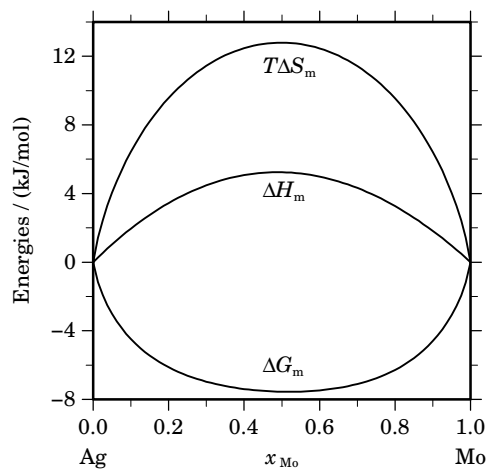
$x_{\text{Ag}}$	$\Delta G_{\text{Ag}}$ [J/mol]	$\Delta H_{\text{Ag}}$ [J/mol]	$\Delta S_{\text{Ag}}$ [J/(mol·K)]	$G_{\text{Ag}}^{\text{E}}$ [J/mol]	$S_{\text{Ag}}^{\text{E}}$ [J/(mol·K)]	$a_{\text{Ag}}$	$\gamma_{\text{Ag}}$
1.000	0	0	0.000	0	0.000	1.000	1.000
0.900	−2153	234	0.823	387	−0.053	0.915	1.016
0.800	−3845	921	1.643	1536	−0.212	0.853	1.066
0.700	−5174	2038	2.487	3426	−0.479	0.807	1.153
0.600	−6277	3564	3.393	6040	−0.854	0.771	1.285
0.500	−7355	5474	4.424	9358	−1.339	0.737	1.474
0.400	−8733	7748	5.683	13361	−1.935	0.696	1.740
0.300	−11001	10363	7.367	18029	−2.643	0.634	2.112
0.200	−15463	13296	9.917	23344	−3.465	0.527	2.633
0.100	−26234	16525	14.745	29286	−4.400	0.337	3.369
0.000	−∞	20027	∞	35836	−5.451	0.000	4.420

Reference state: Ag(liquid)

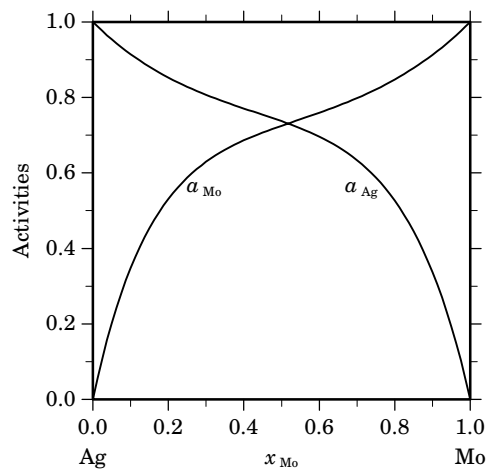
**Table IIIc.** Partial quantities for Mo in the liquid phase at 2900 K.

$x_{\text{Mo}}$	$\Delta G_{\text{Mo}}$ [J/mol]	$\Delta H_{\text{Mo}}$ [J/mol]	$\Delta S_{\text{Mo}}$ [J/(mol·K)]	$G_{\text{Mo}}^{\text{E}}$ [J/mol]	$S_{\text{Mo}}^{\text{E}}$ [J/(mol·K)]	$a_{\text{Mo}}$	$\gamma_{\text{Mo}}$
0.000	−∞	21898	∞	37433	−5.357	0.000	4.723
0.100	−25458	17434	14.790	30062	−4.354	0.348	3.479
0.200	−15259	13536	9.929	23548	−3.453	0.531	2.655
0.300	−11158	10180	7.358	17873	−2.653	0.630	2.099
0.400	−9078	7344	5.663	13016	−1.956	0.686	1.716
0.500	−7754	5007	4.400	8959	−1.363	0.725	1.450
0.600	−6634	3144	3.372	5683	−0.875	0.759	1.266
0.700	−5432	1735	2.472	3168	−0.494	0.798	1.140
0.800	−3985	756	1.635	1395	−0.220	0.848	1.060
0.900	−2195	185	0.821	346	−0.055	0.913	1.014
1.000	0	0	0.000	0	0.000	1.000	1.000

Reference state: Mo(liquid)



**Fig. 2.** Integral quantities of the liquid phase at  $T=2900$  K.



**Fig. 3.** Activities in the liquid phase at  $T=2900$  K.

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