

Al-Ca (Aluminum-Calcium)

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The Al-Ca phase diagram in [Massalski2] was adopted from [1988Itk]. The existence of two compounds, Al_4Ca and Al_2Ca , was reported.

[2001Kev1] investigated the Al-Ca phase diagram by means of differential thermal analysis (DTA), x-ray diffrac-

tion (XRD), energy-dispersive X-ray, diffusion couple, and metallography. Two new compounds, AlCa and Al_3Ca_8 , were discovered. Based on the result of [2001Kev1] and additional calorimetric measurements, [2001Kev2] assessed the Al-Ca phase diagram thermodynamically. The result is shown in Fig. 1.

The Al-Ca crystal structure data in Table 1 are from [1988Itk] for Al_4Ca and Al_2Ca , and from [2001Kev1] for Al_3Ca_8 . The crystal structure of AlCa has not been reported.

Table 1 Al-Ca Crystal Structure Data

Phase	Composition, at.% Ca	Pearson Symbol	Space Group	Strukturbericht Designation	Prototype
(Al)	0	<i>cF4</i>	$Fm\bar{3}m$	A1	Cu
Al_4Ca	20	<i>tI10</i>	$I4/mmm$	$D1_3$	Al_4Ba
Al_2Ca	33.3	<i>cF24</i>	$Fd\bar{3}m$	C15	Cu_2Mg
AlCa	50
Al_3Ca_8	61.5	<i>aP22</i>	$P\bar{1}$...	Ca_8In_3
(βCa)	100	<i>cI2</i>	$Im\bar{3}m$	A2	W
(αCa)	100	<i>cF4</i>	$Fm\bar{3}m$	A1	Cu

References

- 1998Itk:** V.P. Itkin, C.B. Alcock, P.J. van Ekeren, and H.A.J. Oonk: *Bull. Alloy Phase Diagrams*, 1988, 9(6), pp. 669-72.
- 2001Kev1:** D. Kevorkov and R. Schmid-Fetzer: *Z. Metallkd.*, 2001, 92(8), pp. 946-52.
- 2001Kev2:** D. Kevorkov, R. Schmid-Fetzer, A. Pisch, F. Hodaj, and C. Colinet: *Z. Metallkd.*, 2001, 92(8), pp. 953-58.

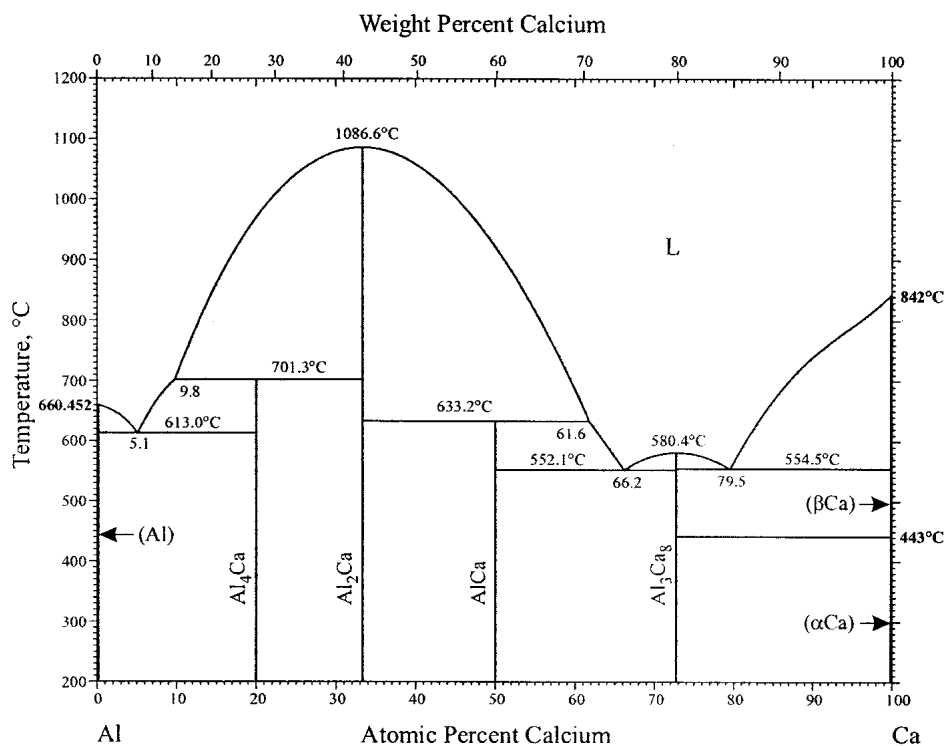


Fig. 1 Al-Ca phase diagram