JPEDAV (2005) 26:292
DOI: 10.1361/15477030523599
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La-O (Lanthanum-Oxygen)

H. Okamoto

The La-O phase diagram was unknown at the time of publication of [Massalski2] and was therefore omitted from the compilation.

A tentative La-O phase diagram shown in Fig. 1 is a result of a thermodynamic assessment by [2001Gru]. In addition to the three La_2O_3 polymorphs shown in this diagram, [Massalski2] shows the existence of αLa_2O_3 stable below 550 °C.

La-O crystal structure data in Table 1 are as given in [Massalski2].

Reference

2001Gru: A.N. Grundy, B. Hallstedt, and L.J. Gauckler, Thermodynamic Assessment of the Lanthanum-Oxygen System, *J. Phase Equilibria,* Vol 22 (No. 2), 2001, p 105-113

Table 1 La-O crystal structure data

Phase	Composition, at.% O	Pearson symbol	Space group	Strukturbericht designation	Prototype
(γLa)	0–7	*cI*2	$Im\bar{3}m$	*A*2	W
(βLa)	0–6.5	*cF*4	$Fm\bar{3}m$	*A*1	Cu
(αLa)	0–0.4	*hP*4	$P6_3/mmc$	*A*3′	αLa
δLa_2O_3	58.5–60	*cI*8	$Im\bar{3}m$	…	…
γLa_2O_3	58.5–60	*hP**	$P6_3/mmc$	…	…
βLa_2O_3	58.5–60	*hP*5	$P\bar{3}m1$	$D5_2$	La_2O_3
αLa_2O_3	60	*cI*80	$Ia\bar{3}$	$D5_3$	Mn_2O_3

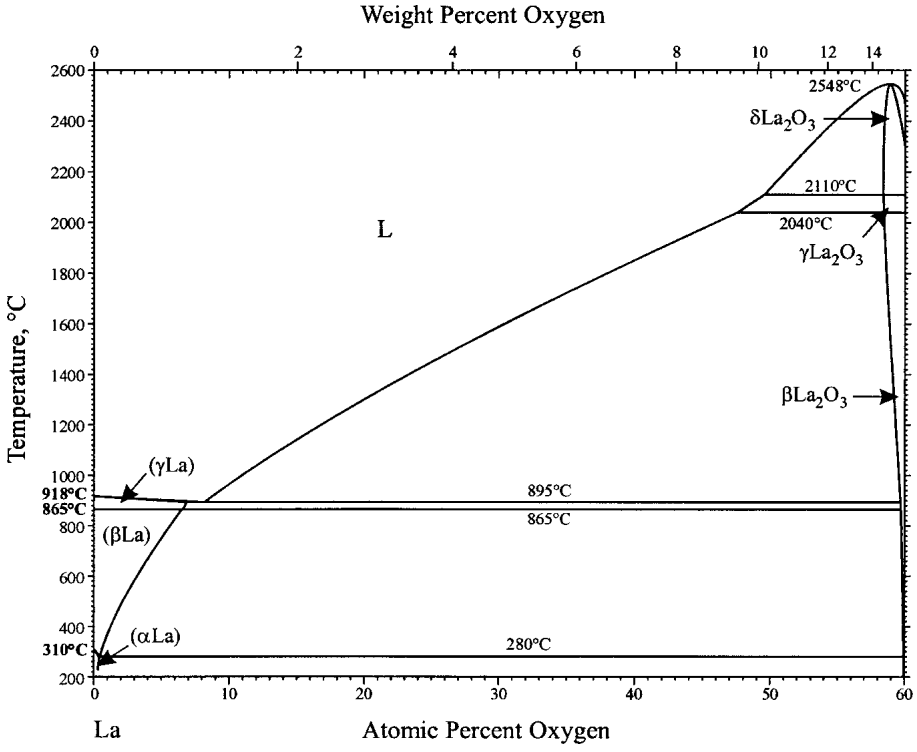

Fig. 1 La-O phase diagram