Table 2 Cu-Ba Crystal Structure Data

Phase	Composition, at.%	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Cu)	0	*cF*4	$Fm\bar{3}m$	*A*1	Cu
$Cu_{13}Ba$	7.1	*cF*112	$Fm\bar{3}c$	$D2_3$	$Zn_{13}Na$
CuBa	50	*hP*8	$P6_3/mmc$	...	...
(Ba)	100	*cI*2	$Im\bar{3}m$	*A*2	W

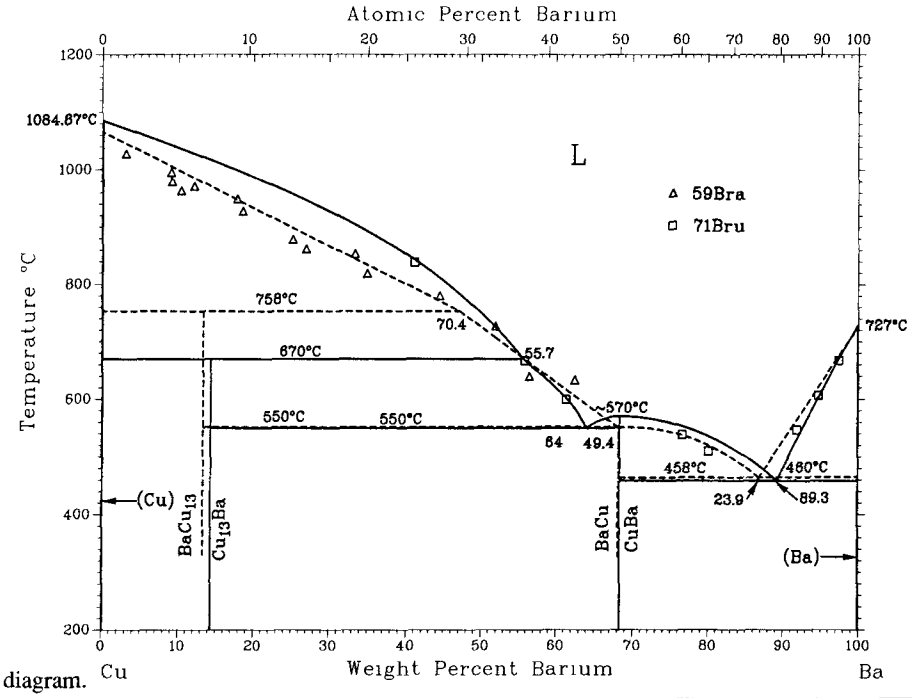

Fig. 1 Cu-Ba phase diagram.

Comment on Ca-Fe (Calcium-Iron)

H. Okamoto

The Fe-Ca phase diagram in [Massalski2] was redrawn from the evaluation published later by [92Kah]. The Fe-rich side of the Fe-Ca phase diagram is shown in Fig. 1a. [64Spo] reported the maximum solubility of Ca in (δFe) to be approximately 0.032 at.%.

[93Gla] determined the Fe-rich end of the Fe-Ca phase diagram by DTA (Fig. 1b). Ca acts as an α stabilizer. Accordingly, a γ loop forms. The maximum solubility of Ca in Fe found by [93Gla] is approximately 0.0004 at.%, in agreement with [60Kre] but ~ 1/100 of the value estimated by [92Kah]. The effect of Ca gas pressure may have to be considered to account for this substantial disagreement.

Cited References

60Kre: N.S. Kreshchanovskii, "On the Partition of Calcium in Cast Steel," *Liteinoe Proizvod.*, (8), 31 (1960); quoted in [93Gla].

64Spo: D.L. Sponseller and R.A. Flinn, *Trans. AIME, 230*, 876-888 (1964).

92Kah: D.J. Kahan and L.J. Swartzendruber, *Phase Diagrams of Binary Iron Alloys*, H. Okamoto, Ed., ASM International, Materials Park, OH, 84-86 (1992).

93Gla: V.N. Gladkii and N.T. Shevelev, *Izv. Ross. Akad. Nauk Met.*, (6), 207-209 (1993) in Russian; TR: *Russ. Metall.*, (6), 113-115 (1993).

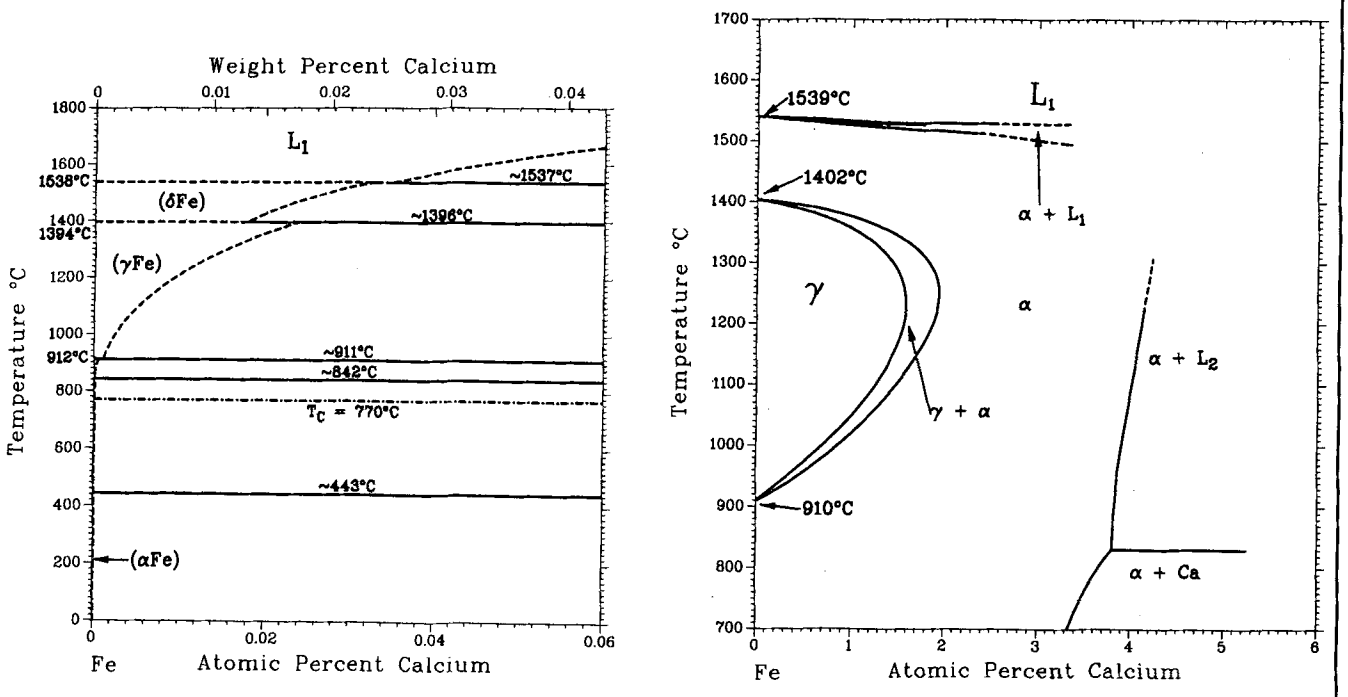

Fig. 1 Fe-Ca phase diagram. **(a)** Fe-rich end [Massalski2]. **(b)** Ca corner [93Gla].

Comment on Cu-Ti (Copper-Titanium)

H. Okamoto

The Ti-Cu phase diagram in [Massalski2] was redrawn from [87Mur]. No experimental data were available for the liquidus and solidus of (βTi). Accordingly, the (βTi)/(βTi) + Ti_2Cu boundary was not well defined.

[94Yam] determined the Ti-rich region of the Ti-Cu phase diagram by EPMA of heat-treated and quenched alloys (solid lines in Fig. 1). The maximum solubility of Cu in (βTi) is ~ 1.5 at.% higher and the (βTi) ↔ (αTi) + Ti_2Cu eutectoid temperature is ~10 °C higher in comparison with those in [87Mur]. The [87Mur] diagram is shown with dashed lines in Fig. 1.

[94Yam] also investigated the phase relationships in the same Ti-rich region at 1.9 and 2.8 GPa.

Cited References

87Mur: J.L. Murray, *Phase Diagrams of Binary Titanium Alloys*, J.L. Murray, Ed., ASM International, Metals Park, OH, 80-95 (1987).

94Yam: T. Yamane, S. Nakajima, H. Araki, Y. Minamino, S. Saji, J. Takahashi, and Y. Miyamoto, *J. Mater. Sci. Lett., 13*, 162-164 (1994).