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# Ca-Si (Calcium-Silicon)

*H. Okamoto*

Figure 1 shows the Ca-Si phase diagram calculated by [2003Gro] based on the experimental data of [2000Man] in addition to the data used adopted by [Massalski2].

Table 1 shows Ca-Si crystal structure data.

The Ca-Ni was evaluated more recently by [2006Hey] based on essentially the same phase boundary data as [2003Gro].

## References

**2000Man:** P. Manfrinetti, M.L. Fornasini, and A. Palenzona, The Phase Diagram of the Ca-Si System, *Intermetallics*, 2000, **8**(3), p 223-228

**2003Gro:** J. Gröbner, I. Chumak, and R. Schmid-Fetzer, Experimental Study of Ternary Ca-Mg-Si Phase Equilibria and Thermodynamic Assessment of Ca-Si and Ca-Mg-Si Systems, *Intermetallics*, 2003, **11**(10), p 1065-1074

**2006Hey:** M. Heyrman and P. Chartrand, Thermodynamic Evaluation and Optimization of the Ca-Si System, *J. Phase Equilib. Diffusion*, 2006, **27**(3), p 220-230

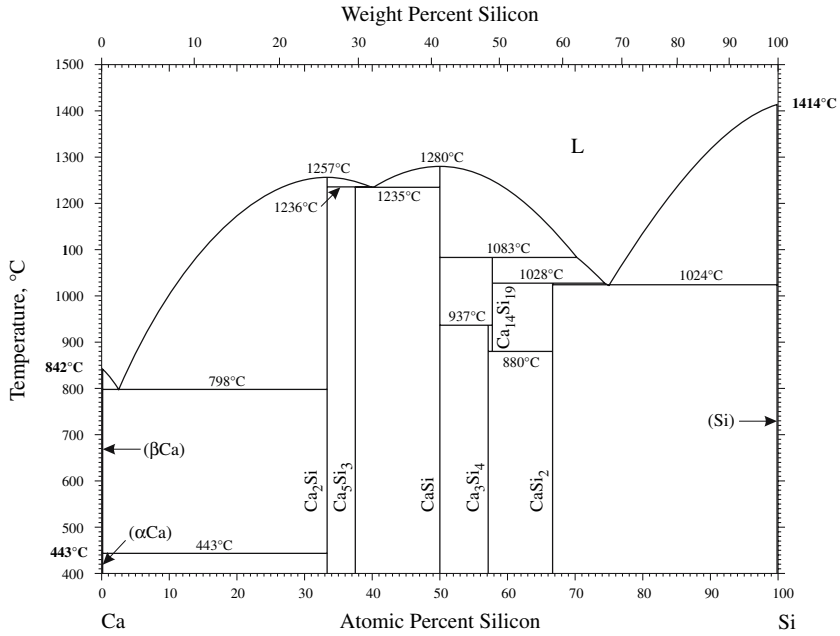


**Fig. 1** Ca-Si phase diagram

**Table 1 Ca-Si crystal structure data**

| Phase | Composition, at.% Si | Pearson symbol | Space group | Struktur-bericht designation | Prototype |
|---|---|---|---|---|---|
| (βCa) | 0 | *cI*2 | $Im\bar{3}m$ | *A*2 | W |
| (αCa) | 0 | *cF*4 | $Fm\bar{3}m$ | *A*1 | Cu |
| $Ca_2Si$ | 33.3 | *oP*12 | *Pnma* | *C*23 | $Co_2Si$ |
| $Ca_5Si_3$ | 37.5 | *tI*32 | *I*4/*mcm* | $D8_l$ | $Cr_5B_3$ |
| CaSi | 50 | *oC*8 | *Cmcm* | $B_f$ | CrB |
| $Ca_3Si_4$ | 57.1 | *hP*42 | $P6_3/m$ | ... | ... |
| $Ca_{14}Si_{19}$ | 57.6 | ... | ... | ... | ... |
| $CaSi_2$ | 66.7 | *hR*6 | $R\bar{3}m$ | *C*12 | $CaSi_2$ |
| (Si) | 100 | *cF*8 | $Fd\bar{3}m$ | *A*4 | C (diamond) |