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Ge-Sr (Germanium-Strontium)

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A tentative Ge-Sr phase diagram in [Massalski2] was updated by [2005Pal], as introduced by [2006Oka].

Figure 1 shows the Ge-Sr phase diagram calculated by [2009Du] based primarily on the phase boundary data provided by [2005Pal]. In the phase diagram of [2005Pal], $Ge_{1.85}Sr$ (35.7 at.% Sr) exists in a very limited temperature range (30 °C) from 1015 to 985 °C. [2006Oka] suspected the existence of this phase in the stable state. Obviously [2009Du] accepted the reasoning in [2006Oka] because the whole sentence in [2009Du] is the same as in [2006Oka], although [2006Oka] is not listed in the reference. Another feature new in Fig. 1 is the eutectoidal decomposition of Ge_3Sr_5 at 929 °C. [2009Du] thinks that thermal effects observed earlier by [1970Sha] and [1972Osi] at around this temperature are related to this eutectoidal decomposition.

References

1970Sha: R.L. Sharkey, On the Germanium-Strontium Phase Diagram, *J. Less-Common Met.*, 1979, **20**, p 113-119

1972Osi: A.F. Osipov, V.K. Prokofeva, A.A. Eliseev, S.P. Morozov, V.A. Tolstova, and E.B. Sokolov, Phase Transitions in the System Germanium-Strontium, *Inorg. Mater.*, 1972, **8**, p 579-582

2005Pal: A. Parenzona and M. Pani, The Phase Diagram of the Sr-Ge System, *J. Alloys Compd.*, 2005, **402**, p 136-140

2006Oka: H. Okamoto, Ge-Sr (Germanium-Strontium), *J. Phase Equilib. Diffus.*, 2006, **27**(5), p 547

2009Du: Y. Du, L. Li, J. Wang, J. Wang, and Z. Jin, A Thermodynamic Description of the Ge-Sr System Acquired Via a Hybrid Approach of CALPHAD and First-Principles Calculations, *Calphad.*, 2009, **33**, p 719-722

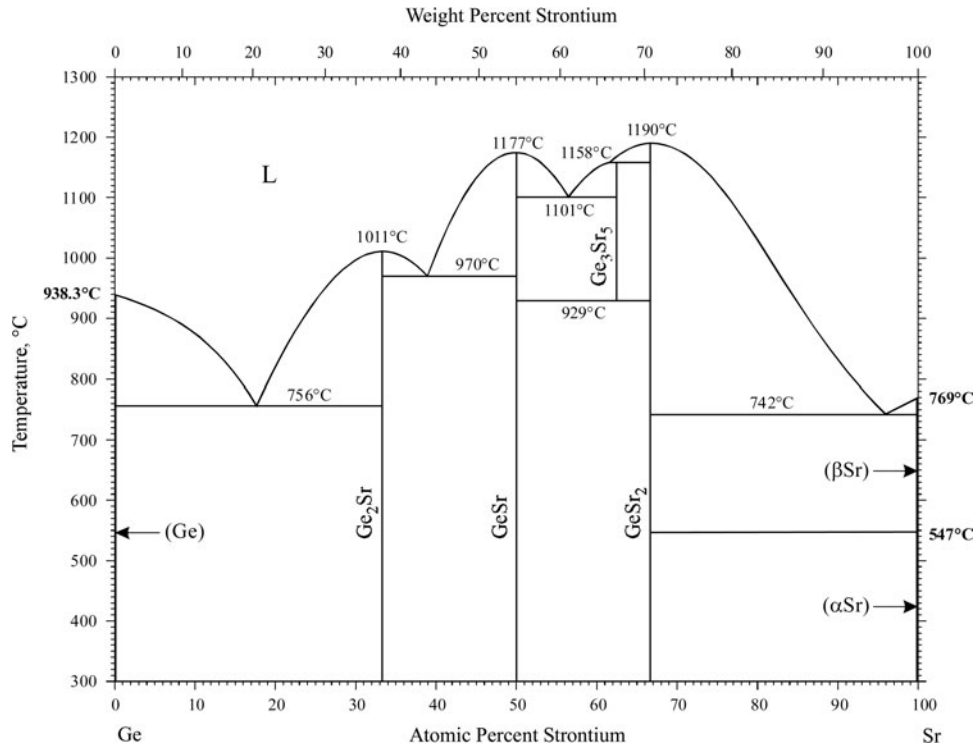

Fig. 1 Ge-Sr phase diagram [2009Du]