

## Ag – Ce (Silver – Cerium)

### Phase diagram

By thermodynamic calculations the Ag-Ce phase diagram has been obtained by [02 Yin]. The results are reproduced in Fig. 1.

### Thermodynamics

By high-temperature calorimetry at  $1473 \text{ K} \pm 2 \text{ K}$  Fitzner et al. [93 Fit] have determined enthalpies of mixing of liquid alloys. They are in good agreement with results determined at 1500 K by Ivanov et al. [83 Iva] [89 Iva] and by Sudavtsova et al. [88 Sud] as well as calculated data [02 Yin] (see Fig. 2).

Using enthalpies of mixing of liquid Ag-Ce alloys published by Ivanov et al. [92 Iva] and Gibbs free enthalpies of mixing published by Ivanov et al. [83 Iva], [87 Iva], entropies of mixing of liquid alloys have been calculated by [92 Iva]. The results are given in Fig. 3.

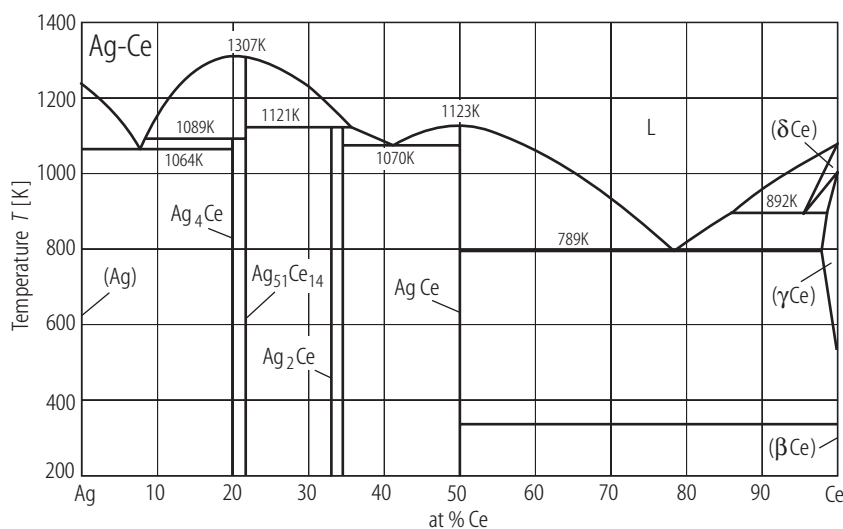
Enthalpies of formation and heat contents at 1473 K have been determined calorimetrically for two intermediate phases. From the results, standard enthalpies of formation have been calculated. The results are given in Table 1.

**Table 1. Ag-Ce.** Standard enthalpies of formation of intermediate phases in  $\text{kJ g-atom}^{-1}$ .

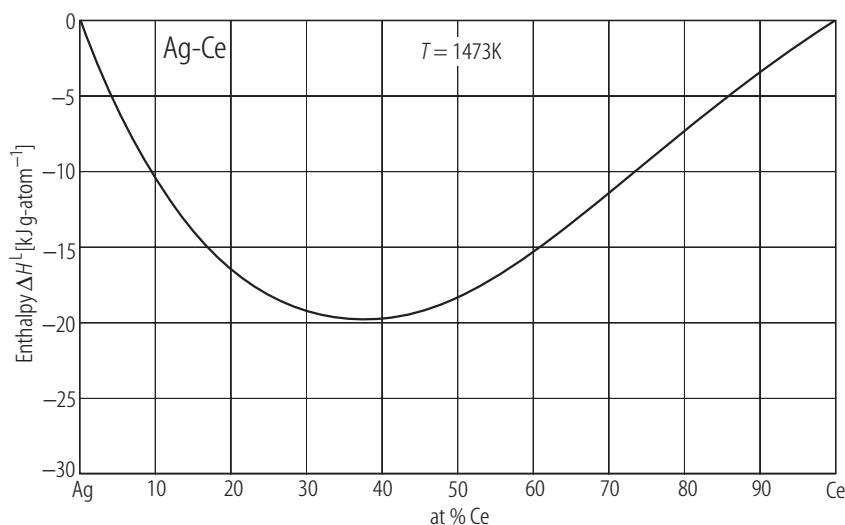
| Phase                          | $\Delta H_{298}^0$ |
|--------------------------------|--------------------|
| $\text{Ag}_{51}\text{Ce}_{14}$ | $-19.3 \pm 4.1$    |
| $\text{AgCe}$                  | $-13.5 \pm 4.3$    |

Thermodynamic properties have been calculated by [02 Yin].

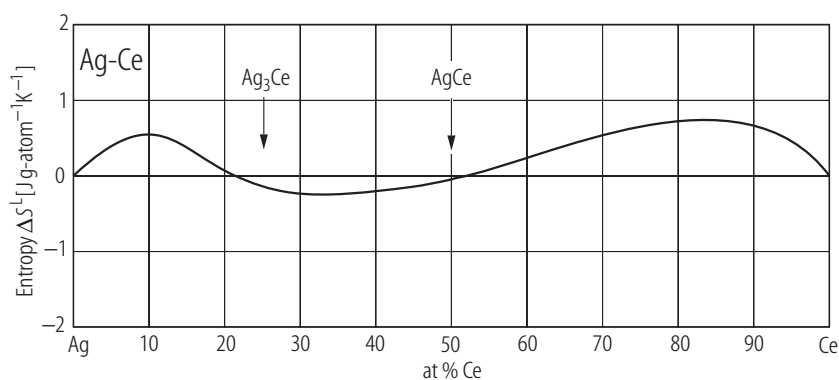
### Figures



**Fig. 1. Ag-Ce.** Calculated phase diagram [02 Yin].



**Fig. 2. Ag-Ce.** Enthalpies of mixing of liquid Al-Ce alloys [02 Yin].



**Fig. 3. Ag-Ce.** Entropies of mixing of liquid Ag-Ce alloys [92 Iva].

### References

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