

## As – Si (Arsenic – Silicon)

### Crystal structure

Structure of two intermediate phases should be mentioned (see Table 1).

**Table 1. As–Si.** Crystallographic data of intermediate phases [Pearson].

Phase	Structure	Prototype	Lattice parameters [nm]			Reference
			<i>a</i>	<i>b</i>	<i>c</i>	
As <sub>2</sub> Si Prepared at 6.5 GPa and 1573 K	cub	FeS <sub>2</sub>	0.60232			[68 Don]
AsSi	mon	GaTe	1.598	0.3668 $\beta = 106.0^\circ$	0.953	[67 Wad]

### Thermodynamics

By direct synthesis drop calorimetry Fitzner et al. [96 Fit] have determined the standard enthalpy of formation of intermediate phases. The values are given in Table 2.

**Table 2. As–Si.** Standard enthalpy of formation at 298 K [96 Fit].

Phase	$\Delta H^S$ [kJ g-atom <sup>-1</sup> ]
AsSi	- 5.4 ± 1.2
As <sub>2</sub> Si	- 3.7 ± 2.3

### References

- [67 Wad] Wadsten, T.: Acta Chem. Scand. **21** (1967) 593  
 [68 Don] Donohue, P.C., Siemons, W.J., Gillson, J.L.: J. Phys. Chem. Solids **29** (1968) 807  
 [96 Fit] Fitzner, K., Kleppa, O.J.: J. Alloys and Comp. **238** (1996) 187  
 [Pearson] Pearson, W.B.: “Handbook of Lattice Spacings and Structure of Metals and Alloys”, Pergamon Press, New York, (1958), Vol. 1, (1967) Vol. 2