



Database name:	TC Semiconductors Database	Database version:	2.1
Database acronym:	SEMC2		
Database owner:	PDG USTB		
Database segment:	Semiconductors		

Brief description

SEMC2 is a database suitable for semiconductor engineering.

Applications

Semiconductors design and engineering, electronic components processing and utility.

Included Elements

Al As C Ga H In P Pb Sb Sn

Included Phases

AL4C3_S	C_S	ORTHORH_CMCA	RHOMBO_A7	Y_GA
ASP	FCC_A1	PB_L	SN_L	ZINCBLLENDE
BCTA6	GAS:G	PB_S	SN_S	
C_L	LIQUID:L	RED	WHITE	

It is compatible with the PURE (SGTE pure elements database), SSUB (SGTE substances database) and SSOL (SGTE solutions database).

Assessed Systems

SEMC2 contains evaluated thermodynamic data for:

15 binary subsystems in Al-As-Ga-In-P-Sb:

Al-As, Al-Ga, Al-In, Al-P, Al-Sb, As-Ga, As-In, As-P, As-Sb, Ga-In, Ga-P, Ga-Sb, In-P, In-Sb and P-Sb.

18 ternary subsystems in Al-As-Ga-In-P-Sb:

Al-Ga-P, Al-In-P, Al-P-As, Al-P-Sb, Al-As-Sb, Al-Ga-As, Al-Ga-Sb, Al-In-As, Al-In-Sb, Ga-In-P, Ga-In-As, Ga-In-Sb, Ga-As-Sb, In-As-Sb, Ga-As-P, In-As-P, Ga-Sb-P and In-Sb-P.

135 gas species in Al-As-Ga-In-P-Pb-Sb-Sn-C-H:

40 (in Al-As-Ga-In-P-Sb).

59 (in Al-As-Ga-In-P-Sb-Pb-Sn-C-H).

36 from the SGTE SSUB database: in C-H-B-P-Al-As.

Limits

As in the spirit of the CALPHAD method, predictions can be made for multicomponent systems by extrapolation into multicomponent space of data critically evaluated and assessed based on binary, ternary and in some cases higher order systems. However, critical calculations must always be verified by equilibrium experimental data; it is the user's responsibility to verify the calculations but Thermo-Calc Software AB is interested to know about any significant deviations in order to improve any future release.

Scientific Models & References

See the Thermo-Calc Software reference list available at: <http://www.thermocalc.com/Library.htm>