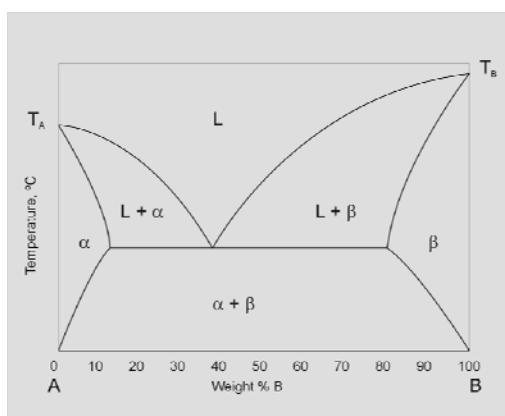
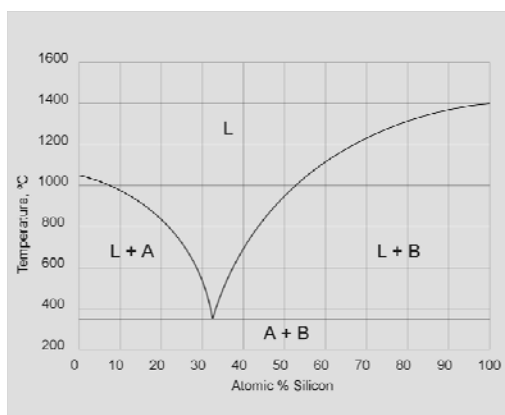
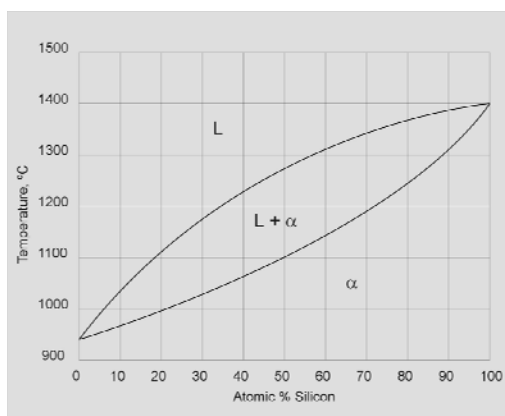
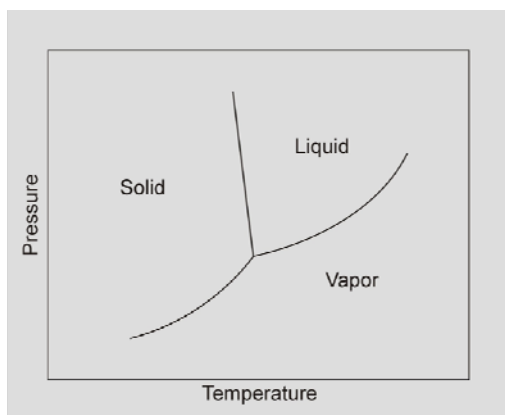
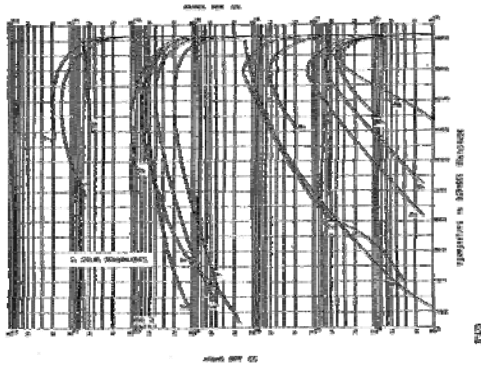
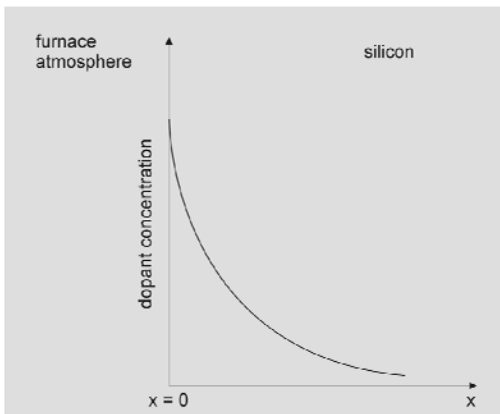


# Diffusion





### Diffusivity Data for Dopants in Silicon

Dopant	P*	As**	Sb**	B*	Al**	Ga**	In*
$D_0$ (cm <sup>2</sup> /s)	10.5	0.058	3.94	10.5	1.77	0.573	16.5
$E_a/k$ (K)	$4.28 \times 10^4$	$3.83 \times 10^4$	$4.49 \times 10^4$	$4.28 \times 10^4$	$3.78 \times 10^4$	$3.77 \times 10^4$	$4.52 \times 10^4$

\*Reference Ghandhi p.71

\*\*Highly dependent on doping level. These are PLATO values.

### Boron and Phosphorus in Silicon

T, °C	B, P	B	P
	D (cm <sup>2</sup> /s)	$N_{s1}$ (cm <sup>-3</sup> )	$N_{s1}$ (cm <sup>-3</sup> )
900	$1.5 \times 10^{-15}$	$3.7 \times 10^{20}$	$6.0 \times 10^{20}$
950	$6.6 \times 10^{-15}$	$3.9 \times 10^{20}$	$7.8 \times 10^{20}$
1000	$2.6 \times 10^{-14}$	$4.1 \times 10^{20}$	$1.0 \times 10^{21}$
1050	$9.3 \times 10^{-14}$	$4.3 \times 10^{20}$	$1.2 \times 10^{21}$
1100	$3.0 \times 10^{-13}$	$4.5 \times 10^{20}$	$1.4 \times 10^{21}$
1150	$9.1 \times 10^{-13}$	$4.8 \times 10^{20}$	$1.5 \times 10^{21}$
1200	$2.5 \times 10^{-12}$	$5.0 \times 10^{20}$	$1.5 \times 10^{21}$
1250	$6.5 \times 10^{-12}$	$5.2 \times 10^{20}$	$1.4 \times 10^{21}$
1300	$1.6 \times 10^{-11}$	$5.4 \times 10^{20}$	$1.1 \times 10^{21}$
1350	$3.7 \times 10^{-11}$	$5.7 \times 10^{20}$	$7.1 \times 10^{20}$

GT13  
COMPLIMENTARY ERROR FUNCTION TABLE

x	erfc x	x	erfc x	x	erfc x	x	erfc x	x	erfc x	x	erfc x
0.01	9.89E-01	0.77	2.76E-01	1.53	3.05E-02	2.29	1.20E-03	3.05	1.61E-05	3.81	7.13E-08
0.02	9.77E-01	0.78	2.70E-01	1.54	2.94E-02	2.30	1.14E-03	3.06	1.52E-05	3.82	6.59E-08
0.03	9.66E-01	0.79	2.64E-01	1.55	2.84E-02	2.31	1.09E-03	3.07	1.42E-05	3.83	6.09E-08
0.04	9.55E-01	0.80	2.58E-01	1.56	2.74E-02	2.32	1.03E-03	3.08	1.33E-05	3.84	5.63E-08
0.05	9.44E-01	0.81	2.52E-01	1.57	2.64E-02	2.33	9.84E-04	3.09	1.24E-05	3.85	5.20E-08
0.06	9.32E-01	0.82	2.46E-01	1.58	2.55E-02	2.34	9.36E-04	3.10	1.17E-05	3.86	4.80E-08
0.07	9.21E-01	0.83	2.40E-01	1.59	2.45E-02	2.35	8.89E-04	3.11	1.09E-05	3.87	4.44E-08
0.08	9.10E-01	0.84	2.35E-01	1.60	2.37E-02	2.36	8.45E-04	3.12	1.02E-05	3.88	4.09E-08
0.09	8.99E-01	0.85	2.29E-01	1.61	2.28E-02	2.37	8.03E-04	3.13	9.59E-06	3.89	3.78E-08
0.10	8.88E-01	0.86	2.24E-01	1.62	2.20E-02	2.38	7.63E-04	3.14	8.98E-06	3.90	3.49E-08
0.11	8.76E-01	0.87	2.19E-01	1.63	2.12E-02	2.39	7.25E-04	3.15	8.41E-06	3.91	3.22E-08
0.12	8.66E-01	0.88	2.13E-01	1.64	2.04E-02	2.40	6.89E-04	3.16	7.87E-06	3.92	2.97E-08
0.13	8.54E-01	0.89	2.08E-01	1.65	1.96E-02	2.41	6.54E-04	3.17	7.36E-06	3.93	2.74E-08
0.14	8.43E-01	0.90	2.03E-01	1.66	1.89E-02	2.42	6.21E-04	3.18	6.89E-06	3.94	2.52E-08
0.15	8.32E-01	0.91	1.98E-01	1.67	1.82E-02	2.43	5.89E-04	3.19	6.45E-06	3.95	2.33E-08
0.16	8.21E-01	0.92	1.93E-01	1.68	1.75E-02	2.44	5.59E-04	3.20	6.03E-06	3.96	2.15E-08
0.17	8.10E-01	0.93	1.88E-01	1.69	1.68E-02	2.45	5.31E-04	3.21	5.64E-06	3.97	1.98E-08
0.18	7.99E-01	0.94	1.84E-01	1.70	1.62E-02	2.46	5.03E-04	3.22	5.27E-06	3.98	1.82E-08

