Appendix D

Self-Diffusion Coefficients

Measured self-diffusion coefficients

$$D = D_0 \exp(-Q/RT)$$

for substitutional and interstitial solutes in binary alloys are summarised in Tables D1 and D2, respectively.

TABLE D1 Self-Diffusion Coefficients in Substitutional Binary Alloys

Solute−Solvent	D_o (cm^2 s^{-1})	Q (kJ mol^{-1})	References
Cr-Ni	1.1	272.6	[1]
Al-Ni	1.0	260	[2]
Si-Al	1.5	254	[3]
Cr-Fe (α)	8.2	250.8	[4]
Cr-Fe (γ)	0.25	263.9	[5]
Al-Fe[a]	0.27	188	[6]

[a]Chemical (interdiffusion) coefficient.

TABLE D2 Self-Diffusion Coefficients for Interstitial Solutes

Solute−Solvent	D_o (cm^2 s^{-1})	Q (kJ mol^{-1})	References
O-Ni	0.049	164	[7]
N-Ni	0.42	135	[8]
C-Ni	0.15	138	[9]
O-Fe(α)	0.037	98	[10]
O-Fe(γ)	5.75	168	[10]
N-Fe(γ)	0.70	166	[11]
C-Fe(γ)	0.33	147	[12]
C-Fe(α)	0.033	87	[13]

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