

Contents

1 Phonon dispersion, frequency spectra, and related properties of metallic elements

H.R. SCHÖBER and P.H. DEDERICHs, Institut für Festkörperforschung der Kernforschungsanlage Jülich GmbH, Jülich, Germany

1.1 Introduction 1

1.1.1 General layout 1

1.1.2 Comments on data of section 1.2 1

1.1.2.1 Phonon dispersion 1

1.1.2.2 Frequency spectra and related properties. 3

1.1.2.2.1 Spectra 3

1.1.2.2.2 Debye cutoff frequencies 3

1.1.2.2.3 Specific heat; Debye temperature 4

1.1.2.2.4 Debye-Waller factor 4

1.1.2.3 Theoretical models (comments and references only) 5

1.1.3 List of frequently used symbols and abbreviations 5

1.2 Data 7

Ag 7	Gd 60	Ru 129
Al 11	Hf 61	Sb 131
As 17	Hg 63	Sc 132
Au 18	Ho 64	Sn 135
Ba 22	In 67	Sr 141
Be 23	K 68	Ta 141
Bi 25	La 76	Tb 144
Ca 29	Li 76	Tc 147
Cd 30	Mg 82	Th 148
Ce 34	Mo 86	Ti 151
Co 37	Na 92	Tl 154
Cr 39	Nb 96	Tm 157
Cs 40	Ni 104	U 158
Cu 44	Pb 108	V 160
Dy 52	Pd 112	W 164
Er 52	Pt 117	Y 167
Fe 53	Rb 122	Zn 169
Ga 57	Re 128	Zr 175

1.3 References for 1.1 and 1.2 180

2 Band structures and Fermi surfaces of metallic compounds and disordered alloys

D.J. SELLMYER, Behlen Laboratory of Physics, University of Nebraska, Lincoln, Nebraska, U.S.A.

2.1 Introduction 192

2.1.1 Preliminary remarks and organization 192

2.1.2 Theoretical and experimental methods 192

2.1.3 List of frequently used symbols and abbreviations 194

2.1.4 General references (handbooks and reviews) 196

2.2 Metallic compounds 196

2.2.1 sp-metallic compounds 197

2.2.1.1 Survey 197

2.2.1.2 Data 198

2.2.2	Transition metal compounds	222
2.2.2.1	Survey	222
2.2.2.2	Data	225
2.2.3	Quasi one- and two-dimensional compounds	300
2.2.3.1	Survey	300
2.2.3.2	Data	302
2.2.4	Rare-earth, oxide, and other compounds	332
2.2.4.1	Survey	332
2.2.4.2	Data	334
2.2.5	References for 2.2	377
2.3	Disordered alloys	386
2.3.1	sp-metallic alloys	386
2.3.1.1	Survey	386
2.3.1.2	Data	388
2.3.2	Noble metal alloys	398
2.3.2.1	Survey	398
2.3.2.2	Data	399
2.3.3	Transition-metal alloys	414
2.3.3.1	Survey	414
2.3.3.2	Data	415
2.3.4	Intermediate phases, hydrides, and amorphous alloys	431
2.3.4.1	Survey	431
2.3.4.2	Data	431
2.3.5	References for 2.3	441

Appendix
Bravais lattices (conventional unit cells), primitive unit cells, reciprocal lattices
and first Brillouin zones

1	Body centred cubic metals	447
2	Face centred cubic metals	448
3	Hexagonal close packed metals	449
4	Body centred tetragonal metals	450
5	Face centred tetragonal (nearly fcc) metals	452
6	Rhombohedral metals	453
7	Rhombohedral (triatomic hexagonal) metals	454
8	Base centred orthorhombic metals	455
9	Simple cubic and simple tetragonal alloys	457
	References	458

