

# Content

## IV/19 Thermodynamic Properties of Inorganic Materials

### Subvolume B Binary Systems

Phase Diagrams, Phase Transition Data,  
Integral and Partial Quantities of Alloys

#### Part 1 Elements and Binary Systems from Ag-Al to Au-Tl

|                                                          |            |
|----------------------------------------------------------|------------|
| <b>Introduction</b>                                      | <b>XIV</b> |
| Assessment and selection procedures . . . . .            | XIV        |
| Thermodynamic Modelling . . . . .                        | XVI        |
| Description of the Tables and Diagrams . . . . .         | XX         |
| Description of the Software . . . . .                    | XXII       |
| References . . . . .                                     | XXVI       |
| <b>SGTE Data for Pure Elements</b>                       | <b>1</b>   |
| Stable and Metastable Phase Data . . . . .               | 1          |
| Standard Element Reference . . . . .                     | 2          |
| References . . . . .                                     | 2          |
| SGTE Pure Element Transition Data . . . . .              | 3          |
| Diagrams of Gibbs Energies and Heat Capacities . . . . . | 6          |
| <b>Binary Systems</b>                                    | <b>32</b>  |
| Ag – Al . . . . .                                        | 33         |
| Ag – Au . . . . .                                        | 38         |
| Ag – Bi . . . . .                                        | 42         |
| Ag – Ge . . . . .                                        | 45         |
| Ag – In . . . . .                                        | 49         |
| Ag – Ir . . . . .                                        | 53         |
| Ag – Mg . . . . .                                        | 56         |
| Ag – Os . . . . .                                        | 61         |
| Ag – Pb . . . . .                                        | 64         |
| Ag – Pd . . . . .                                        | 67         |
| Ag – Pt . . . . .                                        | 71         |
| Ag – Rh . . . . .                                        | 75         |
| Ag – Ru . . . . .                                        | 78         |
| Ag – Sb . . . . .                                        | 81         |
| Ag – Si . . . . .                                        | 84         |
| Ag – Sn . . . . .                                        | 88         |
| Ag – Ti . . . . .                                        | 92         |
| Ag – Tl . . . . .                                        | 95         |
| Ag – Zn . . . . .                                        | 98         |
| Ag – Zr . . . . .                                        | 103        |
| Al – As . . . . .                                        | 106        |
| Al – Au . . . . .                                        | 109        |
| Al – B . . . . .                                         | 112        |
| Al – Bi . . . . .                                        | 116        |
| Al – C . . . . .                                         | 119        |
| Al – Ca . . . . .                                        | 122        |

|                   |     |
|-------------------|-----|
| Al – Ce . . . . . | 125 |
| Al – Co . . . . . | 129 |
| Al – Cr . . . . . | 134 |
| Al – Cu . . . . . | 139 |
| Al – Fe . . . . . | 143 |
| Al – Ga . . . . . | 148 |
| Al – Ge . . . . . | 151 |
| Al – In . . . . . | 154 |
| Al – Li . . . . . | 157 |
| Al – Mg . . . . . | 160 |
| Al – Mn . . . . . | 164 |
| Al – Mo . . . . . | 170 |
| Al – N . . . . .  | 173 |
| Al – Nb . . . . . | 175 |
| Al – Nd . . . . . | 178 |
| Al – Ni . . . . . | 182 |
| Al – O . . . . .  | 188 |
| Al – P . . . . .  | 190 |
| Al – Pb . . . . . | 192 |
| Al – Sb . . . . . | 195 |
| Al – Si . . . . . | 198 |
| Al – Ta . . . . . | 201 |
| Al – Ti . . . . . | 205 |
| Al – V . . . . .  | 210 |
| Al – W . . . . .  | 214 |
| Al – Y . . . . .  | 217 |
| Al – Zn . . . . . | 221 |
| Al – Zr . . . . . | 225 |
| As – Au . . . . . | 229 |
| As – Cu . . . . . | 232 |
| As – Fe . . . . . | 235 |
| As – Ga . . . . . | 238 |
| As – Ge . . . . . | 242 |
| As – In . . . . . | 246 |
| As – P . . . . .  | 250 |
| As – Sb . . . . . | 254 |
| Au – Bi . . . . . | 259 |
| Au – C . . . . .  | 262 |
| Au – Cr . . . . . | 264 |
| Au – Cu . . . . . | 268 |
| Au – Ge . . . . . | 273 |
| Au – In . . . . . | 276 |
| Au – Pb . . . . . | 280 |
| Au – Pd . . . . . | 283 |
| Au – Rh . . . . . | 287 |
| Au – Ru . . . . . | 290 |
| Au – Sb . . . . . | 293 |
| Au – Si . . . . . | 296 |
| Au – Te . . . . . | 299 |
| Au – Tl . . . . . | 302 |