

# MSG No. 227.133 $F_S d\bar{3}m$ [ Type IV, cubic ]

Table 1: Wyckoff site: 16a, site symmetry:  $\bar{4}3m$

| No. | position                                  | mapping  |
|-----|---|--|
| 1   | $[\frac{5}{8}, \frac{5}{8}, \frac{5}{8}]$ | [1, 8, 9, 10, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 35, 36, 37, 38, 39, 40]                            |
| 2   | $[\frac{7}{8}, \frac{3}{8}, \frac{7}{8}]$ | [2, 7, 15, 33, 43, 48, 51, 52, 59, 82, 92, 93, 108, 110, 112, 121, 137, 138, 149, 150, 157, 176, 190, 191]               |
| 3   | $[\frac{7}{8}, \frac{7}{8}, \frac{3}{8}]$ | [3, 4, 11, 34, 44, 45, 50, 55, 63, 81, 91, 96, 101, 102, 109, 128, 142, 143, 156, 158, 160, 169, 185, 186]               |
| 4   | $[\frac{3}{8}, \frac{7}{8}, \frac{7}{8}]$ | [5, 6, 13, 32, 46, 47, 60, 62, 64, 73, 89, 90, 99, 100, 107, 130, 140, 141, 146, 151, 159, 177, 187, 192]                |
| 5   | $[\frac{3}{8}, \frac{3}{8}, \frac{3}{8}]$ | [12, 14, 16, 25, 41, 42, 53, 54, 61, 80, 94, 95, 98, 103, 111, 129, 139, 144, 147, 148, 155, 178, 188, 189]              |
| 6   | $[\frac{5}{8}, \frac{1}{8}, \frac{1}{8}]$ | [49, 56, 57, 58, 65, 66, 67, 68, 69, 70, 71, 72, 74, 75, 76, 77, 78, 79, 83, 84, 85, 86, 87, 88]                         |
| 7   | $[\frac{1}{8}, \frac{5}{8}, \frac{1}{8}]$ | [97, 104, 105, 106, 113, 114, 115, 116, 117, 118, 119, 120, 122, 123, 124, 125, 126, 127, 131, 132, 133, 134, 135, 136]  |
| 8   | $[\frac{1}{8}, \frac{1}{8}, \frac{5}{8}]$ | [145, 152, 153, 154, 161, 162, 163, 164, 165, 166, 167, 168, 170, 171, 172, 173, 174, 175, 179, 180, 181, 182, 183, 184] |
| 9   | $[\frac{5}{8}, \frac{5}{8}, \frac{1}{8}]$ | [193, 200, 201, 202, 209, 210, 211, 212, 213, 214, 215, 216, 218, 219, 220, 221, 222, 223, 227, 228, 229, 230, 231, 232] |
| 10  | $[\frac{7}{8}, \frac{3}{8}, \frac{3}{8}]$ | [194, 199, 207, 225, 235, 240, 243, 244, 251, 274, 284, 285, 300, 302, 304, 313, 329, 330, 341, 342, 349, 368, 382, 383] |
| 11  | $[\frac{7}{8}, \frac{7}{8}, \frac{7}{8}]$ | [195, 196, 203, 226, 236, 237, 242, 247, 255, 273, 283, 288, 293, 294, 301, 320, 334, 335, 348, 350, 352, 361, 377, 378] |
| 12  | $[\frac{3}{8}, \frac{7}{8}, \frac{3}{8}]$ | [197, 198, 205, 224, 238, 239, 252, 254, 256, 265, 281, 282, 291, 292, 299, 322, 332, 333, 338, 343, 351, 369, 379, 384] |
| 13  | $[\frac{3}{8}, \frac{3}{8}, \frac{7}{8}]$ | [204, 206, 208, 217, 233, 234, 245, 246, 253, 272, 286, 287, 290, 295, 303, 321, 331, 336, 339, 340, 347, 370, 380, 381] |
| 14  | $[\frac{5}{8}, \frac{1}{8}, \frac{5}{8}]$ | [241, 248, 249, 250, 257, 258, 259, 260, 261, 262, 263, 264, 266, 267, 268, 269, 270, 271, 275, 276, 277, 278, 279, 280] |
| 15  | $[\frac{1}{8}, \frac{5}{8}, \frac{5}{8}]$ | [289, 296, 297, 298, 305, 306, 307, 308, 309, 310, 311, 312, 314, 315, 316, 317, 318, 319, 323, 324, 325, 326, 327, 328] |
| 16  | $[\frac{1}{8}, \frac{1}{8}, \frac{1}{8}]$ | [337, 344, 345, 346, 353, 354, 355, 356, 357, 358, 359, 360, 362, 363, 364, 365, 366, 367, 371, 372, 373, 374, 375, 376] |

Table 2: Wyckoff site: 32b, site symmetry:  $\bar{4}3m$

| No. | position                                  | mapping  |
|-----|---|--|
| 1   | $[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$ | [1, 12, 14, 16, 17, 18, 25, 36, 38, 40, 41, 42]              |
| 2   | $[\frac{3}{4}, \frac{1}{2}, \frac{3}{4}]$ | [2, 7, 9, 15, 19, 24, 26, 31, 33, 39, 43, 48]                |
| 3   | $[\frac{3}{4}, \frac{3}{4}, \frac{1}{2}]$ | [3, 4, 10, 11, 20, 21, 27, 28, 34, 35, 44, 45]               |
| 4   | $[\frac{1}{2}, \frac{3}{4}, \frac{3}{4}]$ | [5, 6, 8, 13, 22, 23, 29, 30, 32, 37, 46, 47]                |
| 5   | $[\frac{1}{2}, 0, 0]$                     | [49, 60, 62, 64, 65, 66, 73, 84, 86, 88, 89, 90]             |
| 6   | $[\frac{3}{4}, 0, \frac{1}{4}]$           | [50, 55, 57, 63, 67, 72, 74, 79, 81, 87, 91, 96]             |
| 7   | $[\frac{3}{4}, \frac{1}{4}, 0]$           | [51, 52, 58, 59, 68, 69, 75, 76, 82, 83, 92, 93]             |
| 8   | $[\frac{1}{2}, \frac{1}{4}, \frac{1}{4}]$ | [53, 54, 56, 61, 70, 71, 77, 78, 80, 85, 94, 95]             |
| 9   | $[0, \frac{1}{2}, 0]$                     | [97, 108, 110, 112, 113, 114, 121, 132, 134, 136, 137, 138]  |
| 10  | $[\frac{1}{4}, \frac{1}{2}, \frac{1}{4}]$ | [98, 103, 105, 111, 115, 120, 122, 127, 129, 135, 139, 144]  |
| 11  | $[\frac{1}{4}, \frac{3}{4}, 0]$           | [99, 100, 106, 107, 116, 117, 123, 124, 130, 131, 140, 141]  |
| 12  | $[0, \frac{3}{4}, \frac{1}{4}]$           | [101, 102, 104, 109, 118, 119, 125, 126, 128, 133, 142, 143] |
| 13  | $[0, 0, \frac{1}{2}]$                     | [145, 156, 158, 160, 161, 162, 169, 180, 182, 184, 185, 186] |
| 14  | $[\frac{1}{4}, 0, \frac{3}{4}]$           | [146, 151, 153, 159, 163, 168, 170, 175, 177, 183, 187, 192] |
| 15  | $[\frac{1}{4}, \frac{1}{4}, \frac{1}{2}]$ | [147, 148, 154, 155, 164, 165, 171, 172, 178, 179, 188, 189] |
| 16  | $[0, \frac{1}{4}, \frac{3}{4}]$           | [149, 150, 152, 157, 166, 167, 173, 174, 176, 181, 190, 191] |
| 17  | $[\frac{1}{2}, \frac{1}{2}, 0]$           | [193, 204, 206, 208, 209, 210, 217, 228, 230, 232, 233, 234] |
| 18  | $[\frac{3}{4}, \frac{1}{2}, \frac{1}{4}]$ | [194, 199, 201, 207, 211, 216, 218, 223, 225, 231, 235, 240] |
| 19  | $[\frac{3}{4}, \frac{3}{4}, 0]$           | [195, 196, 202, 203, 212, 213, 219, 220, 226, 227, 236, 237] |
| 20  | $[\frac{1}{2}, \frac{3}{4}, \frac{1}{4}]$ | [197, 198, 200, 205, 214, 215, 221, 222, 224, 229, 238, 239] |
| 21  | $[\frac{1}{2}, 0, \frac{1}{2}]$           | [241, 252, 254, 256, 257, 258, 265, 276, 278, 280, 281, 282] |

continued ...

Table 2

| No. | position                                  | mapping  |
|-----|---|--|
| 22  | $[\frac{3}{4}, 0, \frac{3}{4}]$           | [242, 247, 249, 255, 259, 264, 266, 271, 273, 279, 283, 288] |
| 23  | $[\frac{3}{4}, \frac{1}{4}, \frac{1}{2}]$ | [243, 244, 250, 251, 260, 261, 267, 268, 274, 275, 284, 285] |
| 24  | $[\frac{1}{2}, \frac{1}{4}, \frac{3}{4}]$ | [245, 246, 248, 253, 262, 263, 269, 270, 272, 277, 286, 287] |
| 25  | $[0, \frac{1}{2}, \frac{1}{2}]$           | [289, 300, 302, 304, 305, 306, 313, 324, 326, 328, 329, 330] |
| 26  | $[\frac{1}{4}, \frac{1}{2}, \frac{3}{4}]$ | [290, 295, 297, 303, 307, 312, 314, 319, 321, 327, 331, 336] |
| 27  | $[\frac{1}{4}, \frac{3}{4}, \frac{1}{2}]$ | [291, 292, 298, 299, 308, 309, 315, 316, 322, 323, 332, 333] |
| 28  | $[0, \frac{3}{4}, \frac{3}{4}]$           | [293, 294, 296, 301, 310, 311, 317, 318, 320, 325, 334, 335] |
| 29  | $[0, 0, 0]$                               | [337, 348, 350, 352, 353, 354, 361, 372, 374, 376, 377, 378] |
| 30  | $[\frac{1}{4}, 0, \frac{1}{4}]$           | [338, 343, 345, 351, 355, 360, 362, 367, 369, 375, 379, 384] |
| 31  | $[\frac{1}{4}, \frac{1}{4}, 0]$           | [339, 340, 346, 347, 356, 357, 363, 364, 370, 371, 380, 381] |
| 32  | $[0, \frac{1}{4}, \frac{1}{4}]$           | [341, 342, 344, 349, 358, 359, 365, 366, 368, 373, 382, 383] |

Table 3: Wyckoff site: 32c, site symmetry:  $.-3'm$ 

| No. | position                                  | mapping  |
|-----|---|--|
| 1   | $[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$ | [1, 17, 18, 36, 38, 40, 348, 350, 352, 361, 377, 378]        |
| 2   | $[0, \frac{1}{4}, 0]$                     | [2, 7, 15, 33, 43, 48, 345, 355, 360, 362, 367, 375]         |
| 3   | $[0, 0, \frac{1}{4}]$                     | [3, 4, 11, 34, 44, 45, 346, 356, 357, 363, 364, 371]         |
| 4   | $[\frac{1}{4}, 0, 0]$                     | [5, 6, 13, 32, 46, 47, 344, 358, 359, 365, 366, 373]         |
| 5   | $[\frac{3}{4}, \frac{1}{2}, \frac{1}{2}]$ | [8, 22, 23, 29, 30, 37, 341, 342, 349, 368, 382, 383]        |
| 6   | $[\frac{1}{2}, \frac{3}{4}, \frac{1}{2}]$ | [9, 19, 24, 26, 31, 39, 338, 343, 351, 369, 379, 384]        |
| 7   | $[\frac{1}{2}, \frac{1}{2}, \frac{3}{4}]$ | [10, 20, 21, 27, 28, 35, 339, 340, 347, 370, 380, 381]       |
| 8   | $[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$ | [12, 14, 16, 25, 41, 42, 337, 353, 354, 372, 374, 376]       |
| 9   | $[\frac{3}{4}, \frac{1}{4}, \frac{1}{4}]$ | [49, 65, 66, 84, 86, 88, 300, 302, 304, 313, 329, 330]       |
| 10  | $[0, \frac{3}{4}, \frac{1}{2}]$           | [50, 55, 63, 81, 91, 96, 297, 307, 312, 314, 319, 327]       |
| 11  | $[0, \frac{1}{2}, \frac{3}{4}]$           | [51, 52, 59, 82, 92, 93, 298, 308, 309, 315, 316, 323]       |
| 12  | $[\frac{1}{4}, \frac{1}{2}, \frac{1}{2}]$ | [53, 54, 61, 80, 94, 95, 296, 310, 311, 317, 318, 325]       |
| 13  | $[\frac{3}{4}, 0, 0]$                     | [56, 70, 71, 77, 78, 85, 293, 294, 301, 320, 334, 335]       |
| 14  | $[\frac{1}{2}, \frac{1}{4}, 0]$           | [57, 67, 72, 74, 79, 87, 290, 295, 303, 321, 331, 336]       |
| 15  | $[\frac{1}{2}, 0, \frac{1}{4}]$           | [58, 68, 69, 75, 76, 83, 291, 292, 299, 322, 332, 333]       |
| 16  | $[\frac{1}{4}, \frac{3}{4}, \frac{3}{4}]$ | [60, 62, 64, 73, 89, 90, 289, 305, 306, 324, 326, 328]       |
| 17  | $[\frac{1}{4}, \frac{3}{4}, \frac{1}{4}]$ | [97, 113, 114, 132, 134, 136, 252, 254, 256, 265, 281, 282]  |
| 18  | $[\frac{1}{2}, \frac{1}{4}, \frac{1}{2}]$ | [98, 103, 111, 129, 139, 144, 249, 259, 264, 266, 271, 279]  |
| 19  | $[\frac{1}{2}, 0, \frac{3}{4}]$           | [99, 100, 107, 130, 140, 141, 250, 260, 261, 267, 268, 275]  |
| 20  | $[\frac{3}{4}, 0, \frac{1}{2}]$           | [101, 102, 109, 128, 142, 143, 248, 262, 263, 269, 270, 277] |
| 21  | $[\frac{1}{4}, \frac{1}{2}, 0]$           | [104, 118, 119, 125, 126, 133, 245, 246, 253, 272, 286, 287] |
| 22  | $[0, \frac{3}{4}, 0]$                     | [105, 115, 120, 122, 127, 135, 242, 247, 255, 273, 283, 288] |
| 23  | $[0, \frac{1}{2}, \frac{1}{4}]$           | [106, 116, 117, 123, 124, 131, 243, 244, 251, 274, 284, 285] |
| 24  | $[\frac{3}{4}, \frac{1}{4}, \frac{3}{4}]$ | [108, 110, 112, 121, 137, 138, 241, 257, 258, 276, 278, 280] |
| 25  | $[\frac{1}{4}, \frac{1}{4}, \frac{3}{4}]$ | [145, 161, 162, 180, 182, 184, 204, 206, 208, 217, 233, 234] |
| 26  | $[\frac{1}{2}, \frac{3}{4}, 0]$           | [146, 151, 159, 177, 187, 192, 201, 211, 216, 218, 223, 231] |
| 27  | $[\frac{1}{2}, \frac{1}{2}, \frac{1}{4}]$ | [147, 148, 155, 178, 188, 189, 202, 212, 213, 219, 220, 227] |
| 28  | $[\frac{3}{4}, \frac{1}{2}, 0]$           | [149, 150, 157, 176, 190, 191, 200, 214, 215, 221, 222, 229] |
| 29  | $[\frac{1}{4}, 0, \frac{1}{2}]$           | [152, 166, 167, 173, 174, 181, 197, 198, 205, 224, 238, 239] |

continued ...

Table 3

| No. | position                                  | mapping  |
|-----|---|--|
| 30  | $[0, \frac{1}{4}, \frac{1}{2}]$           | [153, 163, 168, 170, 175, 183, 194, 199, 207, 225, 235, 240] |
| 31  | $[0, 0, \frac{3}{4}]$                     | [154, 164, 165, 171, 172, 179, 195, 196, 203, 226, 236, 237] |
| 32  | $[\frac{3}{4}, \frac{3}{4}, \frac{1}{4}]$ | [156, 158, 160, 169, 185, 186, 193, 209, 210, 228, 230, 232] |

Table 4: Wyckoff site: 48d, site symmetry:  $-4'2'.m$ 

| No. | position                                  | mapping                                  |
|-----|---|--|
| 1   | $[\frac{5}{8}, \frac{7}{8}, \frac{7}{8}]$ | [1, 38, 56, 85, 201, 218, 250, 267]      |
| 2   | $[\frac{7}{8}, \frac{1}{8}, \frac{1}{8}]$ | [2, 3, 33, 34, 301, 302, 313, 320]       |
| 3   | $[\frac{1}{8}, \frac{1}{8}, \frac{3}{8}]$ | [4, 16, 42, 45, 197, 207, 235, 239]      |
| 4   | $[\frac{1}{8}, \frac{1}{8}, \frac{7}{8}]$ | [5, 15, 43, 47, 196, 208, 234, 237]      |
| 5   | $[\frac{1}{8}, \frac{7}{8}, \frac{1}{8}]$ | [6, 11, 44, 46, 247, 252, 281, 288]      |
| 6   | $[\frac{1}{8}, \frac{3}{8}, \frac{1}{8}]$ | [7, 12, 41, 48, 246, 251, 284, 286]      |
| 7   | $[\frac{5}{8}, \frac{3}{8}, \frac{3}{8}]$ | [8, 37, 49, 86, 202, 219, 249, 266]      |
| 8   | $[\frac{5}{8}, \frac{7}{8}, \frac{3}{8}]$ | [9, 26, 58, 75, 193, 230, 248, 277]      |
| 9   | $[\frac{5}{8}, \frac{3}{8}, \frac{7}{8}]$ | [10, 27, 57, 74, 200, 229, 241, 278]     |
| 10  | $[\frac{3}{8}, \frac{1}{8}, \frac{1}{8}]$ | [13, 14, 25, 32, 290, 291, 321, 322]     |
| 11  | $[\frac{7}{8}, \frac{5}{8}, \frac{7}{8}]$ | [17, 36, 120, 127, 214, 222, 308, 323]   |
| 12  | $[\frac{7}{8}, \frac{7}{8}, \frac{5}{8}]$ | [18, 40, 165, 172, 263, 269, 307, 327]   |
| 13  | $[\frac{3}{8}, \frac{7}{8}, \frac{5}{8}]$ | [19, 39, 167, 173, 261, 268, 306, 328]   |
| 14  | $[\frac{3}{8}, \frac{5}{8}, \frac{7}{8}]$ | [20, 35, 118, 126, 216, 223, 305, 324]   |
| 15  | $[\frac{3}{8}, \frac{3}{8}, \frac{5}{8}]$ | [21, 28, 162, 184, 259, 279, 311, 317]   |
| 16  | $[\frac{7}{8}, \frac{5}{8}, \frac{3}{8}]$ | [22, 30, 116, 131, 209, 228, 312, 319]   |
| 17  | $[\frac{7}{8}, \frac{3}{8}, \frac{5}{8}]$ | [23, 29, 163, 183, 258, 280, 309, 316]   |
| 18  | $[\frac{3}{8}, \frac{5}{8}, \frac{3}{8}]$ | [24, 31, 113, 132, 212, 227, 310, 318]   |
| 19  | $[\frac{7}{8}, \frac{5}{8}, \frac{5}{8}]$ | [50, 51, 81, 82, 349, 350, 361, 368]     |
| 20  | $[\frac{1}{8}, \frac{5}{8}, \frac{7}{8}]$ | [52, 64, 90, 93, 245, 255, 283, 287]     |
| 21  | $[\frac{1}{8}, \frac{5}{8}, \frac{3}{8}]$ | [53, 63, 91, 95, 244, 256, 282, 285]     |
| 22  | $[\frac{1}{8}, \frac{3}{8}, \frac{5}{8}]$ | [54, 59, 92, 94, 199, 204, 233, 240]     |
| 23  | $[\frac{1}{8}, \frac{7}{8}, \frac{5}{8}]$ | [55, 60, 89, 96, 198, 203, 236, 238]     |
| 24  | $[\frac{3}{8}, \frac{5}{8}, \frac{5}{8}]$ | [61, 62, 73, 80, 338, 339, 369, 370]     |
| 25  | $[\frac{7}{8}, \frac{1}{8}, \frac{3}{8}]$ | [65, 84, 168, 175, 262, 270, 356, 371]   |
| 26  | $[\frac{7}{8}, \frac{3}{8}, \frac{1}{8}]$ | [66, 88, 117, 124, 215, 221, 355, 375]   |
| 27  | $[\frac{3}{8}, \frac{3}{8}, \frac{1}{8}]$ | [67, 87, 119, 125, 213, 220, 354, 376]   |
| 28  | $[\frac{3}{8}, \frac{1}{8}, \frac{3}{8}]$ | [68, 83, 166, 174, 264, 271, 353, 372]   |
| 29  | $[\frac{3}{8}, \frac{7}{8}, \frac{1}{8}]$ | [69, 76, 114, 136, 211, 231, 359, 365]   |
| 30  | $[\frac{7}{8}, \frac{1}{8}, \frac{7}{8}]$ | [70, 78, 164, 179, 257, 276, 360, 367]   |
| 31  | $[\frac{7}{8}, \frac{7}{8}, \frac{1}{8}]$ | [71, 77, 115, 135, 210, 232, 357, 364]   |
| 32  | $[\frac{3}{8}, \frac{1}{8}, \frac{7}{8}]$ | [72, 79, 161, 180, 260, 275, 358, 366]   |
| 33  | $[\frac{1}{8}, \frac{7}{8}, \frac{3}{8}]$ | [97, 134, 152, 181, 297, 314, 346, 363]  |
| 34  | $[\frac{3}{8}, \frac{1}{8}, \frac{5}{8}]$ | [98, 99, 129, 130, 205, 206, 217, 224]   |
| 35  | $[\frac{5}{8}, \frac{1}{8}, \frac{7}{8}]$ | [100, 112, 138, 141, 293, 303, 331, 335] |
| 36  | $[\frac{5}{8}, \frac{1}{8}, \frac{3}{8}]$ | [101, 111, 139, 143, 292, 304, 330, 333] |
| 37  | $[\frac{5}{8}, \frac{7}{8}, \frac{5}{8}]$ | [102, 107, 140, 142, 343, 348, 377, 384] |

*continued ...*

Table 4

| No. | position                                  | mapping                                  |
|-----|---|--|
| 38  | $[\frac{5}{8}, \frac{3}{8}, \frac{5}{8}]$ | [103, 108, 137, 144, 342, 347, 380, 382] |
| 39  | $[\frac{1}{8}, \frac{3}{8}, \frac{7}{8}]$ | [104, 133, 145, 182, 298, 315, 345, 362] |
| 40  | $[\frac{1}{8}, \frac{7}{8}, \frac{7}{8}]$ | [105, 122, 154, 171, 289, 326, 344, 373] |
| 41  | $[\frac{1}{8}, \frac{3}{8}, \frac{3}{8}]$ | [106, 123, 153, 170, 296, 325, 337, 374] |
| 42  | $[\frac{7}{8}, \frac{1}{8}, \frac{5}{8}]$ | [109, 110, 121, 128, 194, 195, 225, 226] |
| 43  | $[\frac{3}{8}, \frac{5}{8}, \frac{1}{8}]$ | [146, 147, 177, 178, 253, 254, 265, 272] |
| 44  | $[\frac{5}{8}, \frac{5}{8}, \frac{3}{8}]$ | [148, 160, 186, 189, 341, 351, 379, 383] |
| 45  | $[\frac{5}{8}, \frac{5}{8}, \frac{7}{8}]$ | [149, 159, 187, 191, 340, 352, 378, 381] |
| 46  | $[\frac{5}{8}, \frac{3}{8}, \frac{1}{8}]$ | [150, 155, 188, 190, 295, 300, 329, 336] |
| 47  | $[\frac{5}{8}, \frac{7}{8}, \frac{1}{8}]$ | [151, 156, 185, 192, 294, 299, 332, 334] |
| 48  | $[\frac{7}{8}, \frac{5}{8}, \frac{1}{8}]$ | [157, 158, 169, 176, 242, 243, 273, 274] |

Table 5: Wyckoff site: 64e, site symmetry:  $\bar{3}m$ 

| No. | position  | mapping                        |
|-----|---|--------------------------------|
| 1   | $[x, x, x]$   | [1, 17, 18, 36, 38, 40]        |
| 2   | $[x + \frac{1}{4}, -x, x + \frac{1}{4}]$              | [2, 7, 15, 33, 43, 48]         |
| 3   | $[x + \frac{1}{4}, x + \frac{1}{4}, -x]$              | [3, 4, 11, 34, 44, 45]         |
| 4   | $[-x, x + \frac{1}{4}, x + \frac{1}{4}]$              | [5, 6, 13, 32, 46, 47]         |
| 5   | $[x, \frac{1}{4} - x, \frac{1}{4} - x]$               | [8, 22, 23, 29, 30, 37]        |
| 6   | $[\frac{1}{4} - x, x, \frac{1}{4} - x]$               | [9, 19, 24, 26, 31, 39]        |
| 7   | $[\frac{1}{4} - x, \frac{1}{4} - x, x]$               | [10, 20, 21, 27, 28, 35]       |
| 8   | $[-x, -x, -x]$  | [12, 14, 16, 25, 41, 42]       |
| 9   | $[x, x + \frac{1}{2}, x + \frac{1}{2}]$               | [49, 65, 66, 84, 86, 88]       |
| 10  | $[x + \frac{1}{4}, \frac{1}{2} - x, x + \frac{3}{4}]$ | [50, 55, 63, 81, 91, 96]       |
| 11  | $[x + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - x]$ | [51, 52, 59, 82, 92, 93]       |
| 12  | $[-x, x + \frac{3}{4}, x + \frac{3}{4}]$              | [53, 54, 61, 80, 94, 95]       |
| 13  | $[x, \frac{3}{4} - x, \frac{3}{4} - x]$               | [56, 70, 71, 77, 78, 85]       |
| 14  | $[\frac{1}{4} - x, x + \frac{1}{2}, \frac{3}{4} - x]$ | [57, 67, 72, 74, 79, 87]       |
| 15  | $[\frac{1}{4} - x, \frac{3}{4} - x, x + \frac{1}{2}]$ | [58, 68, 69, 75, 76, 83]       |
| 16  | $[-x, \frac{1}{2} - x, \frac{1}{2} - x]$              | [60, 62, 64, 73, 89, 90]       |
| 17  | $[x + \frac{1}{2}, x, x + \frac{1}{2}]$               | [97, 113, 114, 132, 134, 136]  |
| 18  | $[x + \frac{3}{4}, -x, x + \frac{3}{4}]$              | [98, 103, 111, 129, 139, 144]  |
| 19  | $[x + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - x]$ | [99, 100, 107, 130, 140, 141]  |
| 20  | $[\frac{1}{2} - x, x + \frac{1}{4}, x + \frac{3}{4}]$ | [101, 102, 109, 128, 142, 143] |
| 21  | $[x + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - x]$ | [104, 118, 119, 125, 126, 133] |
| 22  | $[\frac{3}{4} - x, x, \frac{3}{4} - x]$               | [105, 115, 120, 122, 127, 135] |
| 23  | $[\frac{3}{4} - x, \frac{1}{4} - x, x + \frac{1}{2}]$ | [106, 116, 117, 123, 124, 131] |
| 24  | $[\frac{1}{2} - x, -x, \frac{1}{2} - x]$              | [108, 110, 112, 121, 137, 138] |
| 25  | $[x + \frac{1}{2}, x + \frac{1}{2}, x]$               | [145, 161, 162, 180, 182, 184] |
| 26  | $[x + \frac{3}{4}, \frac{1}{2} - x, x + \frac{1}{4}]$ | [146, 151, 159, 177, 187, 192] |
| 27  | $[x + \frac{3}{4}, x + \frac{3}{4}, -x]$              | [147, 148, 155, 178, 188, 189] |
| 28  | $[\frac{1}{2} - x, x + \frac{3}{4}, x + \frac{1}{4}]$ | [149, 150, 157, 176, 190, 191] |
| 29  | $[x + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - x]$ | [152, 166, 167, 173, 174, 181] |

continued ...

Table 5

| No. | position  | mapping                        |
|-----|---|--------------------------------|
| 30  | $[\frac{3}{4} - x, x + \frac{1}{2}, \frac{1}{4} - x]$ | [153, 163, 168, 170, 175, 183] |
| 31  | $[\frac{3}{4} - x, \frac{3}{4} - x, x]$               | [154, 164, 165, 171, 172, 179] |
| 32  | $[\frac{1}{2} - x, \frac{1}{2} - x, -x]$              | [156, 158, 160, 169, 185, 186] |
| 33  | $[x, x, x + \frac{1}{2}]$                             | [193, 209, 210, 228, 230, 232] |
| 34  | $[x + \frac{1}{4}, -x, x + \frac{3}{4}]$              | [194, 199, 207, 225, 235, 240] |
| 35  | $[x + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - x]$ | [195, 196, 203, 226, 236, 237] |
| 36  | $[-x, x + \frac{1}{4}, x + \frac{3}{4}]$              | [197, 198, 205, 224, 238, 239] |
| 37  | $[x, \frac{1}{4} - x, \frac{3}{4} - x]$               | [200, 214, 215, 221, 222, 229] |
| 38  | $[\frac{1}{4} - x, x, \frac{3}{4} - x]$               | [201, 211, 216, 218, 223, 231] |
| 39  | $[\frac{1}{4} - x, \frac{1}{4} - x, x + \frac{1}{2}]$ | [202, 212, 213, 219, 220, 227] |
| 40  | $[-x, -x, \frac{1}{2} - x]$                           | [204, 206, 208, 217, 233, 234] |
| 41  | $[x, x + \frac{1}{2}, x]$                             | [241, 257, 258, 276, 278, 280] |
| 42  | $[x + \frac{1}{4}, \frac{1}{2} - x, x + \frac{1}{4}]$ | [242, 247, 255, 273, 283, 288] |
| 43  | $[x + \frac{1}{4}, x + \frac{3}{4}, -x]$              | [243, 244, 251, 274, 284, 285] |
| 44  | $[-x, x + \frac{3}{4}, x + \frac{1}{4}]$              | [245, 246, 253, 272, 286, 287] |
| 45  | $[x, \frac{3}{4} - x, \frac{1}{4} - x]$               | [248, 262, 263, 269, 270, 277] |
| 46  | $[\frac{1}{4} - x, x + \frac{1}{2}, \frac{1}{4} - x]$ | [249, 259, 264, 266, 271, 279] |
| 47  | $[\frac{1}{4} - x, \frac{3}{4} - x, x]$               | [250, 260, 261, 267, 268, 275] |
| 48  | $[-x, \frac{1}{2} - x, -x]$                           | [252, 254, 256, 265, 281, 282] |
| 49  | $[x + \frac{1}{2}, x, x]$                             | [289, 305, 306, 324, 326, 328] |
| 50  | $[x + \frac{3}{4}, -x, x + \frac{1}{4}]$              | [290, 295, 303, 321, 331, 336] |
| 51  | $[x + \frac{3}{4}, x + \frac{1}{4}, -x]$              | [291, 292, 299, 322, 332, 333] |
| 52  | $[\frac{1}{2} - x, x + \frac{1}{4}, x + \frac{1}{4}]$ | [293, 294, 301, 320, 334, 335] |
| 53  | $[x + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - x]$ | [296, 310, 311, 317, 318, 325] |
| 54  | $[\frac{3}{4} - x, x, \frac{1}{4} - x]$               | [297, 307, 312, 314, 319, 327] |
| 55  | $[\frac{3}{4} - x, \frac{1}{4} - x, x]$               | [298, 308, 309, 315, 316, 323] |
| 56  | $[\frac{1}{2} - x, -x, -x]$                           | [300, 302, 304, 313, 329, 330] |
| 57  | $[x + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$ | [337, 353, 354, 372, 374, 376] |
| 58  | $[x + \frac{3}{4}, \frac{1}{2} - x, x + \frac{3}{4}]$ | [338, 343, 351, 369, 379, 384] |
| 59  | $[x + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - x]$ | [339, 340, 347, 370, 380, 381] |
| 60  | $[\frac{1}{2} - x, x + \frac{3}{4}, x + \frac{3}{4}]$ | [341, 342, 349, 368, 382, 383] |
| 61  | $[x + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - x]$ | [344, 358, 359, 365, 366, 373] |
| 62  | $[\frac{3}{4} - x, x + \frac{1}{2}, \frac{3}{4} - x]$ | [345, 355, 360, 362, 367, 375] |
| 63  | $[\frac{3}{4} - x, \frac{3}{4} - x, x + \frac{1}{2}]$ | [346, 356, 357, 363, 364, 371] |
| 64  | $[\frac{1}{2} - x, \frac{1}{2} - x, \frac{1}{2} - x]$ | [348, 350, 352, 361, 377, 378] |

Table 6: Wyckoff site: 96f, site symmetry:  $2' . 22'$ 

| No. | position                                  | mapping            |
|-----|---|--------------------|
| 1   | $[\frac{3}{4}, \frac{5}{8}, \frac{7}{8}]$ | [1, 157, 200, 350] |
| 2   | $[0, \frac{1}{8}, \frac{7}{8}]$           | [2, 154, 195, 345] |
| 3   | $[0, \frac{1}{8}, \frac{3}{8}]$           | [3, 153, 194, 346] |
| 4   | $[\frac{1}{8}, \frac{7}{8}, \frac{1}{4}]$ | [4, 114, 256, 357] |
| 5   | $[\frac{1}{8}, \frac{7}{8}, 0]$           | [5, 115, 255, 359] |

*continued ...*

Table 6

| No. | position                                  | mapping             |
|-----|---|---------------------|
| 6   | $[\frac{3}{8}, 0, \frac{1}{8}]$           | [6, 68, 299, 358]   |
| 7   | $[\frac{7}{8}, \frac{1}{4}, \frac{1}{8}]$ | [7, 65, 300, 360]   |
| 8   | $[\frac{3}{4}, \frac{5}{8}, \frac{3}{8}]$ | [8, 158, 193, 349]  |
| 9   | $[\frac{1}{2}, \frac{5}{8}, \frac{3}{8}]$ | [9, 147, 202, 338]  |
| 10  | $[\frac{1}{2}, \frac{5}{8}, \frac{7}{8}]$ | [10, 146, 201, 339] |
| 11  | $[\frac{7}{8}, 0, \frac{1}{8}]$           | [11, 70, 294, 356]  |
| 12  | $[\frac{3}{8}, \frac{1}{4}, \frac{1}{8}]$ | [12, 72, 295, 353]  |
| 13  | $[\frac{1}{4}, \frac{1}{8}, \frac{7}{8}]$ | [13, 145, 206, 344] |
| 14  | $[\frac{1}{4}, \frac{1}{8}, \frac{3}{8}]$ | [14, 152, 205, 337] |
| 15  | $[\frac{1}{8}, \frac{3}{8}, 0]$           | [15, 119, 245, 355] |
| 16  | $[\frac{1}{8}, \frac{3}{8}, \frac{1}{4}]$ | [16, 117, 244, 354] |
| 17  | $[\frac{7}{8}, \frac{3}{4}, \frac{5}{8}]$ | [17, 55, 312, 348]  |
| 18  | $[\frac{5}{8}, \frac{7}{8}, \frac{3}{4}]$ | [18, 100, 261, 352] |
| 19  | $[\frac{5}{8}, \frac{7}{8}, \frac{1}{2}]$ | [19, 101, 263, 351] |
| 20  | $[\frac{3}{8}, \frac{1}{2}, \frac{5}{8}]$ | [20, 54, 310, 347]  |
| 21  | $[\frac{5}{8}, \frac{3}{8}, \frac{3}{4}]$ | [21, 112, 258, 340] |
| 22  | $[\frac{7}{8}, \frac{1}{2}, \frac{5}{8}]$ | [22, 59, 308, 342]  |
| 23  | $[\frac{5}{8}, \frac{3}{8}, \frac{1}{2}]$ | [23, 111, 259, 341] |
| 24  | $[\frac{3}{8}, \frac{3}{4}, \frac{5}{8}]$ | [24, 60, 305, 343]  |
| 25  | $[\frac{1}{4}, \frac{3}{8}, \frac{1}{8}]$ | [25, 133, 272, 374] |
| 26  | $[\frac{1}{2}, \frac{7}{8}, \frac{5}{8}]$ | [26, 130, 267, 369] |
| 27  | $[\frac{1}{2}, \frac{3}{8}, \frac{5}{8}]$ | [27, 129, 266, 370] |
| 28  | $[\frac{3}{8}, \frac{5}{8}, \frac{3}{4}]$ | [28, 90, 328, 381]  |
| 29  | $[\frac{7}{8}, \frac{5}{8}, \frac{1}{2}]$ | [29, 91, 327, 383]  |
| 30  | $[\frac{5}{8}, \frac{1}{2}, \frac{3}{8}]$ | [30, 188, 227, 382] |
| 31  | $[\frac{5}{8}, \frac{3}{4}, \frac{3}{8}]$ | [31, 185, 228, 384] |
| 32  | $[\frac{1}{4}, \frac{7}{8}, \frac{1}{8}]$ | [32, 134, 265, 373] |
| 33  | $[0, \frac{3}{8}, \frac{1}{8}]$           | [33, 123, 274, 362] |
| 34  | $[0, \frac{7}{8}, \frac{1}{8}]$           | [34, 122, 273, 363] |
| 35  | $[\frac{5}{8}, \frac{1}{2}, \frac{7}{8}]$ | [35, 190, 222, 380] |
| 36  | $[\frac{5}{8}, \frac{3}{4}, \frac{7}{8}]$ | [36, 192, 223, 377] |
| 37  | $[\frac{3}{4}, \frac{3}{8}, \frac{5}{8}]$ | [37, 121, 278, 368] |
| 38  | $[\frac{3}{4}, \frac{7}{8}, \frac{5}{8}]$ | [38, 128, 277, 361] |
| 39  | $[\frac{3}{8}, \frac{5}{8}, \frac{1}{2}]$ | [39, 95, 317, 379]  |
| 40  | $[\frac{7}{8}, \frac{5}{8}, \frac{3}{4}]$ | [40, 93, 316, 378]  |
| 41  | $[\frac{1}{8}, \frac{1}{4}, \frac{3}{8}]$ | [41, 175, 240, 372] |
| 42  | $[\frac{3}{8}, \frac{1}{8}, \frac{1}{4}]$ | [42, 76, 333, 376]  |
| 43  | $[\frac{7}{8}, \frac{1}{8}, 0]$           | [43, 77, 335, 375]  |
| 44  | $[\frac{1}{8}, 0, \frac{3}{8}]$           | [44, 174, 238, 371] |
| 45  | $[\frac{7}{8}, \frac{1}{8}, \frac{1}{4}]$ | [45, 88, 330, 364]  |
| 46  | $[\frac{1}{8}, 0, \frac{7}{8}]$           | [46, 179, 236, 366] |
| 47  | $[\frac{3}{8}, \frac{1}{8}, 0]$           | [47, 87, 331, 365]  |
| 48  | $[\frac{1}{8}, \frac{1}{4}, \frac{7}{8}]$ | [48, 180, 233, 367] |
| 49  | $[\frac{3}{4}, \frac{1}{8}, \frac{3}{8}]$ | [49, 109, 248, 302] |
| 50  | $[0, \frac{5}{8}, \frac{3}{8}]$           | [50, 106, 243, 297] |
| 51  | $[0, \frac{5}{8}, \frac{7}{8}]$           | [51, 105, 242, 298] |
| 52  | $[\frac{1}{8}, \frac{3}{8}, \frac{3}{4}]$ | [52, 162, 208, 309] |

continued ...

Table 6

| No. | position                                  | mapping              |
|-----|---|----------------------|
| 53  | $[\frac{1}{8}, \frac{3}{8}, \frac{1}{2}]$ | [53, 163, 207, 311]  |
| 54  | $[\frac{3}{4}, \frac{1}{8}, \frac{7}{8}]$ | [56, 110, 241, 301]  |
| 55  | $[\frac{1}{2}, \frac{1}{8}, \frac{7}{8}]$ | [57, 99, 250, 290]   |
| 56  | $[\frac{1}{2}, \frac{1}{8}, \frac{3}{8}]$ | [58, 98, 249, 291]   |
| 57  | $[\frac{1}{4}, \frac{5}{8}, \frac{3}{8}]$ | [61, 97, 254, 296]   |
| 58  | $[\frac{1}{4}, \frac{5}{8}, \frac{7}{8}]$ | [62, 104, 253, 289]  |
| 59  | $[\frac{1}{8}, \frac{7}{8}, \frac{1}{2}]$ | [63, 167, 197, 307]  |
| 60  | $[\frac{1}{8}, \frac{7}{8}, \frac{3}{4}]$ | [64, 165, 196, 306]  |
| 61  | $[\frac{5}{8}, \frac{3}{8}, \frac{1}{4}]$ | [66, 148, 213, 304]  |
| 62  | $[\frac{5}{8}, \frac{3}{8}, 0]$           | [67, 149, 215, 303]  |
| 63  | $[\frac{5}{8}, \frac{7}{8}, \frac{1}{4}]$ | [69, 160, 210, 292]  |
| 64  | $[\frac{5}{8}, \frac{7}{8}, 0]$           | [71, 159, 211, 293]  |
| 65  | $[\frac{1}{4}, \frac{7}{8}, \frac{5}{8}]$ | [73, 181, 224, 326]  |
| 66  | $[\frac{1}{2}, \frac{3}{8}, \frac{1}{8}]$ | [74, 178, 219, 321]  |
| 67  | $[\frac{1}{2}, \frac{7}{8}, \frac{1}{8}]$ | [75, 177, 218, 322]  |
| 68  | $[\frac{5}{8}, 0, \frac{7}{8}]$           | [78, 140, 275, 334]  |
| 69  | $[\frac{5}{8}, \frac{1}{4}, \frac{7}{8}]$ | [79, 137, 276, 336]  |
| 70  | $[\frac{1}{4}, \frac{3}{8}, \frac{5}{8}]$ | [80, 182, 217, 325]  |
| 71  | $[0, \frac{7}{8}, \frac{5}{8}]$           | [81, 171, 226, 314]  |
| 72  | $[0, \frac{3}{8}, \frac{5}{8}]$           | [82, 170, 225, 315]  |
| 73  | $[\frac{5}{8}, 0, \frac{3}{8}]$           | [83, 142, 270, 332]  |
| 74  | $[\frac{5}{8}, \frac{1}{4}, \frac{3}{8}]$ | [84, 144, 271, 329]  |
| 75  | $[\frac{3}{4}, \frac{7}{8}, \frac{1}{8}]$ | [85, 169, 230, 320]  |
| 76  | $[\frac{3}{4}, \frac{3}{8}, \frac{1}{8}]$ | [86, 176, 229, 313]  |
| 77  | $[\frac{1}{8}, \frac{3}{4}, \frac{7}{8}]$ | [89, 127, 288, 324]  |
| 78  | $[\frac{1}{8}, \frac{1}{2}, \frac{7}{8}]$ | [92, 126, 286, 323]  |
| 79  | $[\frac{1}{8}, \frac{1}{2}, \frac{3}{8}]$ | [94, 131, 284, 318]  |
| 80  | $[\frac{1}{8}, \frac{3}{4}, \frac{3}{8}]$ | [96, 132, 281, 319]  |
| 81  | $[\frac{7}{8}, 0, \frac{5}{8}]$           | [102, 164, 203, 262] |
| 82  | $[\frac{3}{8}, \frac{1}{4}, \frac{5}{8}]$ | [103, 161, 204, 264] |
| 83  | $[\frac{3}{8}, 0, \frac{5}{8}]$           | [107, 166, 198, 260] |
| 84  | $[\frac{7}{8}, \frac{1}{4}, \frac{5}{8}]$ | [108, 168, 199, 257] |
| 85  | $[\frac{3}{8}, \frac{3}{4}, \frac{1}{8}]$ | [113, 151, 216, 252] |
| 86  | $[\frac{7}{8}, \frac{1}{2}, \frac{1}{8}]$ | [116, 150, 214, 251] |
| 87  | $[\frac{3}{8}, \frac{1}{2}, \frac{1}{8}]$ | [118, 155, 212, 246] |
| 88  | $[\frac{7}{8}, \frac{3}{4}, \frac{1}{8}]$ | [120, 156, 209, 247] |
| 89  | $[\frac{7}{8}, \frac{5}{8}, \frac{1}{4}]$ | [124, 186, 232, 285] |
| 90  | $[\frac{3}{8}, \frac{5}{8}, 0]$           | [125, 187, 231, 287] |
| 91  | $[\frac{7}{8}, \frac{5}{8}, 0]$           | [135, 191, 221, 283] |
| 92  | $[\frac{3}{8}, \frac{5}{8}, \frac{1}{4}]$ | [136, 189, 220, 282] |
| 93  | $[\frac{7}{8}, \frac{1}{8}, \frac{3}{4}]$ | [138, 172, 237, 280] |
| 94  | $[\frac{3}{8}, \frac{1}{8}, \frac{1}{2}]$ | [139, 173, 239, 279] |
| 95  | $[\frac{3}{8}, \frac{1}{8}, \frac{3}{4}]$ | [141, 184, 234, 268] |
| 96  | $[\frac{7}{8}, \frac{1}{8}, \frac{1}{2}]$ | [143, 183, 235, 269] |

Table 7: Wyckoff site: **96g**, site symmetry: **2.mm**

| No. | position                                      | mapping              |
|-----|---|----------------------|
| 1   | $[x, \frac{5}{8}, \frac{5}{8}]$               | [1, 8, 37, 38]       |
| 2   | $[x + \frac{1}{4}, \frac{3}{8}, \frac{7}{8}]$ | [2, 33, 51, 82]      |
| 3   | $[x + \frac{1}{4}, \frac{7}{8}, \frac{3}{8}]$ | [3, 34, 50, 81]      |
| 4   | $[\frac{7}{8}, \frac{7}{8}, -x]$              | [4, 45, 160, 186]    |
| 5   | $[\frac{3}{8}, \frac{7}{8}, x + \frac{1}{4}]$ | [5, 47, 159, 187]    |
| 6   | $[\frac{3}{8}, x + \frac{1}{4}, \frac{7}{8}]$ | [6, 46, 107, 140]    |
| 7   | $[\frac{7}{8}, -x, \frac{7}{8}]$              | [7, 48, 108, 137]    |
| 8   | $[\frac{1}{4} - x, \frac{5}{8}, \frac{5}{8}]$ | [9, 10, 26, 27]      |
| 9   | $[\frac{7}{8}, x + \frac{1}{4}, \frac{3}{8}]$ | [11, 44, 102, 142]   |
| 10  | $[\frac{3}{8}, -x, \frac{3}{8}]$              | [12, 41, 103, 144]   |
| 11  | $[-x, \frac{7}{8}, \frac{7}{8}]$              | [13, 32, 62, 73]     |
| 12  | $[-x, \frac{3}{8}, \frac{3}{8}]$              | [14, 25, 61, 80]     |
| 13  | $[\frac{7}{8}, \frac{3}{8}, x + \frac{1}{4}]$ | [15, 43, 149, 191]   |
| 14  | $[\frac{3}{8}, \frac{3}{8}, -x]$              | [16, 42, 148, 189]   |
| 15  | $[\frac{5}{8}, x, \frac{5}{8}]$               | [17, 24, 31, 36]     |
| 16  | $[\frac{5}{8}, \frac{5}{8}, x]$               | [18, 21, 28, 40]     |
| 17  | $[\frac{5}{8}, \frac{5}{8}, \frac{1}{4} - x]$ | [19, 23, 29, 39]     |
| 18  | $[\frac{5}{8}, \frac{1}{4} - x, \frac{5}{8}]$ | [20, 22, 30, 35]     |
| 19  | $[x, \frac{1}{8}, \frac{1}{8}]$               | [49, 56, 85, 86]     |
| 20  | $[\frac{7}{8}, \frac{3}{8}, \frac{1}{2} - x]$ | [52, 93, 112, 138]   |
| 21  | $[\frac{3}{8}, \frac{3}{8}, x + \frac{3}{4}]$ | [53, 95, 111, 139]   |
| 22  | $[\frac{3}{8}, x + \frac{3}{4}, \frac{3}{8}]$ | [54, 94, 155, 188]   |
| 23  | $[\frac{7}{8}, \frac{1}{2} - x, \frac{3}{8}]$ | [55, 96, 156, 185]   |
| 24  | $[\frac{1}{4} - x, \frac{1}{8}, \frac{1}{8}]$ | [57, 58, 74, 75]     |
| 25  | $[\frac{7}{8}, x + \frac{3}{4}, \frac{7}{8}]$ | [59, 92, 150, 190]   |
| 26  | $[\frac{3}{8}, \frac{1}{2} - x, \frac{7}{8}]$ | [60, 89, 151, 192]   |
| 27  | $[\frac{7}{8}, \frac{7}{8}, x + \frac{3}{4}]$ | [63, 91, 101, 143]   |
| 28  | $[\frac{3}{8}, \frac{7}{8}, \frac{1}{2} - x]$ | [64, 90, 100, 141]   |
| 29  | $[\frac{5}{8}, x + \frac{1}{2}, \frac{1}{8}]$ | [65, 72, 79, 84]     |
| 30  | $[\frac{5}{8}, \frac{1}{8}, x + \frac{1}{2}]$ | [66, 69, 76, 88]     |
| 31  | $[\frac{5}{8}, \frac{1}{8}, \frac{3}{4} - x]$ | [67, 71, 77, 87]     |
| 32  | $[\frac{5}{8}, \frac{3}{4} - x, \frac{1}{8}]$ | [68, 70, 78, 83]     |
| 33  | $[x + \frac{1}{2}, \frac{5}{8}, \frac{1}{8}]$ | [97, 104, 133, 134]  |
| 34  | $[x + \frac{3}{4}, \frac{3}{8}, \frac{3}{8}]$ | [98, 129, 147, 178]  |
| 35  | $[x + \frac{3}{4}, \frac{7}{8}, \frac{7}{8}]$ | [99, 130, 146, 177]  |
| 36  | $[\frac{3}{4} - x, \frac{5}{8}, \frac{1}{8}]$ | [105, 106, 122, 123] |
| 37  | $[\frac{1}{2} - x, \frac{7}{8}, \frac{3}{8}]$ | [109, 128, 158, 169] |
| 38  | $[\frac{1}{2} - x, \frac{3}{8}, \frac{7}{8}]$ | [110, 121, 157, 176] |
| 39  | $[\frac{1}{8}, x, \frac{1}{8}]$               | [113, 120, 127, 132] |
| 40  | $[\frac{1}{8}, \frac{5}{8}, x + \frac{1}{2}]$ | [114, 117, 124, 136] |
| 41  | $[\frac{1}{8}, \frac{5}{8}, \frac{3}{4} - x]$ | [115, 119, 125, 135] |
| 42  | $[\frac{1}{8}, \frac{1}{4} - x, \frac{1}{8}]$ | [116, 118, 126, 131] |
| 43  | $[x + \frac{1}{2}, \frac{1}{8}, \frac{5}{8}]$ | [145, 152, 181, 182] |
| 44  | $[\frac{3}{4} - x, \frac{1}{8}, \frac{5}{8}]$ | [153, 154, 170, 171] |
| 45  | $[\frac{1}{8}, x + \frac{1}{2}, \frac{5}{8}]$ | [161, 168, 175, 180] |
| 46  | $[\frac{1}{8}, \frac{1}{8}, x]$               | [162, 165, 172, 184] |

*continued ...*



Table 7

| No. | position                                      | mapping              |
|-----|---|----------------------|
| 47  | $[\frac{1}{8}, \frac{1}{8}, \frac{1}{4} - x]$ | [163, 167, 173, 183] |
| 48  | $[\frac{1}{8}, \frac{3}{4} - x, \frac{5}{8}]$ | [164, 166, 174, 179] |
| 49  | $[x, \frac{5}{8}, \frac{1}{8}]$               | [193, 200, 229, 230] |
| 50  | $[x + \frac{1}{4}, \frac{3}{8}, \frac{3}{8}]$ | [194, 225, 243, 274] |
| 51  | $[x + \frac{1}{4}, \frac{7}{8}, \frac{7}{8}]$ | [195, 226, 242, 273] |
| 52  | $[\frac{7}{8}, \frac{7}{8}, \frac{1}{2} - x]$ | [196, 237, 352, 378] |
| 53  | $[\frac{3}{8}, \frac{7}{8}, x + \frac{3}{4}]$ | [197, 239, 351, 379] |
| 54  | $[\frac{3}{8}, x + \frac{1}{4}, \frac{3}{8}]$ | [198, 238, 299, 332] |
| 55  | $[\frac{7}{8}, -x, \frac{3}{8}]$              | [199, 240, 300, 329] |
| 56  | $[\frac{1}{4} - x, \frac{5}{8}, \frac{1}{8}]$ | [201, 202, 218, 219] |
| 57  | $[\frac{7}{8}, x + \frac{1}{4}, \frac{7}{8}]$ | [203, 236, 294, 334] |
| 58  | $[\frac{3}{8}, -x, \frac{7}{8}]$              | [204, 233, 295, 336] |
| 59  | $[-x, \frac{7}{8}, \frac{3}{8}]$              | [205, 224, 254, 265] |
| 60  | $[-x, \frac{3}{8}, \frac{7}{8}]$              | [206, 217, 253, 272] |
| 61  | $[\frac{7}{8}, \frac{3}{8}, x + \frac{3}{4}]$ | [207, 235, 341, 383] |
| 62  | $[\frac{3}{8}, \frac{3}{8}, \frac{1}{2} - x]$ | [208, 234, 340, 381] |
| 63  | $[\frac{5}{8}, x, \frac{1}{8}]$               | [209, 216, 223, 228] |
| 64  | $[\frac{5}{8}, \frac{5}{8}, x + \frac{1}{2}]$ | [210, 213, 220, 232] |
| 65  | $[\frac{5}{8}, \frac{5}{8}, \frac{3}{4} - x]$ | [211, 215, 221, 231] |
| 66  | $[\frac{5}{8}, \frac{1}{4} - x, \frac{1}{8}]$ | [212, 214, 222, 227] |
| 67  | $[x, \frac{1}{8}, \frac{5}{8}]$               | [241, 248, 277, 278] |
| 68  | $[\frac{7}{8}, \frac{3}{8}, -x]$              | [244, 285, 304, 330] |
| 69  | $[\frac{3}{8}, \frac{3}{8}, x + \frac{1}{4}]$ | [245, 287, 303, 331] |
| 70  | $[\frac{3}{8}, x + \frac{3}{4}, \frac{7}{8}]$ | [246, 286, 347, 380] |
| 71  | $[\frac{7}{8}, \frac{1}{2} - x, \frac{7}{8}]$ | [247, 288, 348, 377] |
| 72  | $[\frac{1}{4} - x, \frac{1}{8}, \frac{5}{8}]$ | [249, 250, 266, 267] |
| 73  | $[\frac{7}{8}, x + \frac{3}{4}, \frac{3}{8}]$ | [251, 284, 342, 382] |
| 74  | $[\frac{3}{8}, \frac{1}{2} - x, \frac{3}{8}]$ | [252, 281, 343, 384] |
| 75  | $[\frac{7}{8}, \frac{7}{8}, x + \frac{1}{4}]$ | [255, 283, 293, 335] |
| 76  | $[\frac{3}{8}, \frac{7}{8}, -x]$              | [256, 282, 292, 333] |
| 77  | $[\frac{5}{8}, x + \frac{1}{2}, \frac{5}{8}]$ | [257, 264, 271, 276] |
| 78  | $[\frac{5}{8}, \frac{1}{8}, x]$               | [258, 261, 268, 280] |
| 79  | $[\frac{5}{8}, \frac{1}{8}, \frac{1}{4} - x]$ | [259, 263, 269, 279] |
| 80  | $[\frac{5}{8}, \frac{3}{4} - x, \frac{5}{8}]$ | [260, 262, 270, 275] |
| 81  | $[x + \frac{1}{2}, \frac{5}{8}, \frac{5}{8}]$ | [289, 296, 325, 326] |
| 82  | $[x + \frac{3}{4}, \frac{3}{8}, \frac{7}{8}]$ | [290, 321, 339, 370] |
| 83  | $[x + \frac{3}{4}, \frac{7}{8}, \frac{3}{8}]$ | [291, 322, 338, 369] |
| 84  | $[\frac{3}{4} - x, \frac{5}{8}, \frac{5}{8}]$ | [297, 298, 314, 315] |
| 85  | $[\frac{1}{2} - x, \frac{7}{8}, \frac{7}{8}]$ | [301, 320, 350, 361] |
| 86  | $[\frac{1}{2} - x, \frac{3}{8}, \frac{3}{8}]$ | [302, 313, 349, 368] |
| 87  | $[\frac{1}{8}, x, \frac{5}{8}]$               | [305, 312, 319, 324] |
| 88  | $[\frac{1}{8}, \frac{5}{8}, x]$               | [306, 309, 316, 328] |
| 89  | $[\frac{1}{8}, \frac{5}{8}, \frac{1}{4} - x]$ | [307, 311, 317, 327] |
| 90  | $[\frac{1}{8}, \frac{1}{4} - x, \frac{5}{8}]$ | [308, 310, 318, 323] |
| 91  | $[x + \frac{1}{2}, \frac{1}{8}, \frac{1}{8}]$ | [337, 344, 373, 374] |
| 92  | $[\frac{3}{4} - x, \frac{1}{8}, \frac{1}{8}]$ | [345, 346, 362, 363] |
| 93  | $[\frac{1}{8}, x + \frac{1}{2}, \frac{1}{8}]$ | [353, 360, 367, 372] |

continued ...

Table 7

| No. | position                                      | mapping              |
|-----|---|----------------------|
| 94  | $[\frac{1}{8}, \frac{1}{8}, x + \frac{1}{2}]$ | [354, 357, 364, 376] |
| 95  | $[\frac{1}{8}, \frac{1}{8}, \frac{3}{4} - x]$ | [355, 359, 365, 375] |
| 96  | $[\frac{1}{8}, \frac{3}{4} - x, \frac{1}{8}]$ | [356, 358, 366, 371] |

Table 8: Wyckoff site: 192h, site symmetry:  $2'..$ 

| No. | position                                      | mapping   |
|-----|---|-----------|
| 1   | $[x, \frac{5}{8}, \frac{7}{8}]$               | [1, 200]  |
| 2   | $[x + \frac{1}{4}, \frac{1}{8}, \frac{7}{8}]$ | [2, 195]  |
| 3   | $[x + \frac{1}{4}, \frac{1}{8}, \frac{3}{8}]$ | [3, 194]  |
| 4   | $[\frac{1}{8}, \frac{7}{8}, -x]$              | [4, 256]  |
| 5   | $[\frac{1}{8}, \frac{7}{8}, x + \frac{1}{4}]$ | [5, 255]  |
| 6   | $[\frac{3}{8}, x + \frac{1}{4}, \frac{1}{8}]$ | [6, 299]  |
| 7   | $[\frac{7}{8}, -x, \frac{1}{8}]$              | [7, 300]  |
| 8   | $[x, \frac{5}{8}, \frac{3}{8}]$               | [8, 193]  |
| 9   | $[\frac{1}{4} - x, \frac{5}{8}, \frac{3}{8}]$ | [9, 202]  |
| 10  | $[\frac{1}{4} - x, \frac{5}{8}, \frac{7}{8}]$ | [10, 201] |
| 11  | $[\frac{7}{8}, x + \frac{1}{4}, \frac{1}{8}]$ | [11, 294] |
| 12  | $[\frac{3}{8}, -x, \frac{1}{8}]$              | [12, 295] |
| 13  | $[-x, \frac{1}{8}, \frac{7}{8}]$              | [13, 206] |
| 14  | $[-x, \frac{1}{8}, \frac{3}{8}]$              | [14, 205] |
| 15  | $[\frac{1}{8}, \frac{3}{8}, x + \frac{1}{4}]$ | [15, 245] |
| 16  | $[\frac{1}{8}, \frac{3}{8}, -x]$              | [16, 244] |
| 17  | $[\frac{7}{8}, x, \frac{5}{8}]$               | [17, 312] |
| 18  | $[\frac{5}{8}, \frac{7}{8}, x]$               | [18, 261] |
| 19  | $[\frac{5}{8}, \frac{7}{8}, \frac{1}{4} - x]$ | [19, 263] |
| 20  | $[\frac{3}{8}, \frac{1}{4} - x, \frac{5}{8}]$ | [20, 310] |
| 21  | $[\frac{5}{8}, \frac{3}{8}, x]$               | [21, 258] |
| 22  | $[\frac{7}{8}, \frac{1}{4} - x, \frac{5}{8}]$ | [22, 308] |
| 23  | $[\frac{5}{8}, \frac{3}{8}, \frac{1}{4} - x]$ | [23, 259] |
| 24  | $[\frac{3}{8}, x, \frac{5}{8}]$               | [24, 305] |
| 25  | $[-x, \frac{3}{8}, \frac{1}{8}]$              | [25, 272] |
| 26  | $[\frac{1}{4} - x, \frac{7}{8}, \frac{5}{8}]$ | [26, 267] |
| 27  | $[\frac{1}{4} - x, \frac{3}{8}, \frac{5}{8}]$ | [27, 266] |
| 28  | $[\frac{3}{8}, \frac{5}{8}, x]$               | [28, 328] |
| 29  | $[\frac{7}{8}, \frac{5}{8}, \frac{1}{4} - x]$ | [29, 327] |
| 30  | $[\frac{5}{8}, \frac{1}{4} - x, \frac{3}{8}]$ | [30, 227] |
| 31  | $[\frac{5}{8}, x, \frac{3}{8}]$               | [31, 228] |
| 32  | $[-x, \frac{7}{8}, \frac{1}{8}]$              | [32, 265] |
| 33  | $[x + \frac{1}{4}, \frac{3}{8}, \frac{1}{8}]$ | [33, 274] |
| 34  | $[x + \frac{1}{4}, \frac{7}{8}, \frac{1}{8}]$ | [34, 273] |
| 35  | $[\frac{5}{8}, \frac{1}{4} - x, \frac{7}{8}]$ | [35, 222] |
| 36  | $[\frac{5}{8}, x, \frac{7}{8}]$               | [36, 223] |
| 37  | $[x, \frac{3}{8}, \frac{5}{8}]$               | [37, 278] |

*continued ...*

Table 8

| No. | position                                      | mapping  |
|-----|---|----------|
| 38  | $[x, \frac{7}{8}, \frac{5}{8}]$               | [38,277] |
| 39  | $[\frac{3}{8}, \frac{5}{8}, \frac{1}{4} - x]$ | [39,317] |
| 40  | $[\frac{7}{8}, \frac{5}{8}, x]$               | [40,316] |
| 41  | $[\frac{1}{8}, -x, \frac{3}{8}]$              | [41,240] |
| 42  | $[\frac{3}{8}, \frac{1}{8}, -x]$              | [42,333] |
| 43  | $[\frac{7}{8}, \frac{1}{8}, x + \frac{1}{4}]$ | [43,335] |
| 44  | $[\frac{1}{8}, x + \frac{1}{4}, \frac{3}{8}]$ | [44,238] |
| 45  | $[\frac{7}{8}, \frac{1}{8}, -x]$              | [45,330] |
| 46  | $[\frac{1}{8}, x + \frac{1}{4}, \frac{7}{8}]$ | [46,236] |
| 47  | $[\frac{3}{8}, \frac{1}{8}, x + \frac{1}{4}]$ | [47,331] |
| 48  | $[\frac{1}{8}, -x, \frac{7}{8}]$              | [48,233] |
| 49  | $[x, \frac{1}{8}, \frac{3}{8}]$               | [49,248] |
| 50  | $[x + \frac{1}{4}, \frac{5}{8}, \frac{3}{8}]$ | [50,243] |
| 51  | $[x + \frac{1}{4}, \frac{5}{8}, \frac{7}{8}]$ | [51,242] |
| 52  | $[\frac{1}{8}, \frac{3}{8}, \frac{1}{2} - x]$ | [52,208] |
| 53  | $[\frac{1}{8}, \frac{3}{8}, x + \frac{3}{4}]$ | [53,207] |
| 54  | $[\frac{3}{8}, x + \frac{3}{4}, \frac{5}{8}]$ | [54,347] |
| 55  | $[\frac{7}{8}, \frac{1}{2} - x, \frac{5}{8}]$ | [55,348] |
| 56  | $[x, \frac{1}{8}, \frac{7}{8}]$               | [56,241] |
| 57  | $[\frac{1}{4} - x, \frac{1}{8}, \frac{7}{8}]$ | [57,250] |
| 58  | $[\frac{1}{4} - x, \frac{1}{8}, \frac{3}{8}]$ | [58,249] |
| 59  | $[\frac{7}{8}, x + \frac{3}{4}, \frac{5}{8}]$ | [59,342] |
| 60  | $[\frac{3}{8}, \frac{1}{2} - x, \frac{5}{8}]$ | [60,343] |
| 61  | $[-x, \frac{5}{8}, \frac{3}{8}]$              | [61,254] |
| 62  | $[-x, \frac{5}{8}, \frac{7}{8}]$              | [62,253] |
| 63  | $[\frac{1}{8}, \frac{7}{8}, x + \frac{3}{4}]$ | [63,197] |
| 64  | $[\frac{1}{8}, \frac{7}{8}, \frac{1}{2} - x]$ | [64,196] |
| 65  | $[\frac{7}{8}, x + \frac{1}{2}, \frac{1}{8}]$ | [65,360] |
| 66  | $[\frac{5}{8}, \frac{3}{8}, x + \frac{1}{2}]$ | [66,213] |
| 67  | $[\frac{5}{8}, \frac{3}{8}, \frac{3}{4} - x]$ | [67,215] |
| 68  | $[\frac{3}{8}, \frac{3}{4} - x, \frac{1}{8}]$ | [68,358] |
| 69  | $[\frac{5}{8}, \frac{7}{8}, x + \frac{1}{2}]$ | [69,210] |
| 70  | $[\frac{7}{8}, \frac{3}{4} - x, \frac{1}{8}]$ | [70,356] |
| 71  | $[\frac{5}{8}, \frac{7}{8}, \frac{3}{4} - x]$ | [71,211] |
| 72  | $[\frac{3}{8}, x + \frac{1}{2}, \frac{1}{8}]$ | [72,353] |
| 73  | $[-x, \frac{7}{8}, \frac{5}{8}]$              | [73,224] |
| 74  | $[\frac{1}{4} - x, \frac{3}{8}, \frac{1}{8}]$ | [74,219] |
| 75  | $[\frac{1}{4} - x, \frac{7}{8}, \frac{1}{8}]$ | [75,218] |
| 76  | $[\frac{3}{8}, \frac{1}{8}, x + \frac{1}{2}]$ | [76,376] |
| 77  | $[\frac{7}{8}, \frac{1}{8}, \frac{3}{4} - x]$ | [77,375] |
| 78  | $[\frac{5}{8}, \frac{3}{4} - x, \frac{7}{8}]$ | [78,275] |
| 79  | $[\frac{5}{8}, x + \frac{1}{2}, \frac{7}{8}]$ | [79,276] |
| 80  | $[-x, \frac{3}{8}, \frac{5}{8}]$              | [80,217] |
| 81  | $[x + \frac{1}{4}, \frac{7}{8}, \frac{5}{8}]$ | [81,226] |
| 82  | $[x + \frac{1}{4}, \frac{3}{8}, \frac{5}{8}]$ | [82,225] |
| 83  | $[\frac{5}{8}, \frac{3}{4} - x, \frac{3}{8}]$ | [83,270] |
| 84  | $[\frac{5}{8}, x + \frac{1}{2}, \frac{3}{8}]$ | [84,271] |

continued ...

Table 8

| No. | position                                      | mapping   |
|-----|---|-----------|
| 85  | $[x, \frac{7}{8}, \frac{1}{8}]$               | [85,230]  |
| 86  | $[x, \frac{3}{8}, \frac{1}{8}]$               | [86,229]  |
| 87  | $[\frac{3}{8}, \frac{1}{8}, \frac{3}{4} - x]$ | [87,365]  |
| 88  | $[\frac{7}{8}, \frac{1}{8}, x + \frac{1}{2}]$ | [88,364]  |
| 89  | $[\frac{1}{8}, \frac{1}{2} - x, \frac{7}{8}]$ | [89,288]  |
| 90  | $[\frac{3}{8}, \frac{5}{8}, \frac{1}{2} - x]$ | [90,381]  |
| 91  | $[\frac{7}{8}, \frac{5}{8}, x + \frac{3}{4}]$ | [91,383]  |
| 92  | $[\frac{1}{8}, x + \frac{3}{4}, \frac{7}{8}]$ | [92,286]  |
| 93  | $[\frac{7}{8}, \frac{5}{8}, \frac{1}{2} - x]$ | [93,378]  |
| 94  | $[\frac{1}{8}, x + \frac{3}{4}, \frac{3}{8}]$ | [94,284]  |
| 95  | $[\frac{3}{8}, \frac{5}{8}, x + \frac{3}{4}]$ | [95,379]  |
| 96  | $[\frac{1}{8}, \frac{1}{2} - x, \frac{3}{8}]$ | [96,281]  |
| 97  | $[x + \frac{1}{2}, \frac{5}{8}, \frac{3}{8}]$ | [97,296]  |
| 98  | $[x + \frac{3}{4}, \frac{1}{8}, \frac{3}{8}]$ | [98,291]  |
| 99  | $[x + \frac{3}{4}, \frac{1}{8}, \frac{7}{8}]$ | [99,290]  |
| 100 | $[\frac{5}{8}, \frac{7}{8}, \frac{1}{2} - x]$ | [100,352] |
| 101 | $[\frac{5}{8}, \frac{7}{8}, x + \frac{3}{4}]$ | [101,351] |
| 102 | $[\frac{7}{8}, x + \frac{1}{4}, \frac{5}{8}]$ | [102,203] |
| 103 | $[\frac{3}{8}, -x, \frac{5}{8}]$              | [103,204] |
| 104 | $[x + \frac{1}{2}, \frac{5}{8}, \frac{7}{8}]$ | [104,289] |
| 105 | $[\frac{3}{4} - x, \frac{5}{8}, \frac{7}{8}]$ | [105,298] |
| 106 | $[\frac{3}{4} - x, \frac{5}{8}, \frac{3}{8}]$ | [106,297] |
| 107 | $[\frac{3}{8}, x + \frac{1}{4}, \frac{5}{8}]$ | [107,198] |
| 108 | $[\frac{7}{8}, -x, \frac{5}{8}]$              | [108,199] |
| 109 | $[\frac{1}{2} - x, \frac{1}{8}, \frac{3}{8}]$ | [109,302] |
| 110 | $[\frac{1}{2} - x, \frac{1}{8}, \frac{7}{8}]$ | [110,301] |
| 111 | $[\frac{5}{8}, \frac{3}{8}, x + \frac{3}{4}]$ | [111,341] |
| 112 | $[\frac{5}{8}, \frac{3}{8}, \frac{1}{2} - x]$ | [112,340] |
| 113 | $[\frac{3}{8}, x, \frac{1}{8}]$               | [113,216] |
| 114 | $[\frac{1}{8}, \frac{7}{8}, x + \frac{1}{2}]$ | [114,357] |
| 115 | $[\frac{1}{8}, \frac{7}{8}, \frac{3}{4} - x]$ | [115,359] |
| 116 | $[\frac{7}{8}, \frac{1}{4} - x, \frac{1}{8}]$ | [116,214] |
| 117 | $[\frac{1}{8}, \frac{3}{8}, x + \frac{1}{2}]$ | [117,354] |
| 118 | $[\frac{3}{8}, \frac{1}{4} - x, \frac{1}{8}]$ | [118,212] |
| 119 | $[\frac{1}{8}, \frac{3}{8}, \frac{3}{4} - x]$ | [119,355] |
| 120 | $[\frac{7}{8}, x, \frac{1}{8}]$               | [120,209] |
| 121 | $[\frac{1}{2} - x, \frac{3}{8}, \frac{5}{8}]$ | [121,368] |
| 122 | $[\frac{3}{4} - x, \frac{7}{8}, \frac{1}{8}]$ | [122,363] |
| 123 | $[\frac{3}{4} - x, \frac{3}{8}, \frac{1}{8}]$ | [123,362] |
| 124 | $[\frac{7}{8}, \frac{5}{8}, x + \frac{1}{2}]$ | [124,232] |
| 125 | $[\frac{3}{8}, \frac{5}{8}, \frac{3}{4} - x]$ | [125,231] |
| 126 | $[\frac{1}{8}, \frac{1}{4} - x, \frac{7}{8}]$ | [126,323] |
| 127 | $[\frac{1}{8}, x, \frac{7}{8}]$               | [127,324] |
| 128 | $[\frac{1}{2} - x, \frac{7}{8}, \frac{5}{8}]$ | [128,361] |
| 129 | $[x + \frac{3}{4}, \frac{3}{8}, \frac{5}{8}]$ | [129,370] |
| 130 | $[x + \frac{3}{4}, \frac{7}{8}, \frac{5}{8}]$ | [130,369] |
| 131 | $[\frac{1}{8}, \frac{1}{4} - x, \frac{3}{8}]$ | [131,318] |

continued ...

Table 8

| No. | position                                      | mapping    |
|-----|---|------------|
| 132 | $[\frac{1}{8}, x, \frac{3}{8}]$               | [132, 319] |
| 133 | $[x + \frac{1}{2}, \frac{3}{8}, \frac{1}{8}]$ | [133, 374] |
| 134 | $[x + \frac{1}{2}, \frac{7}{8}, \frac{1}{8}]$ | [134, 373] |
| 135 | $[\frac{7}{8}, \frac{5}{8}, \frac{3}{4} - x]$ | [135, 221] |
| 136 | $[\frac{3}{8}, \frac{5}{8}, x + \frac{1}{2}]$ | [136, 220] |
| 137 | $[\frac{5}{8}, -x, \frac{7}{8}]$              | [137, 336] |
| 138 | $[\frac{7}{8}, \frac{1}{8}, \frac{1}{2} - x]$ | [138, 237] |
| 139 | $[\frac{3}{8}, \frac{1}{8}, x + \frac{3}{4}]$ | [139, 239] |
| 140 | $[\frac{5}{8}, x + \frac{1}{4}, \frac{7}{8}]$ | [140, 334] |
| 141 | $[\frac{3}{8}, \frac{1}{8}, \frac{1}{2} - x]$ | [141, 234] |
| 142 | $[\frac{5}{8}, x + \frac{1}{4}, \frac{3}{8}]$ | [142, 332] |
| 143 | $[\frac{7}{8}, \frac{1}{8}, x + \frac{3}{4}]$ | [143, 235] |
| 144 | $[\frac{5}{8}, -x, \frac{3}{8}]$              | [144, 329] |
| 145 | $[x + \frac{1}{2}, \frac{1}{8}, \frac{7}{8}]$ | [145, 344] |
| 146 | $[x + \frac{3}{4}, \frac{5}{8}, \frac{7}{8}]$ | [146, 339] |
| 147 | $[x + \frac{3}{4}, \frac{5}{8}, \frac{3}{8}]$ | [147, 338] |
| 148 | $[\frac{5}{8}, \frac{3}{8}, -x]$              | [148, 304] |
| 149 | $[\frac{5}{8}, \frac{3}{8}, x + \frac{1}{4}]$ | [149, 303] |
| 150 | $[\frac{7}{8}, x + \frac{3}{4}, \frac{1}{8}]$ | [150, 251] |
| 151 | $[\frac{3}{8}, \frac{1}{2} - x, \frac{1}{8}]$ | [151, 252] |
| 152 | $[x + \frac{1}{2}, \frac{1}{8}, \frac{3}{8}]$ | [152, 337] |
| 153 | $[\frac{3}{4} - x, \frac{1}{8}, \frac{3}{8}]$ | [153, 346] |
| 154 | $[\frac{3}{4} - x, \frac{1}{8}, \frac{7}{8}]$ | [154, 345] |
| 155 | $[\frac{3}{8}, x + \frac{3}{4}, \frac{1}{8}]$ | [155, 246] |
| 156 | $[\frac{7}{8}, \frac{1}{2} - x, \frac{1}{8}]$ | [156, 247] |
| 157 | $[\frac{1}{2} - x, \frac{5}{8}, \frac{7}{8}]$ | [157, 350] |
| 158 | $[\frac{1}{2} - x, \frac{5}{8}, \frac{3}{8}]$ | [158, 349] |
| 159 | $[\frac{5}{8}, \frac{7}{8}, x + \frac{1}{4}]$ | [159, 293] |
| 160 | $[\frac{5}{8}, \frac{7}{8}, -x]$              | [160, 292] |
| 161 | $[\frac{3}{8}, x + \frac{1}{2}, \frac{5}{8}]$ | [161, 264] |
| 162 | $[\frac{1}{8}, \frac{3}{8}, x]$               | [162, 309] |
| 163 | $[\frac{1}{8}, \frac{3}{8}, \frac{1}{4} - x]$ | [163, 311] |
| 164 | $[\frac{7}{8}, \frac{3}{4} - x, \frac{5}{8}]$ | [164, 262] |
| 165 | $[\frac{1}{8}, \frac{7}{8}, x]$               | [165, 306] |
| 166 | $[\frac{3}{8}, \frac{3}{4} - x, \frac{5}{8}]$ | [166, 260] |
| 167 | $[\frac{1}{8}, \frac{7}{8}, \frac{1}{4} - x]$ | [167, 307] |
| 168 | $[\frac{7}{8}, x + \frac{1}{2}, \frac{5}{8}]$ | [168, 257] |
| 169 | $[\frac{1}{2} - x, \frac{7}{8}, \frac{1}{8}]$ | [169, 320] |
| 170 | $[\frac{3}{4} - x, \frac{3}{8}, \frac{5}{8}]$ | [170, 315] |
| 171 | $[\frac{3}{4} - x, \frac{7}{8}, \frac{5}{8}]$ | [171, 314] |
| 172 | $[\frac{7}{8}, \frac{1}{8}, x]$               | [172, 280] |
| 173 | $[\frac{3}{8}, \frac{1}{8}, \frac{1}{4} - x]$ | [173, 279] |
| 174 | $[\frac{1}{8}, \frac{3}{4} - x, \frac{3}{8}]$ | [174, 371] |
| 175 | $[\frac{1}{8}, x + \frac{1}{2}, \frac{3}{8}]$ | [175, 372] |
| 176 | $[\frac{1}{2} - x, \frac{3}{8}, \frac{1}{8}]$ | [176, 313] |
| 177 | $[x + \frac{3}{4}, \frac{7}{8}, \frac{1}{8}]$ | [177, 322] |
| 178 | $[x + \frac{3}{4}, \frac{3}{8}, \frac{1}{8}]$ | [178, 321] |

continued ...

Table 8

| No. | position                                      | mapping   |
|-----|---|-----------|
| 179 | $[\frac{1}{8}, \frac{3}{4} - x, \frac{7}{8}]$ | [179,366] |
| 180 | $[\frac{1}{8}, x + \frac{1}{2}, \frac{7}{8}]$ | [180,367] |
| 181 | $[x + \frac{1}{2}, \frac{7}{8}, \frac{5}{8}]$ | [181,326] |
| 182 | $[x + \frac{1}{2}, \frac{3}{8}, \frac{5}{8}]$ | [182,325] |
| 183 | $[\frac{7}{8}, \frac{1}{8}, \frac{1}{4} - x]$ | [183,269] |
| 184 | $[\frac{3}{8}, \frac{1}{8}, x]$               | [184,268] |
| 185 | $[\frac{5}{8}, \frac{1}{2} - x, \frac{3}{8}]$ | [185,384] |
| 186 | $[\frac{7}{8}, \frac{5}{8}, -x]$              | [186,285] |
| 187 | $[\frac{3}{8}, \frac{5}{8}, x + \frac{1}{4}]$ | [187,287] |
| 188 | $[\frac{5}{8}, x + \frac{3}{4}, \frac{3}{8}]$ | [188,382] |
| 189 | $[\frac{3}{8}, \frac{5}{8}, -x]$              | [189,282] |
| 190 | $[\frac{5}{8}, x + \frac{3}{4}, \frac{7}{8}]$ | [190,380] |
| 191 | $[\frac{7}{8}, \frac{5}{8}, x + \frac{1}{4}]$ | [191,283] |
| 192 | $[\frac{5}{8}, \frac{1}{2} - x, \frac{7}{8}]$ | [192,377] |

Table 9: Wyckoff site: 192i, site symmetry:  $\dots 2$ 

| No. | position  | mapping  |
|-----|---|----------|
| 1   | $[\frac{3}{4}, y, y + \frac{1}{4}]$               | [1,157]  |
| 2   | $[0, \frac{3}{4} - y, y + \frac{1}{4}]$           | [2,154]  |
| 3   | $[0, y + \frac{1}{2}, -y]$                        | [3,153]  |
| 4   | $[y + \frac{1}{2}, y + \frac{1}{4}, \frac{1}{4}]$ | [4,114]  |
| 5   | $[\frac{3}{4} - y, y + \frac{1}{4}, 0]$           | [5,115]  |
| 6   | $[-y, 0, y + \frac{1}{2}]$                        | [6,68]   |
| 7   | $[y + \frac{1}{4}, \frac{1}{4}, y + \frac{1}{2}]$ | [7,65]   |
| 8   | $[\frac{3}{4}, \frac{1}{4} - y, -y]$              | [8,158]  |
| 9   | $[\frac{1}{2}, y, -y]$                            | [9,147]  |
| 10  | $[\frac{1}{2}, \frac{1}{4} - y, y + \frac{1}{4}]$ | [10,146] |
| 11  | $[y + \frac{1}{4}, 0, \frac{3}{4} - y]$           | [11,70]  |
| 12  | $[-y, \frac{1}{4}, \frac{3}{4} - y]$              | [12,72]  |
| 13  | $[\frac{1}{4}, y + \frac{1}{2}, y + \frac{1}{4}]$ | [13,145] |
| 14  | $[\frac{1}{4}, \frac{3}{4} - y, -y]$              | [14,152] |
| 15  | $[y + \frac{1}{2}, -y, 0]$                        | [15,119] |
| 16  | $[\frac{3}{4} - y, -y, \frac{1}{4}]$              | [16,117] |
| 17  | $[y + \frac{1}{4}, \frac{3}{4}, y]$               | [17,55]  |
| 18  | $[y, y + \frac{1}{4}, \frac{3}{4}]$               | [18,100] |
| 19  | $[\frac{1}{4} - y, y + \frac{1}{4}, \frac{1}{2}]$ | [19,101] |
| 20  | $[-y, \frac{1}{2}, y]$                            | [20,54]  |
| 21  | $[\frac{1}{4} - y, -y, \frac{3}{4}]$              | [21,112] |
| 22  | $[y + \frac{1}{4}, \frac{1}{2}, \frac{1}{4} - y]$ | [22,59]  |
| 23  | $[y, -y, \frac{1}{2}]$                            | [23,111] |
| 24  | $[-y, \frac{3}{4}, \frac{1}{4} - y]$              | [24,60]  |
| 25  | $[\frac{1}{4}, -y, \frac{3}{4} - y]$              | [25,133] |
| 26  | $[\frac{1}{2}, y + \frac{1}{4}, \frac{1}{4} - y]$ | [26,130] |

continued ...

Table 9

| No. | position  | mapping   |
|-----|---|-----------|
| 27  | $[\frac{1}{2}, -y, y]$                            | [27, 129] |
| 28  | $[-y, \frac{1}{4} - y, \frac{3}{4}]$              | [28, 90]  |
| 29  | $[y + \frac{1}{4}, \frac{1}{4} - y, \frac{1}{2}]$ | [29, 91]  |
| 30  | $[y, \frac{1}{2}, -y]$                            | [30, 188] |
| 31  | $[\frac{1}{4} - y, \frac{3}{4}, -y]$              | [31, 185] |
| 32  | $[\frac{1}{4}, y + \frac{1}{4}, y + \frac{1}{2}]$ | [32, 134] |
| 33  | $[0, -y, y + \frac{1}{2}]$                        | [33, 123] |
| 34  | $[0, y + \frac{1}{4}, \frac{3}{4} - y]$           | [34, 122] |
| 35  | $[\frac{1}{4} - y, \frac{1}{2}, y + \frac{1}{4}]$ | [35, 190] |
| 36  | $[y, \frac{3}{4}, y + \frac{1}{4}]$               | [36, 192] |
| 37  | $[\frac{3}{4}, -y, \frac{1}{4} - y]$              | [37, 121] |
| 38  | $[\frac{3}{4}, y + \frac{1}{4}, y]$               | [38, 128] |
| 39  | $[-y, y, \frac{1}{2}]$                            | [39, 95]  |
| 40  | $[y + \frac{1}{4}, y, \frac{3}{4}]$               | [40, 93]  |
| 41  | $[\frac{3}{4} - y, \frac{1}{4}, -y]$              | [41, 175] |
| 42  | $[-y, \frac{3}{4} - y, \frac{1}{4}]$              | [42, 76]  |
| 43  | $[y + \frac{1}{4}, \frac{3}{4} - y, 0]$           | [43, 77]  |
| 44  | $[y + \frac{1}{2}, 0, -y]$                        | [44, 174] |
| 45  | $[y + \frac{1}{4}, y + \frac{1}{2}, \frac{1}{4}]$ | [45, 88]  |
| 46  | $[\frac{3}{4} - y, 0, y + \frac{1}{4}]$           | [46, 179] |
| 47  | $[-y, y + \frac{1}{2}, 0]$                        | [47, 87]  |
| 48  | $[y + \frac{1}{2}, \frac{1}{4}, y + \frac{1}{4}]$ | [48, 180] |
| 49  | $[\frac{3}{4}, y + \frac{1}{2}, y + \frac{3}{4}]$ | [49, 109] |
| 50  | $[0, \frac{1}{4} - y, y + \frac{3}{4}]$           | [50, 106] |
| 51  | $[0, y, \frac{1}{2} - y]$                         | [51, 105] |
| 52  | $[y + \frac{1}{2}, y + \frac{3}{4}, \frac{3}{4}]$ | [52, 162] |
| 53  | $[\frac{3}{4} - y, y + \frac{3}{4}, \frac{1}{2}]$ | [53, 163] |
| 54  | $[\frac{3}{4}, \frac{3}{4} - y, \frac{1}{2} - y]$ | [56, 110] |
| 55  | $[\frac{1}{2}, y + \frac{1}{2}, \frac{1}{2} - y]$ | [57, 99]  |
| 56  | $[\frac{1}{2}, \frac{3}{4} - y, y + \frac{3}{4}]$ | [58, 98]  |
| 57  | $[\frac{1}{4}, y, y + \frac{3}{4}]$               | [61, 97]  |
| 58  | $[\frac{1}{4}, \frac{1}{4} - y, \frac{1}{2} - y]$ | [62, 104] |
| 59  | $[y + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{2}]$ | [63, 167] |
| 60  | $[\frac{3}{4} - y, \frac{1}{2} - y, \frac{3}{4}]$ | [64, 165] |
| 61  | $[y, y + \frac{3}{4}, \frac{1}{4}]$               | [66, 148] |
| 62  | $[\frac{1}{4} - y, y + \frac{3}{4}, 0]$           | [67, 149] |
| 63  | $[\frac{1}{4} - y, \frac{1}{2} - y, \frac{1}{4}]$ | [69, 160] |
| 64  | $[y, \frac{1}{2} - y, 0]$                         | [71, 159] |
| 65  | $[\frac{1}{4}, \frac{1}{2} - y, \frac{1}{4} - y]$ | [73, 181] |
| 66  | $[\frac{1}{2}, y + \frac{3}{4}, \frac{3}{4} - y]$ | [74, 178] |
| 67  | $[\frac{1}{2}, \frac{1}{2} - y, y + \frac{1}{2}]$ | [75, 177] |
| 68  | $[y, 0, \frac{1}{2} - y]$                         | [78, 140] |
| 69  | $[\frac{1}{4} - y, \frac{1}{4}, \frac{1}{2} - y]$ | [79, 137] |
| 70  | $[\frac{1}{4}, y + \frac{3}{4}, y]$               | [80, 182] |
| 71  | $[0, \frac{1}{2} - y, y]$                         | [81, 171] |
| 72  | $[0, y + \frac{3}{4}, \frac{1}{4} - y]$           | [82, 170] |
| 73  | $[\frac{1}{4} - y, 0, y + \frac{3}{4}]$           | [83, 142] |

continued ...

Table 9

| No. | position  | mapping    |
|-----|---|------------|
| 74  | $[y, \frac{1}{4}, y + \frac{3}{4}]$               | [84, 144]  |
| 75  | $[\frac{3}{4}, \frac{1}{2} - y, \frac{3}{4} - y]$ | [85, 169]  |
| 76  | $[\frac{3}{4}, y + \frac{3}{4}, y + \frac{1}{2}]$ | [86, 176]  |
| 77  | $[\frac{3}{4} - y, \frac{3}{4}, \frac{1}{2} - y]$ | [89, 127]  |
| 78  | $[y + \frac{1}{2}, \frac{1}{2}, \frac{1}{2} - y]$ | [92, 126]  |
| 79  | $[\frac{3}{4} - y, \frac{1}{2}, y + \frac{3}{4}]$ | [94, 131]  |
| 80  | $[y + \frac{1}{2}, \frac{3}{4}, y + \frac{3}{4}]$ | [96, 132]  |
| 81  | $[\frac{1}{2} - y, 0, y]$                         | [102, 164] |
| 82  | $[y + \frac{3}{4}, \frac{1}{4}, y]$               | [103, 161] |
| 83  | $[y + \frac{3}{4}, 0, \frac{1}{4} - y]$           | [107, 166] |
| 84  | $[\frac{1}{2} - y, \frac{1}{4}, \frac{1}{4} - y]$ | [108, 168] |
| 85  | $[y + \frac{3}{4}, \frac{3}{4}, y + \frac{1}{2}]$ | [113, 151] |
| 86  | $[\frac{1}{2} - y, \frac{1}{2}, y + \frac{1}{2}]$ | [116, 150] |
| 87  | $[y + \frac{3}{4}, \frac{1}{2}, \frac{3}{4} - y]$ | [118, 155] |
| 88  | $[\frac{1}{2} - y, \frac{3}{4}, \frac{3}{4} - y]$ | [120, 156] |
| 89  | $[\frac{1}{2} - y, \frac{1}{4} - y, \frac{1}{4}]$ | [124, 186] |
| 90  | $[y + \frac{3}{4}, \frac{1}{4} - y, 0]$           | [125, 187] |
| 91  | $[\frac{1}{2} - y, y, 0]$                         | [135, 191] |
| 92  | $[y + \frac{3}{4}, y, \frac{1}{4}]$               | [136, 189] |
| 93  | $[\frac{1}{2} - y, \frac{3}{4} - y, \frac{3}{4}]$ | [138, 172] |
| 94  | $[y + \frac{3}{4}, \frac{3}{4} - y, \frac{1}{2}]$ | [139, 173] |
| 95  | $[y + \frac{3}{4}, y + \frac{1}{2}, \frac{3}{4}]$ | [141, 184] |
| 96  | $[\frac{1}{2} - y, y + \frac{1}{2}, \frac{1}{2}]$ | [143, 183] |
| 97  | $[\frac{3}{4}, y, y + \frac{3}{4}]$               | [193, 349] |
| 98  | $[0, \frac{3}{4} - y, y + \frac{3}{4}]$           | [194, 346] |
| 99  | $[0, y + \frac{1}{2}, \frac{1}{2} - y]$           | [195, 345] |
| 100 | $[y + \frac{1}{2}, y + \frac{1}{4}, \frac{3}{4}]$ | [196, 306] |
| 101 | $[\frac{3}{4} - y, y + \frac{1}{4}, \frac{1}{2}]$ | [197, 307] |
| 102 | $[-y, 0, y]$                                      | [198, 260] |
| 103 | $[y + \frac{1}{4}, \frac{1}{4}, y]$               | [199, 257] |
| 104 | $[\frac{3}{4}, \frac{1}{4} - y, \frac{1}{2} - y]$ | [200, 350] |
| 105 | $[\frac{1}{2}, y, \frac{1}{2} - y]$               | [201, 339] |
| 106 | $[\frac{1}{2}, \frac{1}{4} - y, y + \frac{3}{4}]$ | [202, 338] |
| 107 | $[y + \frac{1}{4}, 0, \frac{1}{4} - y]$           | [203, 262] |
| 108 | $[-y, \frac{1}{4}, \frac{1}{4} - y]$              | [204, 264] |
| 109 | $[\frac{1}{4}, y + \frac{1}{2}, y + \frac{3}{4}]$ | [205, 337] |
| 110 | $[\frac{1}{4}, \frac{3}{4} - y, \frac{1}{2} - y]$ | [206, 344] |
| 111 | $[y + \frac{1}{2}, -y, \frac{1}{2}]$              | [207, 311] |
| 112 | $[\frac{3}{4} - y, -y, \frac{3}{4}]$              | [208, 309] |
| 113 | $[y + \frac{1}{4}, \frac{3}{4}, y + \frac{1}{2}]$ | [209, 247] |
| 114 | $[y, y + \frac{1}{4}, \frac{1}{4}]$               | [210, 292] |
| 115 | $[\frac{1}{4} - y, y + \frac{1}{4}, 0]$           | [211, 293] |
| 116 | $[-y, \frac{1}{2}, y + \frac{1}{2}]$              | [212, 246] |
| 117 | $[\frac{1}{4} - y, -y, \frac{1}{4}]$              | [213, 304] |
| 118 | $[y + \frac{1}{4}, \frac{1}{2}, \frac{3}{4} - y]$ | [214, 251] |
| 119 | $[y, -y, 0]$                                      | [215, 303] |
| 120 | $[-y, \frac{3}{4}, \frac{3}{4} - y]$              | [216, 252] |

continued ...



Table 9

| No. | position  | mapping    |
|-----|---|------------|
| 121 | $[\frac{1}{4}, -y, \frac{1}{4} - y]$              | [217, 325] |
| 122 | $[\frac{1}{2}, y + \frac{1}{4}, \frac{3}{4} - y]$ | [218, 322] |
| 123 | $[\frac{1}{2}, -y, y + \frac{1}{2}]$              | [219, 321] |
| 124 | $[-y, \frac{1}{4} - y, \frac{1}{4}]$              | [220, 282] |
| 125 | $[y + \frac{1}{4}, \frac{1}{4} - y, 0]$           | [221, 283] |
| 126 | $[y, \frac{1}{2}, \frac{1}{2} - y]$               | [222, 380] |
| 127 | $[\frac{1}{4} - y, \frac{3}{4}, \frac{1}{2} - y]$ | [223, 377] |
| 128 | $[\frac{1}{4}, y + \frac{1}{4}, y]$               | [224, 326] |
| 129 | $[0, -y, y]$                                      | [225, 315] |
| 130 | $[0, y + \frac{1}{4}, \frac{1}{4} - y]$           | [226, 314] |
| 131 | $[\frac{1}{4} - y, \frac{1}{2}, y + \frac{3}{4}]$ | [227, 382] |
| 132 | $[y, \frac{3}{4}, y + \frac{3}{4}]$               | [228, 384] |
| 133 | $[\frac{3}{4}, -y, \frac{3}{4} - y]$              | [229, 313] |
| 134 | $[\frac{3}{4}, y + \frac{1}{4}, y + \frac{1}{2}]$ | [230, 320] |
| 135 | $[-y, y, 0]$                                      | [231, 287] |
| 136 | $[y + \frac{1}{4}, y, \frac{1}{4}]$               | [232, 285] |
| 137 | $[\frac{3}{4} - y, \frac{1}{4}, \frac{1}{2} - y]$ | [233, 367] |
| 138 | $[-y, \frac{3}{4} - y, \frac{3}{4}]$              | [234, 268] |
| 139 | $[y + \frac{1}{4}, \frac{3}{4} - y, \frac{1}{2}]$ | [235, 269] |
| 140 | $[y + \frac{1}{2}, 0, \frac{1}{2} - y]$           | [236, 366] |
| 141 | $[y + \frac{1}{4}, y + \frac{1}{2}, \frac{3}{4}]$ | [237, 280] |
| 142 | $[\frac{3}{4} - y, 0, y + \frac{3}{4}]$           | [238, 371] |
| 143 | $[-y, y + \frac{1}{2}, \frac{1}{2}]$              | [239, 279] |
| 144 | $[y + \frac{1}{2}, \frac{1}{4}, y + \frac{3}{4}]$ | [240, 372] |
| 145 | $[\frac{3}{4}, y + \frac{1}{2}, y + \frac{1}{4}]$ | [241, 301] |
| 146 | $[0, \frac{1}{4} - y, y + \frac{1}{4}]$           | [242, 298] |
| 147 | $[0, y, -y]$                                      | [243, 297] |
| 148 | $[y + \frac{1}{2}, y + \frac{3}{4}, \frac{1}{4}]$ | [244, 354] |
| 149 | $[\frac{3}{4} - y, y + \frac{3}{4}, 0]$           | [245, 355] |
| 150 | $[\frac{3}{4}, \frac{3}{4} - y, -y]$              | [248, 302] |
| 151 | $[\frac{1}{2}, y + \frac{1}{2}, -y]$              | [249, 291] |
| 152 | $[\frac{1}{2}, \frac{3}{4} - y, y + \frac{1}{4}]$ | [250, 290] |
| 153 | $[\frac{1}{4}, y, y + \frac{1}{4}]$               | [253, 289] |
| 154 | $[\frac{1}{4}, \frac{1}{4} - y, -y]$              | [254, 296] |
| 155 | $[y + \frac{1}{2}, \frac{1}{2} - y, 0]$           | [255, 359] |
| 156 | $[\frac{3}{4} - y, \frac{1}{2} - y, \frac{1}{4}]$ | [256, 357] |
| 157 | $[y, y + \frac{3}{4}, \frac{3}{4}]$               | [258, 340] |
| 158 | $[\frac{1}{4} - y, y + \frac{3}{4}, \frac{1}{2}]$ | [259, 341] |
| 159 | $[\frac{1}{4} - y, \frac{1}{2} - y, \frac{3}{4}]$ | [261, 352] |
| 160 | $[y, \frac{1}{2} - y, \frac{1}{2}]$               | [263, 351] |
| 161 | $[\frac{1}{4}, \frac{1}{2} - y, \frac{3}{4} - y]$ | [265, 373] |
| 162 | $[\frac{1}{2}, y + \frac{3}{4}, \frac{1}{4} - y]$ | [266, 370] |
| 163 | $[\frac{1}{2}, \frac{1}{2} - y, y]$               | [267, 369] |
| 164 | $[y, 0, -y]$                                      | [270, 332] |
| 165 | $[\frac{1}{4} - y, \frac{1}{4}, -y]$              | [271, 329] |
| 166 | $[\frac{1}{4}, y + \frac{3}{4}, y + \frac{1}{2}]$ | [272, 374] |
| 167 | $[0, \frac{1}{2} - y, y + \frac{1}{2}]$           | [273, 363] |

continued ...

Table 9

| No. | position  | mapping    |
|-----|---|------------|
| 168 | $[0, y + \frac{3}{4}, \frac{3}{4} - y]$           | [274, 362] |
| 169 | $[\frac{1}{4} - y, 0, y + \frac{1}{4}]$           | [275, 334] |
| 170 | $[y, \frac{1}{4}, y + \frac{1}{4}]$               | [276, 336] |
| 171 | $[\frac{3}{4}, \frac{1}{2} - y, \frac{1}{4} - y]$ | [277, 361] |
| 172 | $[\frac{3}{4}, y + \frac{3}{4}, y]$               | [278, 368] |
| 173 | $[\frac{3}{4} - y, \frac{3}{4}, -y]$              | [281, 319] |
| 174 | $[y + \frac{1}{2}, \frac{1}{2}, -y]$              | [284, 318] |
| 175 | $[\frac{3}{4} - y, \frac{1}{2}, y + \frac{1}{4}]$ | [286, 323] |
| 176 | $[y + \frac{1}{2}, \frac{3}{4}, y + \frac{1}{4}]$ | [288, 324] |
| 177 | $[\frac{1}{2} - y, 0, y + \frac{1}{2}]$           | [294, 356] |
| 178 | $[y + \frac{3}{4}, \frac{1}{4}, y + \frac{1}{2}]$ | [295, 353] |
| 179 | $[y + \frac{3}{4}, 0, \frac{3}{4} - y]$           | [299, 358] |
| 180 | $[\frac{1}{2} - y, \frac{1}{4}, \frac{3}{4} - y]$ | [300, 360] |
| 181 | $[y + \frac{3}{4}, \frac{3}{4}, y]$               | [305, 343] |
| 182 | $[\frac{1}{2} - y, \frac{1}{2}, y]$               | [308, 342] |
| 183 | $[y + \frac{3}{4}, \frac{1}{2}, \frac{1}{4} - y]$ | [310, 347] |
| 184 | $[\frac{1}{2} - y, \frac{3}{4}, \frac{1}{4} - y]$ | [312, 348] |
| 185 | $[\frac{1}{2} - y, \frac{1}{4} - y, \frac{3}{4}]$ | [316, 378] |
| 186 | $[y + \frac{3}{4}, \frac{1}{4} - y, \frac{1}{2}]$ | [317, 379] |
| 187 | $[\frac{1}{2} - y, y, \frac{1}{2}]$               | [327, 383] |
| 188 | $[y + \frac{3}{4}, y, \frac{3}{4}]$               | [328, 381] |
| 189 | $[\frac{1}{2} - y, \frac{3}{4} - y, \frac{1}{4}]$ | [330, 364] |
| 190 | $[y + \frac{3}{4}, \frac{3}{4} - y, 0]$           | [331, 365] |
| 191 | $[y + \frac{3}{4}, y + \frac{1}{2}, \frac{1}{4}]$ | [333, 376] |
| 192 | $[\frac{1}{2} - y, y + \frac{1}{2}, 0]$           | [335, 375] |

Table 10: Wyckoff site: 192j, site symmetry:  $\dots 2'$ 

| No. | position  | mapping   |
|-----|---|-----------|
| 1   | $[\frac{3}{4}, y, -y]$                            | [1, 302]  |
| 2   | $[0, y, y + \frac{1}{4}]$                         | [2, 297]  |
| 3   | $[0, \frac{1}{4} - y, -y]$                        | [3, 298]  |
| 4   | $[\frac{1}{4} - y, y + \frac{1}{4}, \frac{1}{4}]$ | [4, 213]  |
| 5   | $[y, y + \frac{1}{4}, 0]$                         | [5, 215]  |
| 6   | $[-y, 0, \frac{1}{4} - y]$                        | [6, 262]  |
| 7   | $[y + \frac{1}{4}, \frac{1}{4}, \frac{1}{4} - y]$ | [7, 264]  |
| 8   | $[\frac{3}{4}, \frac{1}{4} - y, y + \frac{1}{4}]$ | [8, 301]  |
| 9   | $[\frac{1}{2}, y, y + \frac{1}{4}]$               | [9, 290]  |
| 10  | $[\frac{1}{2}, \frac{1}{4} - y, -y]$              | [10, 291] |
| 11  | $[y + \frac{1}{4}, 0, y]$                         | [11, 260] |
| 12  | $[-y, \frac{1}{4}, y]$                            | [12, 257] |
| 13  | $[\frac{1}{4}, \frac{1}{4} - y, y + \frac{1}{4}]$ | [13, 296] |
| 14  | $[\frac{1}{4}, y, -y]$                            | [14, 289] |
| 15  | $[\frac{1}{4} - y, -y, 0]$                        | [15, 211] |

*continued ...*

Table 10

| No. | position  | mapping   |
|-----|---|-----------|
| 16  | $[y, -y, \frac{1}{4}]$                            | [16, 210] |
| 17  | $[-y, \frac{3}{4}, y]$                            | [17, 252] |
| 18  | $[y, -y, \frac{3}{4}]$                            | [18, 208] |
| 19  | $[\frac{1}{4} - y, -y, \frac{1}{2}]$              | [19, 207] |
| 20  | $[y + \frac{1}{4}, \frac{1}{2}, y]$               | [20, 251] |
| 21  | $[\frac{1}{4} - y, y + \frac{1}{4}, \frac{3}{4}]$ | [21, 196] |
| 22  | $[-y, \frac{1}{2}, \frac{1}{4} - y]$              | [22, 246] |
| 23  | $[y, y + \frac{1}{4}, \frac{1}{2}]$               | [23, 197] |
| 24  | $[y + \frac{1}{4}, \frac{3}{4}, \frac{1}{4} - y]$ | [24, 247] |
| 25  | $[\frac{1}{4}, -y, y]$                            | [25, 326] |
| 26  | $[\frac{1}{2}, -y, \frac{1}{4} - y]$              | [26, 321] |
| 27  | $[\frac{1}{2}, y + \frac{1}{4}, y]$               | [27, 322] |
| 28  | $[y + \frac{1}{4}, \frac{1}{4} - y, \frac{3}{4}]$ | [28, 237] |
| 29  | $[-y, \frac{1}{4} - y, \frac{1}{2}]$              | [29, 239] |
| 30  | $[y, \frac{1}{2}, y + \frac{1}{4}]$               | [30, 286] |
| 31  | $[\frac{1}{4} - y, \frac{3}{4}, y + \frac{1}{4}]$ | [31, 288] |
| 32  | $[\frac{1}{4}, y + \frac{1}{4}, \frac{1}{4} - y]$ | [32, 325] |
| 33  | $[0, -y, \frac{1}{4} - y]$                        | [33, 314] |
| 34  | $[0, y + \frac{1}{4}, y]$                         | [34, 315] |
| 35  | $[\frac{1}{4} - y, \frac{1}{2}, -y]$              | [35, 284] |
| 36  | $[y, \frac{3}{4}, -y]$                            | [36, 281] |
| 37  | $[\frac{3}{4}, y + \frac{1}{4}, \frac{1}{4} - y]$ | [37, 320] |
| 38  | $[\frac{3}{4}, -y, y]$                            | [38, 313] |
| 39  | $[y + \frac{1}{4}, y, \frac{1}{2}]$               | [39, 235] |
| 40  | $[-y, y, \frac{3}{4}]$                            | [40, 234] |
| 41  | $[y, \frac{1}{4}, -y]$                            | [41, 276] |
| 42  | $[-y, y, \frac{1}{4}]$                            | [42, 232] |
| 43  | $[y + \frac{1}{4}, y, 0]$                         | [43, 231] |
| 44  | $[\frac{1}{4} - y, 0, -y]$                        | [44, 275] |
| 45  | $[y + \frac{1}{4}, \frac{1}{4} - y, \frac{1}{4}]$ | [45, 220] |
| 46  | $[y, 0, y + \frac{1}{4}]$                         | [46, 270] |
| 47  | $[-y, \frac{1}{4} - y, 0]$                        | [47, 221] |
| 48  | $[\frac{1}{4} - y, \frac{1}{4}, y + \frac{1}{4}]$ | [48, 271] |
| 49  | $[\frac{3}{4}, y + \frac{1}{2}, \frac{1}{2} - y]$ | [49, 350] |
| 50  | $[0, y + \frac{1}{2}, y + \frac{3}{4}]$           | [50, 345] |
| 51  | $[0, \frac{3}{4} - y, \frac{1}{2} - y]$           | [51, 346] |
| 52  | $[\frac{1}{4} - y, y + \frac{3}{4}, \frac{3}{4}]$ | [52, 261] |
| 53  | $[y, y + \frac{3}{4}, \frac{1}{2}]$               | [53, 263] |
| 54  | $[-y, \frac{1}{2}, \frac{3}{4} - y]$              | [54, 214] |
| 55  | $[y + \frac{1}{4}, \frac{3}{4}, \frac{3}{4} - y]$ | [55, 216] |
| 56  | $[\frac{3}{4}, \frac{3}{4} - y, y + \frac{3}{4}]$ | [56, 349] |
| 57  | $[\frac{1}{2}, y + \frac{1}{2}, y + \frac{3}{4}]$ | [57, 338] |
| 58  | $[\frac{1}{2}, \frac{3}{4} - y, \frac{1}{2} - y]$ | [58, 339] |
| 59  | $[y + \frac{1}{4}, \frac{1}{2}, y + \frac{1}{2}]$ | [59, 212] |
| 60  | $[-y, \frac{3}{4}, y + \frac{1}{2}]$              | [60, 209] |
| 61  | $[\frac{1}{4}, \frac{3}{4} - y, y + \frac{3}{4}]$ | [61, 344] |
| 62  | $[\frac{1}{4}, y + \frac{1}{2}, \frac{1}{2} - y]$ | [62, 337] |

continued ...

Table 10

| No. | position  | mapping    |
|-----|---|------------|
| 63  | $[\frac{1}{4} - y, \frac{1}{2} - y, \frac{1}{2}]$ | [63, 259]  |
| 64  | $[y, \frac{1}{2} - y, \frac{3}{4}]$               | [64, 258]  |
| 65  | $[-y, \frac{1}{4}, y + \frac{1}{2}]$              | [65, 204]  |
| 66  | $[y, \frac{1}{2} - y, \frac{1}{4}]$               | [66, 256]  |
| 67  | $[\frac{1}{4} - y, \frac{1}{2} - y, 0]$           | [67, 255]  |
| 68  | $[y + \frac{1}{4}, 0, y + \frac{1}{2}]$           | [68, 203]  |
| 69  | $[\frac{1}{4} - y, y + \frac{3}{4}, \frac{1}{4}]$ | [69, 244]  |
| 70  | $[-y, 0, \frac{3}{4} - y]$                        | [70, 198]  |
| 71  | $[y, y + \frac{3}{4}, 0]$                         | [71, 245]  |
| 72  | $[y + \frac{1}{4}, \frac{1}{4}, \frac{3}{4} - y]$ | [72, 199]  |
| 73  | $[\frac{1}{4}, \frac{1}{2} - y, y + \frac{1}{2}]$ | [73, 374]  |
| 74  | $[\frac{1}{2}, \frac{1}{2} - y, \frac{3}{4} - y]$ | [74, 369]  |
| 75  | $[\frac{1}{2}, y + \frac{3}{4}, y + \frac{1}{2}]$ | [75, 370]  |
| 76  | $[y + \frac{1}{4}, \frac{3}{4} - y, \frac{1}{4}]$ | [76, 285]  |
| 77  | $[-y, \frac{3}{4} - y, 0]$                        | [77, 287]  |
| 78  | $[y, 0, y + \frac{3}{4}]$                         | [78, 238]  |
| 79  | $[\frac{1}{4} - y, \frac{1}{4}, y + \frac{3}{4}]$ | [79, 240]  |
| 80  | $[\frac{1}{4}, y + \frac{3}{4}, \frac{3}{4} - y]$ | [80, 373]  |
| 81  | $[0, \frac{1}{2} - y, \frac{3}{4} - y]$           | [81, 362]  |
| 82  | $[0, y + \frac{3}{4}, y + \frac{1}{2}]$           | [82, 363]  |
| 83  | $[\frac{1}{4} - y, 0, \frac{1}{2} - y]$           | [83, 236]  |
| 84  | $[y, \frac{1}{4}, \frac{1}{2} - y]$               | [84, 233]  |
| 85  | $[\frac{3}{4}, y + \frac{3}{4}, \frac{3}{4} - y]$ | [85, 368]  |
| 86  | $[\frac{3}{4}, \frac{1}{2} - y, y + \frac{1}{2}]$ | [86, 361]  |
| 87  | $[y + \frac{1}{4}, y + \frac{1}{2}, 0]$           | [87, 283]  |
| 88  | $[-y, y + \frac{1}{2}, \frac{1}{4}]$              | [88, 282]  |
| 89  | $[y, \frac{3}{4}, \frac{1}{2} - y]$               | [89, 228]  |
| 90  | $[-y, y + \frac{1}{2}, \frac{3}{4}]$              | [90, 280]  |
| 91  | $[y + \frac{1}{4}, y + \frac{1}{2}, \frac{1}{2}]$ | [91, 279]  |
| 92  | $[\frac{1}{4} - y, \frac{1}{2}, \frac{1}{2} - y]$ | [92, 227]  |
| 93  | $[y + \frac{1}{4}, \frac{3}{4} - y, \frac{3}{4}]$ | [93, 268]  |
| 94  | $[y, \frac{1}{2}, y + \frac{3}{4}]$               | [94, 222]  |
| 95  | $[-y, \frac{3}{4} - y, \frac{1}{2}]$              | [95, 269]  |
| 96  | $[\frac{1}{4} - y, \frac{3}{4}, y + \frac{3}{4}]$ | [96, 223]  |
| 97  | $[\frac{1}{4}, y, \frac{1}{2} - y]$               | [97, 206]  |
| 98  | $[\frac{1}{2}, y, y + \frac{3}{4}]$               | [98, 201]  |
| 99  | $[\frac{1}{2}, \frac{1}{4} - y, \frac{1}{2} - y]$ | [99, 202]  |
| 100 | $[\frac{3}{4} - y, y + \frac{1}{4}, \frac{3}{4}]$ | [100, 309] |
| 101 | $[y + \frac{1}{2}, y + \frac{1}{4}, \frac{1}{2}]$ | [101, 311] |
| 102 | $[\frac{1}{2} - y, 0, \frac{3}{4} - y]$           | [102, 358] |
| 103 | $[y + \frac{3}{4}, \frac{1}{4}, \frac{3}{4} - y]$ | [103, 360] |
| 104 | $[\frac{1}{4}, \frac{1}{4} - y, y + \frac{3}{4}]$ | [104, 205] |
| 105 | $[0, y, y + \frac{3}{4}]$                         | [105, 194] |
| 106 | $[0, \frac{1}{4} - y, \frac{1}{2} - y]$           | [106, 195] |
| 107 | $[y + \frac{3}{4}, 0, y + \frac{1}{2}]$           | [107, 356] |
| 108 | $[\frac{1}{2} - y, \frac{1}{4}, y + \frac{1}{2}]$ | [108, 353] |
| 109 | $[\frac{3}{4}, \frac{1}{4} - y, y + \frac{3}{4}]$ | [109, 200] |

continued ...

Table 10

| No. | position  | mapping    |
|-----|---|------------|
| 110 | $[\frac{3}{4}, y, \frac{1}{2} - y]$               | [110, 193] |
| 111 | $[\frac{3}{4} - y, -y, \frac{1}{2}]$              | [111, 307] |
| 112 | $[y + \frac{1}{2}, -y, \frac{3}{4}]$              | [112, 306] |
| 113 | $[\frac{1}{2} - y, \frac{3}{4}, y + \frac{1}{2}]$ | [113, 348] |
| 114 | $[y + \frac{1}{2}, -y, \frac{1}{4}]$              | [114, 304] |
| 115 | $[\frac{3}{4} - y, -y, 0]$                        | [115, 303] |
| 116 | $[y + \frac{3}{4}, \frac{1}{2}, y + \frac{1}{2}]$ | [116, 347] |
| 117 | $[\frac{3}{4} - y, y + \frac{1}{4}, \frac{1}{4}]$ | [117, 292] |
| 118 | $[\frac{1}{2} - y, \frac{1}{2}, \frac{3}{4} - y]$ | [118, 342] |
| 119 | $[y + \frac{1}{2}, y + \frac{1}{4}, 0]$           | [119, 293] |
| 120 | $[y + \frac{3}{4}, \frac{3}{4}, \frac{3}{4} - y]$ | [120, 343] |
| 121 | $[\frac{3}{4}, -y, y + \frac{1}{2}]$              | [121, 230] |
| 122 | $[0, -y, \frac{3}{4} - y]$                        | [122, 225] |
| 123 | $[0, y + \frac{1}{4}, y + \frac{1}{2}]$           | [123, 226] |
| 124 | $[y + \frac{3}{4}, \frac{1}{4} - y, \frac{1}{4}]$ | [124, 333] |
| 125 | $[\frac{1}{2} - y, \frac{1}{4} - y, 0]$           | [125, 335] |
| 126 | $[y + \frac{1}{2}, \frac{1}{2}, y + \frac{3}{4}]$ | [126, 382] |
| 127 | $[\frac{3}{4} - y, \frac{3}{4}, y + \frac{3}{4}]$ | [127, 384] |
| 128 | $[\frac{3}{4}, y + \frac{1}{4}, \frac{3}{4} - y]$ | [128, 229] |
| 129 | $[\frac{1}{2}, -y, \frac{3}{4} - y]$              | [129, 218] |
| 130 | $[\frac{1}{2}, y + \frac{1}{4}, y + \frac{1}{2}]$ | [130, 219] |
| 131 | $[\frac{3}{4} - y, \frac{1}{2}, \frac{1}{2} - y]$ | [131, 380] |
| 132 | $[y + \frac{1}{2}, \frac{3}{4}, \frac{1}{2} - y]$ | [132, 377] |
| 133 | $[\frac{1}{4}, y + \frac{1}{4}, \frac{3}{4} - y]$ | [133, 224] |
| 134 | $[\frac{1}{4}, -y, y + \frac{1}{2}]$              | [134, 217] |
| 135 | $[y + \frac{3}{4}, y, 0]$                         | [135, 331] |
| 136 | $[\frac{1}{2} - y, y, \frac{1}{4}]$               | [136, 330] |
| 137 | $[y + \frac{1}{2}, \frac{1}{4}, \frac{1}{2} - y]$ | [137, 372] |
| 138 | $[\frac{1}{2} - y, y, \frac{3}{4}]$               | [138, 328] |
| 139 | $[y + \frac{3}{4}, y, \frac{1}{2}]$               | [139, 327] |
| 140 | $[\frac{3}{4} - y, 0, \frac{1}{2} - y]$           | [140, 371] |
| 141 | $[y + \frac{3}{4}, \frac{1}{4} - y, \frac{3}{4}]$ | [141, 316] |
| 142 | $[y + \frac{1}{2}, 0, y + \frac{3}{4}]$           | [142, 366] |
| 143 | $[\frac{1}{2} - y, \frac{1}{4} - y, \frac{1}{2}]$ | [143, 317] |
| 144 | $[\frac{3}{4} - y, \frac{1}{4}, y + \frac{3}{4}]$ | [144, 367] |
| 145 | $[\frac{1}{4}, y + \frac{1}{2}, -y]$              | [145, 254] |
| 146 | $[\frac{1}{2}, y + \frac{1}{2}, y + \frac{1}{4}]$ | [146, 249] |
| 147 | $[\frac{1}{2}, \frac{3}{4} - y, -y]$              | [147, 250] |
| 148 | $[\frac{3}{4} - y, y + \frac{3}{4}, \frac{1}{4}]$ | [148, 357] |
| 149 | $[y + \frac{1}{2}, y + \frac{3}{4}, 0]$           | [149, 359] |
| 150 | $[\frac{1}{2} - y, \frac{1}{2}, \frac{1}{4} - y]$ | [150, 310] |
| 151 | $[y + \frac{3}{4}, \frac{3}{4}, \frac{1}{4} - y]$ | [151, 312] |
| 152 | $[\frac{1}{4}, \frac{3}{4} - y, y + \frac{1}{4}]$ | [152, 253] |
| 153 | $[0, y + \frac{1}{2}, y + \frac{1}{4}]$           | [153, 242] |
| 154 | $[0, \frac{3}{4} - y, -y]$                        | [154, 243] |
| 155 | $[y + \frac{3}{4}, \frac{1}{2}, y]$               | [155, 308] |
| 156 | $[\frac{1}{2} - y, \frac{3}{4}, y]$               | [156, 305] |

continued ...

Table 10

| No. | position  | mapping   |
|-----|---|-----------|
| 157 | $[\frac{3}{4}, \frac{3}{4} - y, y + \frac{1}{4}]$ | [157,248] |
| 158 | $[\frac{3}{4}, y + \frac{1}{2}, -y]$              | [158,241] |
| 159 | $[\frac{3}{4} - y, \frac{1}{2} - y, 0]$           | [159,355] |
| 160 | $[y + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{4}]$ | [160,354] |
| 161 | $[\frac{1}{2} - y, \frac{1}{4}, y]$               | [161,300] |
| 162 | $[y + \frac{1}{2}, \frac{1}{2} - y, \frac{3}{4}]$ | [162,352] |
| 163 | $[\frac{3}{4} - y, \frac{1}{2} - y, \frac{1}{2}]$ | [163,351] |
| 164 | $[y + \frac{3}{4}, 0, y]$                         | [164,299] |
| 165 | $[\frac{3}{4} - y, y + \frac{3}{4}, \frac{3}{4}]$ | [165,340] |
| 166 | $[\frac{1}{2} - y, 0, \frac{1}{4} - y]$           | [166,294] |
| 167 | $[y + \frac{1}{2}, y + \frac{3}{4}, \frac{1}{2}]$ | [167,341] |
| 168 | $[y + \frac{3}{4}, \frac{1}{4}, \frac{1}{4} - y]$ | [168,295] |
| 169 | $[\frac{3}{4}, \frac{1}{2} - y, y]$               | [169,278] |
| 170 | $[0, \frac{1}{2} - y, \frac{1}{4} - y]$           | [170,273] |
| 171 | $[0, y + \frac{3}{4}, y]$                         | [171,274] |
| 172 | $[y + \frac{3}{4}, \frac{3}{4} - y, \frac{3}{4}]$ | [172,381] |
| 173 | $[\frac{1}{2} - y, \frac{3}{4} - y, \frac{1}{2}]$ | [173,383] |
| 174 | $[y + \frac{1}{2}, 0, y + \frac{1}{4}]$           | [174,334] |
| 175 | $[\frac{3}{4} - y, \frac{1}{4}, y + \frac{1}{4}]$ | [175,336] |
| 176 | $[\frac{3}{4}, y + \frac{3}{4}, \frac{1}{4} - y]$ | [176,277] |
| 177 | $[\frac{1}{2}, \frac{1}{2} - y, \frac{1}{4} - y]$ | [177,266] |
| 178 | $[\frac{1}{2}, y + \frac{3}{4}, y]$               | [178,267] |
| 179 | $[\frac{3}{4} - y, 0, -y]$                        | [179,332] |
| 180 | $[y + \frac{1}{2}, \frac{1}{4}, -y]$              | [180,329] |
| 181 | $[\frac{1}{4}, y + \frac{3}{4}, \frac{1}{4} - y]$ | [181,272] |
| 182 | $[\frac{1}{4}, \frac{1}{2} - y, y]$               | [182,265] |
| 183 | $[y + \frac{3}{4}, y + \frac{1}{2}, \frac{1}{2}]$ | [183,379] |
| 184 | $[\frac{1}{2} - y, y + \frac{1}{2}, \frac{3}{4}]$ | [184,378] |
| 185 | $[y + \frac{1}{2}, \frac{3}{4}, -y]$              | [185,324] |
| 186 | $[\frac{1}{2} - y, y + \frac{1}{2}, \frac{1}{4}]$ | [186,376] |
| 187 | $[y + \frac{3}{4}, y + \frac{1}{2}, 0]$           | [187,375] |
| 188 | $[\frac{3}{4} - y, \frac{1}{2}, -y]$              | [188,323] |
| 189 | $[y + \frac{3}{4}, \frac{3}{4} - y, \frac{1}{4}]$ | [189,364] |
| 190 | $[y + \frac{1}{2}, \frac{1}{2}, y + \frac{1}{4}]$ | [190,318] |
| 191 | $[\frac{1}{2} - y, \frac{3}{4} - y, 0]$           | [191,365] |
| 192 | $[\frac{3}{4} - y, \frac{3}{4}, y + \frac{1}{4}]$ | [192,319] |

Table 11: Wyckoff site: 192k, site symmetry:  $\bar{3}m$ 

| No. | position                                 | mapping |
|-----|--|---------|
| 1   | $[x, x, z]$                              | [1,36]  |
| 2   | $[x + \frac{1}{4}, -z, x + \frac{1}{4}]$ | [2,43]  |
| 3   | $[x + \frac{1}{4}, z + \frac{1}{4}, -x]$ | [3,45]  |
| 4   | $[z + \frac{1}{4}, x + \frac{1}{4}, -x]$ | [4,44]  |

*continued ...*

Table 11

| No. | position  | mapping  |
|-----|---|----------|
| 5   | $[-z, x + \frac{1}{4}, x + \frac{1}{4}]$              | [5,46]   |
| 6   | $[-x, x + \frac{1}{4}, z + \frac{1}{4}]$              | [6,32]   |
| 7   | $[x + \frac{1}{4}, -x, z + \frac{1}{4}]$              | [7,33]   |
| 8   | $[x, \frac{1}{4} - x, \frac{1}{4} - z]$               | [8,30]   |
| 9   | $[\frac{1}{4} - x, x, \frac{1}{4} - z]$               | [9,31]   |
| 10  | $[\frac{1}{4} - x, \frac{1}{4} - x, z]$               | [10,35]  |
| 11  | $[x + \frac{1}{4}, x + \frac{1}{4}, -z]$              | [11,34]  |
| 12  | $[-x, -x, -z]$  | [12,25]  |
| 13  | $[-x, z + \frac{1}{4}, x + \frac{1}{4}]$              | [13,47]  |
| 14  | $[-x, -z, -x]$  | [14,42]  |
| 15  | $[z + \frac{1}{4}, -x, x + \frac{1}{4}]$              | [15,48]  |
| 16  | $[-z, -x, -x]$  | [16,41]  |
| 17  | $[z, x, x]$   | [17,40]  |
| 18  | $[x, z, x]$   | [18,38]  |
| 19  | $[\frac{1}{4} - x, z, \frac{1}{4} - x]$               | [19,26]  |
| 20  | $[\frac{1}{4} - z, \frac{1}{4} - x, x]$               | [20,28]  |
| 21  | $[\frac{1}{4} - x, \frac{1}{4} - z, x]$               | [21,27]  |
| 22  | $[z, \frac{1}{4} - x, \frac{1}{4} - x]$               | [22,29]  |
| 23  | $[x, \frac{1}{4} - z, \frac{1}{4} - x]$               | [23,37]  |
| 24  | $[\frac{1}{4} - z, x, \frac{1}{4} - x]$               | [24,39]  |
| 25  | $[x, x + \frac{1}{2}, z + \frac{1}{2}]$               | [49,84]  |
| 26  | $[x + \frac{1}{4}, \frac{1}{2} - z, x + \frac{3}{4}]$ | [50,91]  |
| 27  | $[x + \frac{1}{4}, z + \frac{3}{4}, \frac{1}{2} - x]$ | [51,93]  |
| 28  | $[z + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - x]$ | [52,92]  |
| 29  | $[-z, x + \frac{3}{4}, x + \frac{3}{4}]$              | [53,94]  |
| 30  | $[-x, x + \frac{3}{4}, z + \frac{3}{4}]$              | [54,80]  |
| 31  | $[x + \frac{1}{4}, \frac{1}{2} - x, z + \frac{3}{4}]$ | [55,81]  |
| 32  | $[x, \frac{3}{4} - x, \frac{3}{4} - z]$               | [56,78]  |
| 33  | $[\frac{1}{4} - x, x + \frac{1}{2}, \frac{3}{4} - z]$ | [57,79]  |
| 34  | $[\frac{1}{4} - x, \frac{3}{4} - x, z + \frac{1}{2}]$ | [58,83]  |
| 35  | $[x + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - z]$ | [59,82]  |
| 36  | $[-x, \frac{1}{2} - x, \frac{1}{2} - z]$              | [60,73]  |
| 37  | $[-x, z + \frac{3}{4}, x + \frac{3}{4}]$              | [61,95]  |
| 38  | $[-x, \frac{1}{2} - z, \frac{1}{2} - x]$              | [62,90]  |
| 39  | $[z + \frac{1}{4}, \frac{1}{2} - x, x + \frac{3}{4}]$ | [63,96]  |
| 40  | $[-z, \frac{1}{2} - x, \frac{1}{2} - x]$              | [64,89]  |
| 41  | $[z, x + \frac{1}{2}, x + \frac{1}{2}]$               | [65,88]  |
| 42  | $[x, z + \frac{1}{2}, x + \frac{1}{2}]$               | [66,86]  |
| 43  | $[\frac{1}{4} - x, z + \frac{1}{2}, \frac{3}{4} - x]$ | [67,74]  |
| 44  | $[\frac{1}{4} - z, \frac{3}{4} - x, x + \frac{1}{2}]$ | [68,76]  |
| 45  | $[\frac{1}{4} - x, \frac{3}{4} - z, x + \frac{1}{2}]$ | [69,75]  |
| 46  | $[z, \frac{3}{4} - x, \frac{3}{4} - x]$               | [70,77]  |
| 47  | $[x, \frac{3}{4} - z, \frac{3}{4} - x]$               | [71,85]  |
| 48  | $[\frac{1}{4} - z, x + \frac{1}{2}, \frac{3}{4} - x]$ | [72,87]  |
| 49  | $[x + \frac{1}{2}, x, z + \frac{1}{2}]$               | [97,132] |
| 50  | $[x + \frac{3}{4}, -z, x + \frac{3}{4}]$              | [98,139] |
| 51  | $[x + \frac{3}{4}, z + \frac{1}{4}, \frac{1}{2} - x]$ | [99,141] |

continued ...

Table 11

| No. | position  | mapping   |
|-----|---|-----------|
| 52  | $[z + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - x]$ | [100,140] |
| 53  | $[\frac{1}{2} - z, x + \frac{1}{4}, x + \frac{3}{4}]$ | [101,142] |
| 54  | $[\frac{1}{2} - x, x + \frac{1}{4}, z + \frac{3}{4}]$ | [102,128] |
| 55  | $[x + \frac{3}{4}, -x, z + \frac{3}{4}]$              | [103,129] |
| 56  | $[x + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - z]$ | [104,126] |
| 57  | $[\frac{3}{4} - x, x, \frac{3}{4} - z]$               | [105,127] |
| 58  | $[\frac{3}{4} - x, \frac{1}{4} - x, z + \frac{1}{2}]$ | [106,131] |
| 59  | $[x + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - z]$ | [107,130] |
| 60  | $[\frac{1}{2} - x, -x, \frac{1}{2} - z]$              | [108,121] |
| 61  | $[\frac{1}{2} - x, z + \frac{1}{4}, x + \frac{3}{4}]$ | [109,143] |
| 62  | $[\frac{1}{2} - x, -z, \frac{1}{2} - x]$              | [110,138] |
| 63  | $[z + \frac{3}{4}, -x, x + \frac{3}{4}]$              | [111,144] |
| 64  | $[\frac{1}{2} - z, -x, \frac{1}{2} - x]$              | [112,137] |
| 65  | $[z + \frac{1}{2}, x, x + \frac{1}{2}]$               | [113,136] |
| 66  | $[x + \frac{1}{2}, z, x + \frac{1}{2}]$               | [114,134] |
| 67  | $[\frac{3}{4} - x, z, \frac{3}{4} - x]$               | [115,122] |
| 68  | $[\frac{3}{4} - z, \frac{1}{4} - x, x + \frac{1}{2}]$ | [116,124] |
| 69  | $[\frac{3}{4} - x, \frac{1}{4} - z, x + \frac{1}{2}]$ | [117,123] |
| 70  | $[z + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - x]$ | [118,125] |
| 71  | $[x + \frac{1}{2}, \frac{1}{4} - z, \frac{3}{4} - x]$ | [119,133] |
| 72  | $[\frac{3}{4} - z, x, \frac{3}{4} - x]$               | [120,135] |
| 73  | $[x + \frac{1}{2}, x + \frac{1}{2}, z]$               | [145,180] |
| 74  | $[x + \frac{3}{4}, \frac{1}{2} - z, x + \frac{1}{4}]$ | [146,187] |
| 75  | $[x + \frac{3}{4}, z + \frac{3}{4}, -x]$              | [147,189] |
| 76  | $[z + \frac{3}{4}, x + \frac{3}{4}, -x]$              | [148,188] |
| 77  | $[\frac{1}{2} - z, x + \frac{3}{4}, x + \frac{1}{4}]$ | [149,190] |
| 78  | $[\frac{1}{2} - x, x + \frac{3}{4}, z + \frac{1}{4}]$ | [150,176] |
| 79  | $[x + \frac{3}{4}, \frac{1}{2} - x, z + \frac{1}{4}]$ | [151,177] |
| 80  | $[x + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - z]$ | [152,174] |
| 81  | $[\frac{3}{4} - x, x + \frac{1}{2}, \frac{1}{4} - z]$ | [153,175] |
| 82  | $[\frac{3}{4} - x, \frac{3}{4} - x, z]$               | [154,179] |
| 83  | $[x + \frac{3}{4}, x + \frac{3}{4}, -z]$              | [155,178] |
| 84  | $[\frac{1}{2} - x, \frac{1}{2} - x, -z]$              | [156,169] |
| 85  | $[\frac{1}{2} - x, z + \frac{3}{4}, x + \frac{1}{4}]$ | [157,191] |
| 86  | $[\frac{1}{2} - x, \frac{1}{2} - z, -x]$              | [158,186] |
| 87  | $[z + \frac{3}{4}, \frac{1}{2} - x, x + \frac{1}{4}]$ | [159,192] |
| 88  | $[\frac{1}{2} - z, \frac{1}{2} - x, -x]$              | [160,185] |
| 89  | $[z + \frac{1}{2}, x + \frac{1}{2}, x]$               | [161,184] |
| 90  | $[x + \frac{1}{2}, z + \frac{1}{2}, x]$               | [162,182] |
| 91  | $[\frac{3}{4} - x, z + \frac{1}{2}, \frac{1}{4} - x]$ | [163,170] |
| 92  | $[\frac{3}{4} - z, \frac{3}{4} - x, x]$               | [164,172] |
| 93  | $[\frac{3}{4} - x, \frac{3}{4} - z, x]$               | [165,171] |
| 94  | $[z + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - x]$ | [166,173] |
| 95  | $[x + \frac{1}{2}, \frac{3}{4} - z, \frac{1}{4} - x]$ | [167,181] |
| 96  | $[\frac{3}{4} - z, x + \frac{1}{2}, \frac{1}{4} - x]$ | [168,183] |
| 97  | $[x, x, z + \frac{1}{2}]$                             | [193,228] |
| 98  | $[x + \frac{1}{4}, -z, x + \frac{3}{4}]$              | [194,235] |

continued ...



Table 11

| No. | position  | mapping    |
|-----|---|------------|
| 99  | $[x + \frac{1}{4}, z + \frac{1}{4}, \frac{1}{2} - x]$ | [195, 237] |
| 100 | $[z + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - x]$ | [196, 236] |
| 101 | $[-z, x + \frac{1}{4}, x + \frac{3}{4}]$              | [197, 238] |
| 102 | $[-x, x + \frac{1}{4}, z + \frac{3}{4}]$              | [198, 224] |
| 103 | $[x + \frac{1}{4}, -x, z + \frac{3}{4}]$              | [199, 225] |
| 104 | $[x, \frac{1}{4} - x, \frac{3}{4} - z]$               | [200, 222] |
| 105 | $[\frac{1}{4} - x, x, \frac{3}{4} - z]$               | [201, 223] |
| 106 | $[\frac{1}{4} - x, \frac{1}{4} - x, z + \frac{1}{2}]$ | [202, 227] |
| 107 | $[x + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - z]$ | [203, 226] |
| 108 | $[-x, -x, \frac{1}{2} - z]$                           | [204, 217] |
| 109 | $[-x, z + \frac{1}{4}, x + \frac{3}{4}]$              | [205, 239] |
| 110 | $[-x, -z, \frac{1}{2} - x]$                           | [206, 234] |
| 111 | $[z + \frac{1}{4}, -x, x + \frac{3}{4}]$              | [207, 240] |
| 112 | $[-z, -x, \frac{1}{2} - x]$                           | [208, 233] |
| 113 | $[z, x, x + \frac{1}{2}]$                             | [209, 232] |
| 114 | $[x, z, x + \frac{1}{2}]$                             | [210, 230] |
| 115 | $[\frac{1}{4} - x, z, \frac{3}{4} - x]$               | [211, 218] |
| 116 | $[\frac{1}{4} - z, \frac{1}{4} - x, x + \frac{1}{2}]$ | [212, 220] |
| 117 | $[\frac{1}{4} - x, \frac{1}{4} - z, x + \frac{1}{2}]$ | [213, 219] |
| 118 | $[z, \frac{1}{4} - x, \frac{3}{4} - x]$               | [214, 221] |
| 119 | $[x, \frac{1}{4} - z, \frac{3}{4} - x]$               | [215, 229] |
| 120 | $[\frac{1}{4} - z, x, \frac{3}{4} - x]$               | [216, 231] |
| 121 | $[x, x + \frac{1}{2}, z]$                             | [241, 276] |
| 122 | $[x + \frac{1}{4}, \frac{1}{2} - z, x + \frac{1}{4}]$ | [242, 283] |
| 123 | $[x + \frac{1}{4}, z + \frac{3}{4}, -x]$              | [243, 285] |
| 124 | $[z + \frac{1}{4}, x + \frac{3}{4}, -x]$              | [244, 284] |
| 125 | $[-z, x + \frac{3}{4}, x + \frac{1}{4}]$              | [245, 286] |
| 126 | $[-x, x + \frac{3}{4}, z + \frac{1}{4}]$              | [246, 272] |
| 127 | $[x + \frac{1}{4}, \frac{1}{2} - x, z + \frac{1}{4}]$ | [247, 273] |
| 128 | $[x, \frac{3}{4} - x, \frac{1}{4} - z]$               | [248, 270] |
| 129 | $[\frac{1}{4} - x, x + \frac{1}{2}, \frac{1}{4} - z]$ | [249, 271] |
| 130 | $[\frac{1}{4} - x, \frac{3}{4} - x, z]$               | [250, 275] |
| 131 | $[x + \frac{1}{4}, x + \frac{3}{4}, -z]$              | [251, 274] |
| 132 | $[-x, \frac{1}{2} - x, -z]$                           | [252, 265] |
| 133 | $[-x, z + \frac{3}{4}, x + \frac{1}{4}]$              | [253, 287] |
| 134 | $[-x, \frac{1}{2} - z, -x]$                           | [254, 282] |
| 135 | $[z + \frac{1}{4}, \frac{1}{2} - x, x + \frac{1}{4}]$ | [255, 288] |
| 136 | $[-z, \frac{1}{2} - x, -x]$                           | [256, 281] |
| 137 | $[z, x + \frac{1}{2}, x]$                             | [257, 280] |
| 138 | $[x, z + \frac{1}{2}, x]$                             | [258, 278] |
| 139 | $[\frac{1}{4} - x, z + \frac{1}{2}, \frac{1}{4} - x]$ | [259, 266] |
| 140 | $[\frac{1}{4} - z, \frac{3}{4} - x, x]$               | [260, 268] |
| 141 | $[\frac{1}{4} - x, \frac{3}{4} - z, x]$               | [261, 267] |
| 142 | $[z, \frac{3}{4} - x, \frac{1}{4} - x]$               | [262, 269] |
| 143 | $[x, \frac{3}{4} - z, \frac{1}{4} - x]$               | [263, 277] |
| 144 | $[\frac{1}{4} - z, x + \frac{1}{2}, \frac{1}{4} - x]$ | [264, 279] |
| 145 | $[x + \frac{1}{2}, x, z]$                             | [289, 324] |

continued ...

Table 11

| No. | position  | mapping   |
|-----|---|-----------|
| 146 | $[x + \frac{3}{4}, -z, x + \frac{1}{4}]$              | [290,331] |
| 147 | $[x + \frac{3}{4}, z + \frac{1}{4}, -x]$              | [291,333] |
| 148 | $[z + \frac{3}{4}, x + \frac{1}{4}, -x]$              | [292,332] |
| 149 | $[\frac{1}{2} - z, x + \frac{1}{4}, x + \frac{1}{4}]$ | [293,334] |
| 150 | $[\frac{1}{2} - x, x + \frac{1}{4}, z + \frac{1}{4}]$ | [294,320] |
| 151 | $[x + \frac{3}{4}, -x, z + \frac{1}{4}]$              | [295,321] |
| 152 | $[x + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - z]$ | [296,318] |
| 153 | $[\frac{3}{4} - x, x, \frac{1}{4} - z]$               | [297,319] |
| 154 | $[\frac{3}{4} - x, \frac{1}{4} - x, z]$               | [298,323] |
| 155 | $[x + \frac{3}{4}, x + \frac{1}{4}, -z]$              | [299,322] |
| 156 | $[\frac{1}{2} - x, -x, -z]$                           | [300,313] |
| 157 | $[\frac{1}{2} - x, z + \frac{1}{4}, x + \frac{1}{4}]$ | [301,335] |
| 158 | $[\frac{1}{2} - x, -z, -x]$                           | [302,330] |
| 159 | $[z + \frac{3}{4}, -x, x + \frac{1}{4}]$              | [303,336] |
| 160 | $[\frac{1}{2} - z, -x, -x]$                           | [304,329] |
| 161 | $[z + \frac{1}{2}, x, x]$                             | [305,328] |
| 162 | $[x + \frac{1}{2}, z, x]$                             | [306,326] |
| 163 | $[\frac{3}{4} - x, z, \frac{1}{4} - x]$               | [307,314] |
| 164 | $[\frac{3}{4} - z, \frac{1}{4} - x, x]$               | [308,316] |
| 165 | $[\frac{3}{4} - x, \frac{1}{4} - z, x]$               | [309,315] |
| 166 | $[z + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - x]$ | [310,317] |
| 167 | $[x + \frac{1}{2}, \frac{1}{4} - z, \frac{1}{4} - x]$ | [311,325] |
| 168 | $[\frac{3}{4} - z, x, \frac{1}{4} - x]$               | [312,327] |
| 169 | $[x + \frac{1}{2}, x + \frac{1}{2}, z + \frac{1}{2}]$ | [337,372] |
| 170 | $[x + \frac{3}{4}, \frac{1}{2} - z, x + \frac{3}{4}]$ | [338,379] |
| 171 | $[x + \frac{3}{4}, z + \frac{3}{4}, \frac{1}{2} - x]$ | [339,381] |
| 172 | $[z + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - x]$ | [340,380] |
| 173 | $[\frac{1}{2} - z, x + \frac{3}{4}, x + \frac{3}{4}]$ | [341,382] |
| 174 | $[\frac{1}{2} - x, x + \frac{3}{4}, z + \frac{3}{4}]$ | [342,368] |
| 175 | $[x + \frac{3}{4}, \frac{1}{2} - x, z + \frac{3}{4}]$ | [343,369] |
| 176 | $[x + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - z]$ | [344,366] |
| 177 | $[\frac{3}{4} - x, x + \frac{1}{2}, \frac{3}{4} - z]$ | [345,367] |
| 178 | $[\frac{3}{4} - x, \frac{3}{4} - x, z + \frac{1}{2}]$ | [346,371] |
| 179 | $[x + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - z]$ | [347,370] |
| 180 | $[\frac{1}{2} - x, \frac{1}{2} - x, \frac{1}{2} - z]$ | [348,361] |
| 181 | $[\frac{1}{2} - x, z + \frac{3}{4}, x + \frac{3}{4}]$ | [349,383] |
| 182 | $[\frac{1}{2} - x, \frac{1}{2} - z, \frac{1}{2} - x]$ | [350,378] |
| 183 | $[z + \frac{3}{4}, \frac{1}{2} - x, x + \frac{3}{4}]$ | [351,384] |
| 184 | $[\frac{1}{2} - z, \frac{1}{2} - x, \frac{1}{2} - x]$ | [352,377] |
| 185 | $[z + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$ | [353,376] |
| 186 | $[x + \frac{1}{2}, z + \frac{1}{2}, x + \frac{1}{2}]$ | [354,374] |
| 187 | $[\frac{3}{4} - x, z + \frac{1}{2}, \frac{3}{4} - x]$ | [355,362] |
| 188 | $[\frac{3}{4} - z, \frac{3}{4} - x, x + \frac{1}{2}]$ | [356,364] |
| 189 | $[\frac{3}{4} - x, \frac{3}{4} - z, x + \frac{1}{2}]$ | [357,363] |
| 190 | $[z + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - x]$ | [358,365] |
| 191 | $[x + \frac{1}{2}, \frac{3}{4} - z, \frac{3}{4} - x]$ | [359,373] |
| 192 | $[\frac{3}{4} - z, x + \frac{1}{2}, \frac{3}{4} - x]$ | [360,375] |

Table 12: Wyckoff site: 384i, site symmetry: 1

| No. | position                                 | mapping |
|-----|--|---------|
| 1   | $[x, y, z]$                              | [1]     |
| 2   | $[x + \frac{1}{4}, -z, y + \frac{1}{4}]$ | [2]     |
| 3   | $[x + \frac{1}{4}, z + \frac{1}{4}, -y]$ | [3]     |
| 4   | $[z + \frac{1}{4}, y + \frac{1}{4}, -x]$ | [4]     |
| 5   | $[-z, y + \frac{1}{4}, x + \frac{1}{4}]$ | [5]     |
| 6   | $[-y, x + \frac{1}{4}, z + \frac{1}{4}]$ | [6]     |
| 7   | $[y + \frac{1}{4}, -x, z + \frac{1}{4}]$ | [7]     |
| 8   | $[x, \frac{1}{4} - y, \frac{1}{4} - z]$  | [8]     |
| 9   | $[\frac{1}{4} - x, y, \frac{1}{4} - z]$  | [9]     |
| 10  | $[\frac{1}{4} - x, \frac{1}{4} - y, z]$  | [10]    |
| 11  | $[y + \frac{1}{4}, x + \frac{1}{4}, -z]$ | [11]    |
| 12  | $[-y, -x, -z]$                           | [12]    |
| 13  | $[-x, z + \frac{1}{4}, y + \frac{1}{4}]$ | [13]    |
| 14  | $[-x, -z, -y]$                           | [14]    |
| 15  | $[z + \frac{1}{4}, -y, x + \frac{1}{4}]$ | [15]    |
| 16  | $[-z, -y, -x]$                           | [16]    |
| 17  | $[z, x, y]$                              | [17]    |
| 18  | $[y, z, x]$                              | [18]    |
| 19  | $[\frac{1}{4} - y, z, \frac{1}{4} - x]$  | [19]    |
| 20  | $[\frac{1}{4} - z, \frac{1}{4} - x, y]$  | [20]    |
| 21  | $[\frac{1}{4} - y, \frac{1}{4} - z, x]$  | [21]    |
| 22  | $[z, \frac{1}{4} - x, \frac{1}{4} - y]$  | [22]    |
| 23  | $[y, \frac{1}{4} - z, \frac{1}{4} - x]$  | [23]    |
| 24  | $[\frac{1}{4} - z, x, \frac{1}{4} - y]$  | [24]    |
| 25  | $[-x, -y, -z]$                           | [25]    |
| 26  | $[\frac{1}{4} - x, z, \frac{1}{4} - y]$  | [26]    |
| 27  | $[\frac{1}{4} - x, \frac{1}{4} - z, y]$  | [27]    |
| 28  | $[\frac{1}{4} - z, \frac{1}{4} - y, x]$  | [28]    |
| 29  | $[z, \frac{1}{4} - y, \frac{1}{4} - x]$  | [29]    |
| 30  | $[y, \frac{1}{4} - x, \frac{1}{4} - z]$  | [30]    |
| 31  | $[\frac{1}{4} - y, x, \frac{1}{4} - z]$  | [31]    |
| 32  | $[-x, y + \frac{1}{4}, z + \frac{1}{4}]$ | [32]    |
| 33  | $[x + \frac{1}{4}, -y, z + \frac{1}{4}]$ | [33]    |
| 34  | $[x + \frac{1}{4}, y + \frac{1}{4}, -z]$ | [34]    |
| 35  | $[\frac{1}{4} - y, \frac{1}{4} - x, z]$  | [35]    |
| 36  | $[y, x, z]$                              | [36]    |
| 37  | $[x, \frac{1}{4} - z, \frac{1}{4} - y]$  | [37]    |
| 38  | $[x, z, y]$                              | [38]    |
| 39  | $[\frac{1}{4} - z, y, \frac{1}{4} - x]$  | [39]    |
| 40  | $[z, y, x]$                              | [40]    |
| 41  | $[-z, -x, -y]$                           | [41]    |
| 42  | $[-y, -z, -x]$                           | [42]    |
| 43  | $[y + \frac{1}{4}, -z, x + \frac{1}{4}]$ | [43]    |
| 44  | $[z + \frac{1}{4}, x + \frac{1}{4}, -y]$ | [44]    |

*continued ...*

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 45  | $[y + \frac{1}{4}, z + \frac{1}{4}, -x]$              | [45]    |
| 46  | $[-z, x + \frac{1}{4}, y + \frac{1}{4}]$              | [46]    |
| 47  | $[-y, z + \frac{1}{4}, x + \frac{1}{4}]$              | [47]    |
| 48  | $[z + \frac{1}{4}, -x, y + \frac{1}{4}]$              | [48]    |
| 49  | $[x, y + \frac{1}{2}, z + \frac{1}{2}]$               | [49]    |
| 50  | $[x + \frac{1}{4}, \frac{1}{2} - z, y + \frac{3}{4}]$ | [50]    |
| 51  | $[x + \frac{1}{4}, z + \frac{3}{4}, \frac{1}{2} - y]$ | [51]    |
| 52  | $[z + \frac{1}{4}, y + \frac{3}{4}, \frac{1}{2} - x]$ | [52]    |
| 53  | $[-z, y + \frac{3}{4}, x + \frac{3}{4}]$              | [53]    |
| 54  | $[-y, x + \frac{3}{4}, z + \frac{3}{4}]$              | [54]    |
| 55  | $[y + \frac{1}{4}, \frac{1}{2} - x, z + \frac{3}{4}]$ | [55]    |
| 56  | $[x, \frac{3}{4} - y, \frac{3}{4} - z]$               | [56]    |
| 57  | $[\frac{1}{4} - x, y + \frac{1}{2}, \frac{3}{4} - z]$ | [57]    |
| 58  | $[\frac{1}{4} - x, \frac{3}{4} - y, z + \frac{1}{2}]$ | [58]    |
| 59  | $[y + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - z]$ | [59]    |
| 60  | $[-y, \frac{1}{2} - x, \frac{1}{2} - z]$              | [60]    |
| 61  | $[-x, z + \frac{3}{4}, y + \frac{3}{4}]$              | [61]    |
| 62  | $[-x, \frac{1}{2} - z, \frac{1}{2} - y]$              | [62]    |
| 63  | $[z + \frac{1}{4}, \frac{1}{2} - y, x + \frac{3}{4}]$ | [63]    |
| 64  | $[-z, \frac{1}{2} - y, \frac{1}{2} - x]$              | [64]    |
| 65  | $[z, x + \frac{1}{2}, y + \frac{1}{2}]$               | [65]    |
| 66  | $[y, z + \frac{1}{2}, x + \frac{1}{2}]$               | [66]    |
| 67  | $[\frac{1}{4} - y, z + \frac{1}{2}, \frac{3}{4} - x]$ | [67]    |
| 68  | $[\frac{1}{4} - z, \frac{3}{4} - x, y + \frac{1}{2}]$ | [68]    |
| 69  | $[\frac{1}{4} - y, \frac{3}{4} - z, x + \frac{1}{2}]$ | [69]    |
| 70  | $[z, \frac{3}{4} - x, \frac{3}{4} - y]$               | [70]    |
| 71  | $[y, \frac{3}{4} - z, \frac{3}{4} - x]$               | [71]    |
| 72  | $[\frac{1}{4} - z, x + \frac{1}{2}, \frac{3}{4} - y]$ | [72]    |
| 73  | $[-x, \frac{1}{2} - y, \frac{1}{2} - z]$              | [73]    |
| 74  | $[\frac{1}{4} - x, z + \frac{1}{2}, \frac{3}{4} - y]$ | [74]    |
| 75  | $[\frac{1}{4} - x, \frac{3}{4} - z, y + \frac{1}{2}]$ | [75]    |
| 76  | $[\frac{1}{4} - z, \frac{3}{4} - y, x + \frac{1}{2}]$ | [76]    |
| 77  | $[z, \frac{3}{4} - y, \frac{3}{4} - x]$               | [77]    |
| 78  | $[y, \frac{3}{4} - x, \frac{3}{4} - z]$               | [78]    |
| 79  | $[\frac{1}{4} - y, x + \frac{1}{2}, \frac{3}{4} - z]$ | [79]    |
| 80  | $[-x, y + \frac{3}{4}, z + \frac{3}{4}]$              | [80]    |
| 81  | $[x + \frac{1}{4}, \frac{1}{2} - y, z + \frac{3}{4}]$ | [81]    |
| 82  | $[x + \frac{1}{4}, y + \frac{3}{4}, \frac{1}{2} - z]$ | [82]    |
| 83  | $[\frac{1}{4} - y, \frac{3}{4} - x, z + \frac{1}{2}]$ | [83]    |
| 84  | $[y, x + \frac{1}{2}, z + \frac{1}{2}]$               | [84]    |
| 85  | $[x, \frac{3}{4} - z, \frac{3}{4} - y]$               | [85]    |
| 86  | $[x, z + \frac{1}{2}, y + \frac{1}{2}]$               | [86]    |
| 87  | $[\frac{1}{4} - z, y + \frac{1}{2}, \frac{3}{4} - x]$ | [87]    |
| 88  | $[z, y + \frac{1}{2}, x + \frac{1}{2}]$               | [88]    |
| 89  | $[-z, \frac{1}{2} - x, \frac{1}{2} - y]$              | [89]    |
| 90  | $[-y, \frac{1}{2} - z, \frac{1}{2} - x]$              | [90]    |
| 91  | $[y + \frac{1}{4}, \frac{1}{2} - z, x + \frac{3}{4}]$ | [91]    |

continued ...

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 92  | $[z + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - y]$ | [92]    |
| 93  | $[y + \frac{1}{4}, z + \frac{3}{4}, \frac{1}{2} - x]$ | [93]    |
| 94  | $[-z, x + \frac{3}{4}, y + \frac{3}{4}]$              | [94]    |
| 95  | $[-y, z + \frac{3}{4}, x + \frac{3}{4}]$              | [95]    |
| 96  | $[z + \frac{1}{4}, \frac{1}{2} - x, y + \frac{3}{4}]$ | [96]    |
| 97  | $[x + \frac{1}{2}, y, z + \frac{1}{2}]$               | [97]    |
| 98  | $[x + \frac{3}{4}, -z, y + \frac{3}{4}]$              | [98]    |
| 99  | $[x + \frac{3}{4}, z + \frac{1}{4}, \frac{1}{2} - y]$ | [99]    |
| 100 | $[z + \frac{3}{4}, y + \frac{1}{4}, \frac{1}{2} - x]$ | [100]   |
| 101 | $[\frac{1}{2} - z, y + \frac{1}{4}, x + \frac{3}{4}]$ | [101]   |
| 102 | $[\frac{1}{2} - y, x + \frac{1}{4}, z + \frac{3}{4}]$ | [102]   |
| 103 | $[y + \frac{3}{4}, -x, z + \frac{3}{4}]$              | [103]   |
| 104 | $[x + \frac{1}{2}, \frac{1}{4} - y, \frac{3}{4} - z]$ | [104]   |
| 105 | $[\frac{3}{4} - x, y, \frac{3}{4} - z]$               | [105]   |
| 106 | $[\frac{3}{4} - x, \frac{1}{4} - y, z + \frac{1}{2}]$ | [106]   |
| 107 | $[y + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - z]$ | [107]   |
| 108 | $[\frac{1}{2} - y, -x, \frac{1}{2} - z]$              | [108]   |
| 109 | $[\frac{1}{2} - x, z + \frac{1}{4}, y + \frac{3}{4}]$ | [109]   |
| 110 | $[\frac{1}{2} - x, -z, \frac{1}{2} - y]$              | [110]   |
| 111 | $[z + \frac{3}{4}, -y, x + \frac{3}{4}]$              | [111]   |
| 112 | $[\frac{1}{2} - z, -y, \frac{1}{2} - x]$              | [112]   |
| 113 | $[z + \frac{1}{2}, x, y + \frac{1}{2}]$               | [113]   |
| 114 | $[y + \frac{1}{2}, z, x + \frac{1}{2}]$               | [114]   |
| 115 | $[\frac{3}{4} - y, z, \frac{3}{4} - x]$               | [115]   |
| 116 | $[\frac{3}{4} - z, \frac{1}{4} - x, y + \frac{1}{2}]$ | [116]   |
| 117 | $[\frac{3}{4} - y, \frac{1}{4} - z, x + \frac{1}{2}]$ | [117]   |
| 118 | $[z + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - y]$ | [118]   |
| 119 | $[y + \frac{1}{2}, \frac{1}{4} - z, \frac{3}{4} - x]$ | [119]   |
| 120 | $[\frac{3}{4} - z, x, \frac{3}{4} - y]$               | [120]   |
| 121 | $[\frac{1}{2} - x, -y, \frac{1}{2} - z]$              | [121]   |
| 122 | $[\frac{3}{4} - x, z, \frac{3}{4} - y]$               | [122]   |
| 123 | $[\frac{3}{4} - x, \frac{1}{4} - z, y + \frac{1}{2}]$ | [123]   |
| 124 | $[\frac{3}{4} - z, \frac{1}{4} - y, x + \frac{1}{2}]$ | [124]   |
| 125 | $[z + \frac{1}{2}, \frac{1}{4} - y, \frac{3}{4} - x]$ | [125]   |
| 126 | $[y + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - z]$ | [126]   |
| 127 | $[\frac{3}{4} - y, x, \frac{3}{4} - z]$               | [127]   |
| 128 | $[\frac{1}{2} - x, y + \frac{1}{4}, z + \frac{3}{4}]$ | [128]   |
| 129 | $[x + \frac{3}{4}, -y, z + \frac{3}{4}]$              | [129]   |
| 130 | $[x + \frac{3}{4}, y + \frac{1}{4}, \frac{1}{2} - z]$ | [130]   |
| 131 | $[\frac{3}{4} - y, \frac{1}{4} - x, z + \frac{1}{2}]$ | [131]   |
| 132 | $[y + \frac{1}{2}, x, z + \frac{1}{2}]$               | [132]   |
| 133 | $[x + \frac{1}{2}, \frac{1}{4} - z, \frac{3}{4} - y]$ | [133]   |
| 134 | $[x + \frac{1}{2}, z, y + \frac{1}{2}]$               | [134]   |
| 135 | $[\frac{3}{4} - z, y, \frac{3}{4} - x]$               | [135]   |
| 136 | $[z + \frac{1}{2}, y, x + \frac{1}{2}]$               | [136]   |
| 137 | $[\frac{1}{2} - z, -x, \frac{1}{2} - y]$              | [137]   |
| 138 | $[\frac{1}{2} - y, -z, \frac{1}{2} - x]$              | [138]   |

continued ...

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 139 | $[y + \frac{3}{4}, -z, x + \frac{3}{4}]$              | [139]   |
| 140 | $[z + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - y]$ | [140]   |
| 141 | $[y + \frac{3}{4}, z + \frac{1}{4}, \frac{1}{2} - x]$ | [141]   |
| 142 | $[\frac{1}{2} - z, x + \frac{1}{4}, y + \frac{3}{4}]$ | [142]   |
| 143 | $[\frac{1}{2} - y, z + \frac{1}{4}, x + \frac{3}{4}]$ | [143]   |
| 144 | $[z + \frac{3}{4}, -x, y + \frac{3}{4}]$              | [144]   |
| 145 | $[x + \frac{1}{2}, y + \frac{1}{2}, z]$               | [145]   |
| 146 | $[x + \frac{3}{4}, \frac{1}{2} - z, y + \frac{1}{4}]$ | [146]   |
| 147 | $[x + \frac{3}{4}, z + \frac{3}{4}, -y]$              | [147]   |
| 148 | $[z + \frac{3}{4}, y + \frac{3}{4}, -x]$              | [148]   |
| 149 | $[\frac{1}{2} - z, y + \frac{3}{4}, x + \frac{1}{4}]$ | [149]   |
| 150 | $[\frac{1}{2} - y, x + \frac{3}{4}, z + \frac{1}{4}]$ | [150]   |
| 151 | $[y + \frac{3}{4}, \frac{1}{2} - x, z + \frac{1}{4}]$ | [151]   |
| 152 | $[x + \frac{1}{2}, \frac{3}{4} - y, \frac{1}{4} - z]$ | [152]   |
| 153 | $[\frac{3}{4} - x, y + \frac{1}{2}, \frac{1}{4} - z]$ | [153]   |
| 154 | $[\frac{3}{4} - x, \frac{3}{4} - y, z]$               | [154]   |
| 155 | $[y + \frac{3}{4}, x + \frac{3}{4}, -z]$              | [155]   |
| 156 | $[\frac{1}{2} - y, \frac{1}{2} - x, -z]$              | [156]   |
| 157 | $[\frac{1}{2} - x, z + \frac{3}{4}, y + \frac{1}{4}]$ | [157]   |
| 158 | $[\frac{1}{2} - x, \frac{1}{2} - z, -y]$              | [158]   |
| 159 | $[z + \frac{3}{4}, \frac{1}{2} - y, x + \frac{1}{4}]$ | [159]   |
| 160 | $[\frac{1}{2} - z, \frac{1}{2} - y, -x]$              | [160]   |
| 161 | $[z + \frac{1}{2}, x + \frac{1}{2}, y]$               | [161]   |
| 162 | $[y + \frac{1}{2}, z + \frac{1}{2}, x]$               | [162]   |
| 163 | $[\frac{3}{4} - y, z + \frac{1}{2}, \frac{1}{4} - x]$ | [163]   |
| 164 | $[\frac{3}{4} - z, \frac{3}{4} - x, y]$               | [164]   |
| 165 | $[\frac{3}{4} - y, \frac{3}{4} - z, x]$               | [165]   |
| 166 | $[z + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - y]$ | [166]   |
| 167 | $[y + \frac{1}{2}, \frac{3}{4} - z, \frac{1}{4} - x]$ | [167]   |
| 168 | $[\frac{3}{4} - z, x + \frac{1}{2}, \frac{1}{4} - y]$ | [168]   |
| 169 | $[\frac{1}{2} - x, \frac{1}{2} - y, -z]$              | [169]   |
| 170 | $[\frac{3}{4} - x, z + \frac{1}{2}, \frac{1}{4} - y]$ | [170]   |
| 171 | $[\frac{3}{4} - x, \frac{3}{4} - z, y]$               | [171]   |
| 172 | $[\frac{3}{4} - z, \frac{3}{4} - y, x]$               | [172]   |
| 173 | $[z + \frac{1}{2}, \frac{3}{4} - y, \frac{1}{4} - x]$ | [173]   |
| 174 | $[y + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - z]$ | [174]   |
| 175 | $[\frac{3}{4} - y, x + \frac{1}{2}, \frac{1}{4} - z]$ | [175]   |
| 176 | $[\frac{1}{2} - x, y + \frac{3}{4}, z + \frac{1}{4}]$ | [176]   |
| 177 | $[x + \frac{3}{4}, \frac{1}{2} - y, z + \frac{1}{4}]$ | [177]   |
| 178 | $[x + \frac{3}{4}, y + \frac{3}{4}, -z]$              | [178]   |
| 179 | $[\frac{3}{4} - y, \frac{3}{4} - x, z]$               | [179]   |
| 180 | $[y + \frac{1}{2}, x + \frac{1}{2}, z]$               | [180]   |
| 181 | $[x + \frac{1}{2}, \frac{3}{4} - z, \frac{1}{4} - y]$ | [181]   |
| 182 | $[x + \frac{1}{2}, z + \frac{1}{2}, y]$               | [182]   |
| 183 | $[\frac{3}{4} - z, y + \frac{1}{2}, \frac{1}{4} - x]$ | [183]   |
| 184 | $[z + \frac{1}{2}, y + \frac{1}{2}, x]$               | [184]   |
| 185 | $[\frac{1}{2} - z, \frac{1}{2} - x, -y]$              | [185]   |

continued ...

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 186 | $[\frac{1}{2} - y, \frac{1}{2} - z, -x]$              | [186]   |
| 187 | $[y + \frac{3}{4}, \frac{1}{2} - z, x + \frac{1}{4}]$ | [187]   |
| 188 | $[z + \frac{3}{4}, x + \frac{3}{4}, -y]$              | [188]   |
| 189 | $[y + \frac{3}{4}, z + \frac{3}{4}, -x]$              | [189]   |
| 190 | $[\frac{1}{2} - z, x + \frac{3}{4}, y + \frac{1}{4}]$ | [190]   |
| 191 | $[\frac{1}{2} - y, z + \frac{3}{4}, x + \frac{1}{4}]$ | [191]   |
| 192 | $[z + \frac{3}{4}, \frac{1}{2} - x, y + \frac{1}{4}]$ | [192]   |
| 193 | $[x, y, z + \frac{1}{2}]$                             | [193]   |
| 194 | $[x + \frac{1}{4}, -z, y + \frac{3}{4}]$              | [194]   |
| 195 | $[x + \frac{1}{4}, z + \frac{1}{4}, \frac{1}{2} - y]$ | [195]   |
| 196 | $[z + \frac{1}{4}, y + \frac{1}{4}, \frac{1}{2} - x]$ | [196]   |
| 197 | $[-z, y + \frac{1}{4}, x + \frac{3}{4}]$              | [197]   |
| 198 | $[-y, x + \frac{1}{4}, z + \frac{3}{4}]$              | [198]   |
| 199 | $[y + \frac{1}{4}, -x, z + \frac{3}{4}]$              | [199]   |
| 200 | $[x, \frac{1}{4} - y, \frac{3}{4} - z]$               | [200]   |
| 201 | $[\frac{1}{4} - x, y, \frac{3}{4} - z]$               | [201]   |
| 202 | $[\frac{1}{4} - x, \frac{1}{4} - y, z + \frac{1}{2}]$ | [202]   |
| 203 | $[y + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - z]$ | [203]   |
| 204 | $[-y, -x, \frac{1}{2} - z]$                           | [204]   |
| 205 | $[-x, z + \frac{1}{4}, y + \frac{3}{4}]$              | [205]   |
| 206 | $[-x, -z, \frac{1}{2} - y]$                           | [206]   |
| 207 | $[z + \frac{1}{4}, -y, x + \frac{3}{4}]$              | [207]   |
| 208 | $[-z, -y, \frac{1}{2} - x]$                           | [208]   |
| 209 | $[z, x, y + \frac{1}{2}]$                             | [209]   |
| 210 | $[y, z, x + \frac{1}{2}]$                             | [210]   |
| 211 | $[\frac{1}{4} - y, z, \frac{3}{4} - x]$               | [211]   |
| 212 | $[\frac{1}{4} - z, \frac{1}{4} - x, y + \frac{1}{2}]$ | [212]   |
| 213 | $[\frac{1}{4} - y, \frac{1}{4} - z, x + \frac{1}{2}]$ | [213]   |
| 214 | $[z, \frac{1}{4} - x, \frac{3}{4} - y]$               | [214]   |
| 215 | $[y, \frac{1}{4} - z, \frac{3}{4} - x]$               | [215]   |
| 216 | $[\frac{1}{4} - z, x, \frac{3}{4} - y]$               | [216]   |
| 217 | $[-x, -y, \frac{1}{2} - z]$                           | [217]   |
| 218 | $[\frac{1}{4} - x, z, \frac{3}{4} - y]$               | [218]   |
| 219 | $[\frac{1}{4} - x, \frac{1}{4} - z, y + \frac{1}{2}]$ | [219]   |
| 220 | $[\frac{1}{4} - z, \frac{1}{4} - y, x + \frac{1}{2}]$ | [220]   |
| 221 | $[z, \frac{1}{4} - y, \frac{3}{4} - x]$               | [221]   |
| 222 | $[y, \frac{1}{4} - x, \frac{3}{4} - z]$               | [222]   |
| 223 | $[\frac{1}{4} - y, x, \frac{3}{4} - z]$               | [223]   |
| 224 | $[-x, y + \frac{1}{4}, z + \frac{3}{4}]$              | [224]   |
| 225 | $[x + \frac{1}{4}, -y, z + \frac{3}{4}]$              | [225]   |
| 226 | $[x + \frac{1}{4}, y + \frac{1}{4}, \frac{1}{2} - z]$ | [226]   |
| 227 | $[\frac{1}{4} - y, \frac{1}{4} - x, z + \frac{1}{2}]$ | [227]   |
| 228 | $[y, x, z + \frac{1}{2}]$                             | [228]   |
| 229 | $[x, \frac{1}{4} - z, \frac{3}{4} - y]$               | [229]   |
| 230 | $[x, z, y + \frac{1}{2}]$                             | [230]   |
| 231 | $[\frac{1}{4} - z, y, \frac{3}{4} - x]$               | [231]   |
| 232 | $[z, y, x + \frac{1}{2}]$                             | [232]   |

continued ...

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 233 | $[-z, -x, \frac{1}{2} - y]$                           | [233]   |
| 234 | $[-y, -z, \frac{1}{2} - x]$                           | [234]   |
| 235 | $[y + \frac{1}{4}, -z, x + \frac{3}{4}]$              | [235]   |
| 236 | $[z + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - y]$ | [236]   |
| 237 | $[y + \frac{1}{4}, z + \frac{1}{4}, \frac{1}{2} - x]$ | [237]   |
| 238 | $[-z, x + \frac{1}{4}, y + \frac{3}{4}]$              | [238]   |
| 239 | $[-y, z + \frac{1}{4}, x + \frac{3}{4}]$              | [239]   |
| 240 | $[z + \frac{1}{4}, -x, y + \frac{3}{4}]$              | [240]   |
| 241 | $[x, y + \frac{1}{2}, z]$                             | [241]   |
| 242 | $[x + \frac{1}{4}, \frac{1}{2} - z, y + \frac{1}{4}]$ | [242]   |
| 243 | $[x + \frac{1}{4}, z + \frac{3}{4}, -y]$              | [243]   |
| 244 | $[z + \frac{1}{4}, y + \frac{3}{4}, -x]$              | [244]   |
| 245 | $[-z, y + \frac{3}{4}, x + \frac{1}{4}]$              | [245]   |
| 246 | $[-y, x + \frac{3}{4}, z + \frac{1}{4}]$              | [246]   |
| 247 | $[y + \frac{1}{4}, \frac{1}{2} - x, z + \frac{1}{4}]$ | [247]   |
| 248 | $[x, \frac{3}{4} - y, \frac{1}{4} - z]$               | [248]   |
| 249 | $[\frac{1}{4} - x, y + \frac{1}{2}, \frac{1}{4} - z]$ | [249]   |
| 250 | $[\frac{1}{4} - x, \frac{3}{4} - y, z]$               | [250]   |
| 251 | $[y + \frac{1}{4}, x + \frac{3}{4}, -z]$              | [251]   |
| 252 | $[-y, \frac{1}{2} - x, -z]$                           | [252]   |
| 253 | $[-x, z + \frac{3}{4}, y + \frac{1}{4}]$              | [253]   |
| 254 | $[-x, \frac{1}{2} - z, -y]$                           | [254]   |
| 255 | $[z + \frac{1}{4}, \frac{1}{2} - y, x + \frac{1}{4}]$ | [255]   |
| 256 | $[-z, \frac{1}{2} - y, -x]$                           | [256]   |
| 257 | $[z, x + \frac{1}{2}, y]$                             | [257]   |
| 258 | $[y, z + \frac{1}{2}, x]$                             | [258]   |
| 259 | $[\frac{1}{4} - y, z + \frac{1}{2}, \frac{1}{4} - x]$ | [259]   |
| 260 | $[\frac{1}{4} - z, \frac{3}{4} - x, y]$               | [260]   |
| 261 | $[\frac{1}{4} - y, \frac{3}{4} - z, x]$               | [261]   |
| 262 | $[z, \frac{3}{4} - x, \frac{1}{4} - y]$               | [262]   |
| 263 | $[y, \frac{3}{4} - z, \frac{1}{4} - x]$               | [263]   |
| 264 | $[\frac{1}{4} - z, x + \frac{1}{2}, \frac{1}{4} - y]$ | [264]   |
| 265 | $[-x, \frac{1}{2} - y, -z]$                           | [265]   |
| 266 | $[\frac{1}{4} - x, z + \frac{1}{2}, \frac{1}{4} - y]$ | [266]   |
| 267 | $[\frac{1}{4} - x, \frac{3}{4} - z, y]$               | [267]   |
| 268 | $[\frac{1}{4} - z, \frac{3}{4} - y, x]$               | [268]   |
| 269 | $[z, \frac{3}{4} - y, \frac{1}{4} - x]$               | [269]   |
| 270 | $[y, \frac{3}{4} - x, \frac{1}{4} - z]$               | [270]   |
| 271 | $[\frac{1}{4} - y, x + \frac{1}{2}, \frac{1}{4} - z]$ | [271]   |
| 272 | $[-x, y + \frac{3}{4}, z + \frac{1}{4}]$              | [272]   |
| 273 | $[x + \frac{1}{4}, \frac{1}{2} - y, z + \frac{1}{4}]$ | [273]   |
| 274 | $[x + \frac{1}{4}, y + \frac{3}{4}, -z]$              | [274]   |
| 275 | $[\frac{1}{4} - y, \frac{3}{4} - x, z]$               | [275]   |
| 276 | $[y, x + \frac{1}{2}, z]$                             | [276]   |
| 277 | $[x, \frac{3}{4} - z, \frac{1}{4} - y]$               | [277]   |
| 278 | $[x, z + \frac{1}{2}, y]$                             | [278]   |
| 279 | $[\frac{1}{4} - z, y + \frac{1}{2}, \frac{1}{4} - x]$ | [279]   |

continued ...



Table 12

| No. | position  | mapping |
|-----|---|---------|
| 280 | $[z, y + \frac{1}{2}, x]$                             | [280]   |
| 281 | $[-z, \frac{1}{2} - x, -y]$                           | [281]   |
| 282 | $[-y, \frac{1}{2} - z, -x]$                           | [282]   |
| 283 | $[y + \frac{1}{4}, \frac{1}{2} - z, x + \frac{1}{4}]$ | [283]   |
| 284 | $[z + \frac{1}{4}, x + \frac{3}{4}, -y]$              | [284]   |
| 285 | $[y + \frac{1}{4}, z + \frac{3}{4}, -x]$              | [285]   |
| 286 | $[-z, x + \frac{3}{4}, y + \frac{1}{4}]$              | [286]   |
| 287 | $[-y, z + \frac{3}{4}, x + \frac{1}{4}]$              | [287]   |
| 288 | $[z + \frac{1}{4}, \frac{1}{2} - x, y + \frac{1}{4}]$ | [288]   |
| 289 | $[x + \frac{1}{2}, y, z]$                             | [289]   |
| 290 | $[x + \frac{3}{4}, -z, y + \frac{1}{4}]$              | [290]   |
| 291 | $[x + \frac{3}{4}, z + \frac{1}{4}, -y]$              | [291]   |
| 292 | $[z + \frac{3}{4}, y + \frac{1}{4}, -x]$              | [292]   |
| 293 | $[\frac{1}{2} - z, y + \frac{1}{4}, x + \frac{1}{4}]$ | [293]   |
| 294 | $[\frac{1}{2} - y, x + \frac{1}{4}, z + \frac{1}{4}]$ | [294]   |
| 295 | $[y + \frac{3}{4}, -x, z + \frac{1}{4}]$              | [295]   |
| 296 | $[x + \frac{1}{2}, \frac{1}{4} - y, \frac{1}{4} - z]$ | [296]   |
| 297 | $[\frac{3}{4} - x, y, \frac{1}{4} - z]$               | [297]   |
| 298 | $[\frac{3}{4} - x, \frac{1}{4} - y, z]$               | [298]   |
| 299 | $[y + \frac{3}{4}, x + \frac{1}{4}, -z]$              | [299]   |
| 300 | $[\frac{1}{2} - y, -x, -z]$                           | [300]   |
| 301 | $[\frac{1}{2} - x, z + \frac{1}{4}, y + \frac{1}{4}]$ | [301]   |
| 302 | $[\frac{1}{2} - x, -z, -y]$                           | [302]   |
| 303 | $[z + \frac{3}{4}, -y, x + \frac{1}{4}]$              | [303]   |
| 304 | $[\frac{1}{2} - z, -y, -x]$                           | [304]   |
| 305 | $[z + \frac{1}{2}, x, y]$                             | [305]   |
| 306 | $[y + \frac{1}{2}, z, x]$                             | [306]   |
| 307 | $[\frac{3}{4} - y, z, \frac{1}{4} - x]$               | [307]   |
| 308 | $[\frac{3}{4} - z, \frac{1}{4} - x, y]$               | [308]   |
| 309 | $[\frac{3}{4} - y, \frac{1}{4} - z, x]$               | [309]   |
| 310 | $[z + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - y]$ | [310]   |
| 311 | $[y + \frac{1}{2}, \frac{1}{4} - z, \frac{1}{4} - x]$ | [311]   |
| 312 | $[\frac{3}{4} - z, x, \frac{1}{4} - y]$               | [312]   |
| 313 | $[\frac{1}{2} - x, -y, -z]$                           | [313]   |
| 314 | $[\frac{3}{4} - x, z, \frac{1}{4} - y]$               | [314]   |
| 315 | $[\frac{3}{4} - x, \frac{1}{4} - z, y]$               | [315]   |
| 316 | $[\frac{3}{4} - z, \frac{1}{4} - y, x]$               | [316]   |
| 317 | $[z + \frac{1}{2}, \frac{1}{4} - y, \frac{1}{4} - x]$ | [317]   |
| 318 | $[y + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - z]$ | [318]   |
| 319 | $[\frac{3}{4} - y, x, \frac{1}{4} - z]$               | [319]   |
| 320 | $[\frac{1}{2} - x, y + \frac{1}{4}, z + \frac{1}{4}]$ | [320]   |
| 321 | $[x + \frac{3}{4}, -y, z + \frac{1}{4}]$              | [321]   |
| 322 | $[x + \frac{3}{4}, y + \frac{1}{4}, -z]$              | [322]   |
| 323 | $[\frac{3}{4} - y, \frac{1}{4} - x, z]$               | [323]   |
| 324 | $[y + \frac{1}{2}, x, z]$                             | [324]   |
| 325 | $[x + \frac{1}{2}, \frac{1}{4} - z, \frac{1}{4} - y]$ | [325]   |
| 326 | $[x + \frac{1}{2}, z, y]$                             | [326]   |

continued ...

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 327 | $[\frac{3}{4} - z, y, \frac{1}{4} - x]$               | [327]   |
| 328 | $[z + \frac{1}{2}, y, x]$                             | [328]   |
| 329 | $[\frac{1}{2} - z, -x, -y]$                           | [329]   |
| 330 | $[\frac{1}{2} - y, -z, -x]$                           | [330]   |
| 331 | $[y + \frac{3}{4}, -z, x + \frac{1}{4}]$              | [331]   |
| 332 | $[z + \frac{3}{4}, x + \frac{1}{4}, -y]$              | [332]   |
| 333 | $[y + \frac{3}{4}, z + \frac{1}{4}, -x]$              | [333]   |
| 334 | $[\frac{1}{2} - z, x + \frac{1}{4}, y + \frac{1}{4}]$ | [334]   |
| 335 | $[\frac{1}{2} - y, z + \frac{1}{4}, x + \frac{1}{4}]$ | [335]   |
| 336 | $[z + \frac{3}{4}, -x, y + \frac{1}{4}]$              | [336]   |
| 337 | $[x + \frac{1}{2}, y + \frac{1}{2}, z + \frac{1}{2}]$ | [337]   |
| 338 | $[x + \frac{3}{4}, \frac{1}{2} - z, y + \frac{3}{4}]$ | [338]   |
| 339 | $[x + \frac{3}{4}, z + \frac{3}{4}, \frac{1}{2} - y]$ | [339]   |
| 340 | $[z + \frac{3}{4}, y + \frac{3}{4}, \frac{1}{2} - x]$ | [340]   |
| 341 | $[\frac{1}{2} - z, y + \frac{3}{4}, x + \frac{3}{4}]$ | [341]   |
| 342 | $[\frac{1}{2} - y, x + \frac{3}{4}, z + \frac{3}{4}]$ | [342]   |
| 343 | $[y + \frac{3}{4}, \frac{1}{2} - x, z + \frac{3}{4}]$ | [343]   |
| 344 | $[x + \frac{1}{2}, \frac{3}{4} - y, \frac{3}{4} - z]$ | [344]   |
| 345 | $[\frac{3}{4} - x, y + \frac{1}{2}, \frac{3}{4} - z]$ | [345]   |
| 346 | $[\frac{3}{4} - x, \frac{3}{4} - y, z + \frac{1}{2}]$ | [346]   |
| 347 | $[y + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - z]$ | [347]   |
| 348 | $[\frac{1}{2} - y, \frac{1}{2} - x, \frac{1}{2} - z]$ | [348]   |
| 349 | $[\frac{1}{2} - x, z + \frac{3}{4}, y + \frac{3}{4}]$ | [349]   |
| 350 | $[\frac{1}{2} - x, \frac{1}{2} - z, \frac{1}{2} - y]$ | [350]   |
| 351 | $[z + \frac{3}{4}, \frac{1}{2} - y, x + \frac{3}{4}]$ | [351]   |
| 352 | $[\frac{1}{2} - z, \frac{1}{2} - y, \frac{1}{2} - x]$ | [352]   |
| 353 | $[z + \frac{1}{2}, x + \frac{1}{2}, y + \frac{1}{2}]$ | [353]   |
| 354 | $[y + \frac{1}{2}, z + \frac{1}{2}, x + \frac{1}{2}]$ | [354]   |
| 355 | $[\frac{3}{4} - y, z + \frac{1}{2}, \frac{3}{4} - x]$ | [355]   |
| 356 | $[\frac{3}{4} - z, \frac{3}{4} - x, y + \frac{1}{2}]$ | [356]   |
| 357 | $[\frac{3}{4} - y, \frac{3}{4} - z, x + \frac{1}{2}]$ | [357]   |
| 358 | $[z + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - y]$ | [358]   |
| 359 | $[y + \frac{1}{2}, \frac{3}{4} - z, \frac{3}{4} - x]$ | [359]   |
| 360 | $[\frac{3}{4} - z, x + \frac{1}{2}, \frac{3}{4} - y]$ | [360]   |
| 361 | $[\frac{1}{2} - x, \frac{1}{2} - y, \frac{1}{2} - z]$ | [361]   |
| 362 | $[\frac{3}{4} - x, z + \frac{1}{2}, \frac{3}{4} - y]$ | [362]   |
| 363 | $[\frac{3}{4} - x, \frac{3}{4} - z, y + \frac{1}{2}]$ | [363]   |
| 364 | $[\frac{3}{4} - z, \frac{3}{4} - y, x + \frac{1}{2}]$ | [364]   |
| 365 | $[z + \frac{1}{2}, \frac{3}{4} - y, \frac{3}{4} - x]$ | [365]   |
| 366 | $[y + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - z]$ | [366]   |
| 367 | $[\frac{3}{4} - y, x + \frac{1}{2}, \frac{3}{4} - z]$ | [367]   |
| 368 | $[\frac{1}{2} - x, y + \frac{3}{4}, z + \frac{3}{4}]$ | [368]   |
| 369 | $[x + \frac{3}{4}, \frac{1}{2} - y, z + \frac{3}{4}]$ | [369]   |
| 370 | $[x + \frac{3}{4}, y + \frac{3}{4}, \frac{1}{2} - z]$ | [370]   |
| 371 | $[\frac{3}{4} - y, \frac{3}{4} - x, z + \frac{1}{2}]$ | [371]   |
| 372 | $[y + \frac{1}{2}, x + \frac{1}{2}, z + \frac{1}{2}]$ | [372]   |
| 373 | $[x + \frac{1}{2}, \frac{3}{4} - z, \frac{3}{4} - y]$ | [373]   |

continued ...

Table 12

| No. | position  | mapping |
|-----|---|---------|
| 374 | $[x + \frac{1}{2}, z + \frac{1}{2}, y + \frac{1}{2}]$ | [374]   |
| 375 | $[\frac{3}{4} - z, y + \frac{1}{2}, \frac{3}{4} - x]$ | [375]   |
| 376 | $[z + \frac{1}{2}, y + \frac{1}{2}, x + \frac{1}{2}]$ | [376]   |
| 377 | $[\frac{1}{2} - z, \frac{1}{2} - x, \frac{1}{2} - y]$ | [377]   |
| 378 | $[\frac{1}{2} - y, \frac{1}{2} - z, \frac{1}{2} - x]$ | [378]   |
| 379 | $[y + \frac{3}{4}, \frac{1}{2} - z, x + \frac{3}{4}]$ | [379]   |
| 380 | $[z + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - y]$ | [380]   |
| 381 | $[y + \frac{3}{4}, z + \frac{3}{4}, \frac{1}{2} - x]$ | [381]   |
| 382 | $[\frac{1}{2} - z, x + \frac{3}{4}, y + \frac{3}{4}]$ | [382]   |
| 383 | $[\frac{1}{2} - y, z + \frac{3}{4}, x + \frac{3}{4}]$ | [383]   |
| 384 | $[z + \frac{3}{4}, \frac{1}{2} - x, y + \frac{3}{4}]$ | [384]   |