

MSG No. 228.135 $Fd\bar{3}c1'$ [Type II, cubic]

Table 1: Wyckoff site: 16a, site symmetry: 23.1'

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

Table 2: Wyckoff site: 32b, site symmetry: .321'

No.	position	mapping
1	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[1, 12, 14, 16, 17, 18, 193, 204, 206, 208, 209, 210]
2	$[\frac{1}{2}, \frac{1}{4}, \frac{1}{2}]$	[2, 7, 15, 105, 115, 120, 194, 199, 207, 297, 307, 312]
3	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{4}]$	[3, 4, 11, 154, 164, 165, 195, 196, 203, 346, 356, 357]
4	$[\frac{1}{4}, \frac{1}{2}, \frac{1}{2}]$	[5, 6, 13, 56, 70, 71, 197, 198, 205, 248, 262, 263]
5	$[\frac{1}{4}, 0, 0]$	[8, 22, 23, 53, 54, 61, 200, 214, 215, 245, 246, 253]
6	$[0, \frac{1}{4}, 0]$	[9, 19, 24, 98, 103, 111, 201, 211, 216, 290, 295, 303]
7	$[0, 0, \frac{1}{4}]$	[10, 20, 21, 147, 148, 155, 202, 212, 213, 339, 340, 347]
8	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[25, 36, 38, 40, 41, 42, 217, 228, 230, 232, 233, 234]
9	$[0, \frac{3}{4}, 0]$	[26, 31, 39, 129, 139, 144, 218, 223, 231, 321, 331, 336]
10	$[0, 0, \frac{3}{4}]$	[27, 28, 35, 178, 188, 189, 219, 220, 227, 370, 380, 381]
11	$[\frac{3}{4}, 0, 0]$	[29, 30, 37, 80, 94, 95, 221, 222, 229, 272, 286, 287]
12	$[\frac{3}{4}, \frac{1}{2}, \frac{1}{2}]$	[32, 46, 47, 77, 78, 85, 224, 238, 239, 269, 270, 277]
13	$[\frac{1}{2}, \frac{3}{4}, \frac{1}{2}]$	[33, 43, 48, 122, 127, 135, 225, 235, 240, 314, 319, 327]
14	$[\frac{1}{2}, \frac{1}{2}, \frac{3}{4}]$	[34, 44, 45, 171, 172, 179, 226, 236, 237, 363, 364, 371]
15	$[\frac{1}{4}, \frac{3}{4}, \frac{3}{4}]$	[49, 60, 62, 64, 65, 66, 241, 252, 254, 256, 257, 258]
16	$[\frac{1}{2}, \frac{3}{4}, 0]$	[50, 55, 63, 153, 163, 168, 242, 247, 255, 345, 355, 360]
17	$[\frac{1}{2}, 0, \frac{3}{4}]$	[51, 52, 59, 106, 116, 117, 243, 244, 251, 298, 308, 309]
18	$[0, \frac{3}{4}, \frac{1}{2}]$	[57, 67, 72, 146, 151, 159, 249, 259, 264, 338, 343, 351]
19	$[0, \frac{1}{2}, \frac{3}{4}]$	[58, 68, 69, 99, 100, 107, 250, 260, 261, 291, 292, 299]
20	$[\frac{3}{4}, \frac{1}{4}, \frac{1}{4}]$	[73, 84, 86, 88, 89, 90, 265, 276, 278, 280, 281, 282]
21	$[0, \frac{1}{4}, \frac{1}{2}]$	[74, 79, 87, 177, 187, 192, 266, 271, 279, 369, 379, 384]

continued ...

Table 2

No.	position	mapping
22	$[0, \frac{1}{2}, \frac{1}{4}]$	[75, 76, 83, 130, 140, 141, 267, 268, 275, 322, 332, 333]
23	$[\frac{1}{2}, \frac{1}{4}, 0]$	[81, 91, 96, 170, 175, 183, 273, 283, 288, 362, 367, 375]
24	$[\frac{1}{2}, 0, \frac{1}{4}]$	[82, 92, 93, 123, 124, 131, 274, 284, 285, 315, 316, 323]
25	$[\frac{3}{4}, \frac{1}{4}, \frac{3}{4}]$	[97, 108, 110, 112, 113, 114, 289, 300, 302, 304, 305, 306]
26	$[\frac{3}{4}, \frac{1}{2}, 0]$	[101, 102, 109, 152, 166, 167, 293, 294, 301, 344, 358, 359]
27	$[\frac{3}{4}, 0, \frac{1}{2}]$	[104, 118, 119, 149, 150, 157, 296, 310, 311, 341, 342, 349]
28	$[\frac{1}{4}, \frac{3}{4}, \frac{1}{4}]$	[121, 132, 134, 136, 137, 138, 313, 324, 326, 328, 329, 330]
29	$[\frac{1}{4}, 0, \frac{1}{2}]$	[125, 126, 133, 176, 190, 191, 317, 318, 325, 368, 382, 383]
30	$[\frac{1}{4}, \frac{1}{2}, 0]$	[128, 142, 143, 173, 174, 181, 320, 334, 335, 365, 366, 373]
31	$[\frac{3}{4}, \frac{3}{4}, \frac{1}{4}]$	[145, 156, 158, 160, 161, 162, 337, 348, 350, 352, 353, 354]
32	$[\frac{1}{4}, \frac{1}{4}, \frac{3}{4}]$	[169, 180, 182, 184, 185, 186, 361, 372, 374, 376, 377, 378]

Table 3: Wyckoff site: 32c, site symmetry: . -3'. 1'

No.	position	mapping
1	$[0, 0, 0]$	[1, 17, 18, 25, 41, 42, 193, 209, 210, 217, 233, 234]
2	$[\frac{1}{4}, \frac{1}{2}, \frac{1}{4}]$	[2, 7, 15, 26, 31, 39, 194, 199, 207, 218, 223, 231]
3	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{2}]$	[3, 4, 11, 27, 28, 35, 195, 196, 203, 219, 220, 227]
4	$[\frac{1}{2}, \frac{1}{4}, \frac{1}{4}]$	[5, 6, 13, 29, 30, 37, 197, 198, 205, 221, 222, 229]
5	$[0, \frac{1}{4}, \frac{1}{4}]$	[8, 22, 23, 32, 46, 47, 200, 214, 215, 224, 238, 239]
6	$[\frac{1}{4}, 0, \frac{1}{4}]$	[9, 19, 24, 33, 43, 48, 201, 211, 216, 225, 235, 240]
7	$[\frac{1}{4}, \frac{1}{4}, 0]$	[10, 20, 21, 34, 44, 45, 202, 212, 213, 226, 236, 237]
8	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[12, 14, 16, 36, 38, 40, 204, 206, 208, 228, 230, 232]
9	$[0, \frac{1}{2}, \frac{1}{2}]$	[49, 65, 66, 73, 89, 90, 241, 257, 258, 265, 281, 282]
10	$[\frac{1}{4}, 0, \frac{3}{4}]$	[50, 55, 63, 74, 79, 87, 242, 247, 255, 266, 271, 279]
11	$[\frac{1}{4}, \frac{3}{4}, 0]$	[51, 52, 59, 75, 76, 83, 243, 244, 251, 267, 268, 275]
12	$[\frac{1}{2}, \frac{3}{4}, \frac{3}{4}]$	[53, 54, 61, 77, 78, 85, 245, 246, 253, 269, 270, 277]
13	$[0, \frac{3}{4}, \frac{3}{4}]$	[56, 70, 71, 80, 94, 95, 248, 262, 263, 272, 286, 287]
14	$[\frac{1}{4}, \frac{1}{2}, \frac{3}{4}]$	[57, 67, 72, 81, 91, 96, 249, 259, 264, 273, 283, 288]
15	$[\frac{1}{4}, \frac{3}{4}, \frac{1}{2}]$	[58, 68, 69, 82, 92, 93, 250, 260, 261, 274, 284, 285]
16	$[\frac{1}{2}, 0, 0]$	[60, 62, 64, 84, 86, 88, 252, 254, 256, 276, 278, 280]
17	$[\frac{1}{2}, 0, \frac{1}{2}]$	[97, 113, 114, 121, 137, 138, 289, 305, 306, 313, 329, 330]
18	$[\frac{3}{4}, \frac{1}{2}, \frac{3}{4}]$	[98, 103, 111, 122, 127, 135, 290, 295, 303, 314, 319, 327]
19	$[\frac{3}{4}, \frac{1}{4}, 0]$	[99, 100, 107, 123, 124, 131, 291, 292, 299, 315, 316, 323]
20	$[0, \frac{1}{4}, \frac{3}{4}]$	[101, 102, 109, 125, 126, 133, 293, 294, 301, 317, 318, 325]
21	$[\frac{1}{2}, \frac{1}{4}, \frac{3}{4}]$	[104, 118, 119, 128, 142, 143, 296, 310, 311, 320, 334, 335]
22	$[\frac{3}{4}, 0, \frac{3}{4}]$	[105, 115, 120, 129, 139, 144, 297, 307, 312, 321, 331, 336]
23	$[\frac{3}{4}, \frac{1}{4}, \frac{1}{2}]$	[106, 116, 117, 130, 140, 141, 298, 308, 309, 322, 332, 333]
24	$[0, \frac{1}{2}, 0]$	[108, 110, 112, 132, 134, 136, 300, 302, 304, 324, 326, 328]
25	$[\frac{1}{2}, \frac{1}{2}, 0]$	[145, 161, 162, 169, 185, 186, 337, 353, 354, 361, 377, 378]
26	$[\frac{3}{4}, 0, \frac{1}{4}]$	[146, 151, 159, 170, 175, 183, 338, 343, 351, 362, 367, 375]
27	$[\frac{3}{4}, \frac{3}{4}, \frac{1}{2}]$	[147, 148, 155, 171, 172, 179, 339, 340, 347, 363, 364, 371]
28	$[0, \frac{3}{4}, \frac{1}{4}]$	[149, 150, 157, 173, 174, 181, 341, 342, 349, 365, 366, 373]
29	$[\frac{1}{2}, \frac{3}{4}, \frac{1}{4}]$	[152, 166, 167, 176, 190, 191, 344, 358, 359, 368, 382, 383]

continued ...

Table 3

No.	position	mapping
30	$[\frac{3}{4}, \frac{1}{2}, \frac{1}{4}]$	[153, 163, 168, 177, 187, 192, 345, 355, 360, 369, 379, 384]
31	$[\frac{3}{4}, \frac{3}{4}, 0]$	[154, 164, 165, 178, 188, 189, 346, 356, 357, 370, 380, 381]
32	$[0, 0, \frac{1}{2}]$	[156, 158, 160, 180, 182, 184, 348, 350, 352, 372, 374, 376]

Table 4: Wyckoff site: 48d, site symmetry: -4..1'

No.	position	mapping
1	$[\frac{7}{8}, \frac{1}{8}, \frac{1}{8}]$	[1, 8, 123, 170, 193, 200, 315, 362]
2	$[\frac{1}{8}, \frac{3}{8}, \frac{3}{8}]$	[2, 3, 32, 73, 194, 195, 224, 265]
3	$[\frac{3}{8}, \frac{3}{8}, \frac{5}{8}]$	[4, 16, 91, 143, 196, 208, 283, 335]
4	$[\frac{3}{8}, \frac{3}{8}, \frac{1}{8}]$	[5, 15, 45, 186, 197, 207, 237, 378]
5	$[\frac{3}{8}, \frac{1}{8}, \frac{3}{8}]$	[6, 11, 48, 137, 198, 203, 240, 329]
6	$[\frac{3}{8}, \frac{5}{8}, \frac{3}{8}]$	[7, 12, 92, 190, 199, 204, 284, 382]
7	$[\frac{3}{8}, \frac{1}{8}, \frac{1}{8}]$	[9, 10, 37, 86, 201, 202, 229, 278]
8	$[\frac{5}{8}, \frac{3}{8}, \frac{3}{8}]$	[13, 14, 130, 177, 205, 206, 322, 369]
9	$[\frac{1}{8}, \frac{7}{8}, \frac{1}{8}]$	[17, 24, 83, 174, 209, 216, 275, 366]
10	$[\frac{1}{8}, \frac{1}{8}, \frac{7}{8}]$	[18, 21, 87, 125, 210, 213, 279, 317]
11	$[\frac{1}{8}, \frac{1}{8}, \frac{3}{8}]$	[19, 23, 28, 184, 211, 215, 220, 376]
12	$[\frac{1}{8}, \frac{3}{8}, \frac{1}{8}]$	[20, 22, 31, 132, 212, 214, 223, 324]
13	$[\frac{1}{8}, \frac{7}{8}, \frac{7}{8}]$	[25, 50, 51, 80, 217, 242, 243, 272]
14	$[\frac{3}{8}, \frac{5}{8}, \frac{1}{8}]$	[26, 75, 145, 152, 218, 267, 337, 344]
15	$[\frac{3}{8}, \frac{1}{8}, \frac{5}{8}]$	[27, 74, 97, 104, 219, 266, 289, 296]
16	$[\frac{5}{8}, \frac{1}{8}, \frac{3}{8}]$	[29, 114, 117, 183, 221, 306, 309, 375]
17	$[\frac{5}{8}, \frac{3}{8}, \frac{1}{8}]$	[30, 131, 161, 168, 222, 323, 353, 360]
18	$[\frac{1}{8}, \frac{7}{8}, \frac{3}{8}]$	[33, 82, 157, 158, 225, 274, 349, 350]
19	$[\frac{1}{8}, \frac{3}{8}, \frac{7}{8}]$	[34, 81, 109, 110, 226, 273, 301, 302]
20	$[\frac{1}{8}, \frac{3}{8}, \frac{5}{8}]$	[35, 65, 72, 126, 227, 257, 264, 318]
21	$[\frac{5}{8}, \frac{3}{8}, \frac{5}{8}]$	[36, 116, 118, 127, 228, 308, 310, 319]
22	$[\frac{3}{8}, \frac{5}{8}, \frac{5}{8}]$	[38, 57, 58, 85, 230, 249, 250, 277]
23	$[\frac{1}{8}, \frac{5}{8}, \frac{3}{8}]$	[39, 66, 69, 173, 231, 258, 261, 365]
24	$[\frac{5}{8}, \frac{5}{8}, \frac{3}{8}]$	[40, 163, 167, 172, 232, 355, 359, 364]
25	$[\frac{7}{8}, \frac{1}{8}, \frac{7}{8}]$	[41, 102, 107, 144, 233, 294, 299, 336]
26	$[\frac{7}{8}, \frac{7}{8}, \frac{1}{8}]$	[42, 149, 159, 189, 234, 341, 351, 381]
27	$[\frac{3}{8}, \frac{7}{8}, \frac{1}{8}]$	[43, 52, 64, 191, 235, 244, 256, 383]
28	$[\frac{3}{8}, \frac{1}{8}, \frac{7}{8}]$	[44, 55, 60, 142, 236, 247, 252, 334]
29	$[\frac{7}{8}, \frac{1}{8}, \frac{3}{8}]$	[46, 140, 151, 156, 238, 332, 343, 348]
30	$[\frac{7}{8}, \frac{3}{8}, \frac{1}{8}]$	[47, 100, 112, 187, 239, 292, 304, 379]
31	$[\frac{7}{8}, \frac{5}{8}, \frac{5}{8}]$	[49, 56, 122, 171, 241, 248, 314, 363]
32	$[\frac{3}{8}, \frac{7}{8}, \frac{5}{8}]$	[53, 63, 93, 138, 245, 255, 285, 330]
33	$[\frac{3}{8}, \frac{5}{8}, \frac{7}{8}]$	[54, 59, 96, 185, 246, 251, 288, 377]
34	$[\frac{5}{8}, \frac{7}{8}, \frac{7}{8}]$	[61, 62, 129, 178, 253, 254, 321, 370]
35	$[\frac{1}{8}, \frac{5}{8}, \frac{7}{8}]$	[67, 71, 76, 136, 259, 263, 268, 328]
36	$[\frac{1}{8}, \frac{7}{8}, \frac{5}{8}]$	[68, 70, 79, 180, 260, 262, 271, 372]
37	$[\frac{5}{8}, \frac{5}{8}, \frac{7}{8}]$	[77, 135, 162, 165, 269, 327, 354, 357]

continued ...

Table 4

No.	position	mapping
38	$[\frac{5}{8}, \frac{7}{8}, \frac{5}{8}]$	[78, 113, 120, 179, 270, 305, 312, 371]
39	$[\frac{5}{8}, \frac{7}{8}, \frac{1}{8}]$	[84, 164, 166, 175, 276, 356, 358, 367]
40	$[\frac{5}{8}, \frac{1}{8}, \frac{7}{8}]$	[88, 115, 119, 124, 280, 307, 311, 316]
41	$[\frac{7}{8}, \frac{5}{8}, \frac{3}{8}]$	[89, 150, 155, 192, 281, 342, 347, 384]
42	$[\frac{7}{8}, \frac{3}{8}, \frac{5}{8}]$	[90, 101, 111, 141, 282, 293, 303, 333]
43	$[\frac{7}{8}, \frac{5}{8}, \frac{7}{8}]$	[94, 103, 108, 188, 286, 295, 300, 380]
44	$[\frac{7}{8}, \frac{7}{8}, \frac{5}{8}]$	[95, 139, 148, 160, 287, 331, 340, 352]
45	$[\frac{5}{8}, \frac{3}{8}, \frac{7}{8}]$	[98, 99, 128, 169, 290, 291, 320, 361]
46	$[\frac{7}{8}, \frac{1}{8}, \frac{5}{8}]$	[105, 106, 133, 182, 297, 298, 325, 374]
47	$[\frac{5}{8}, \frac{7}{8}, \frac{3}{8}]$	[121, 146, 147, 176, 313, 338, 339, 368]
48	$[\frac{7}{8}, \frac{5}{8}, \frac{1}{8}]$	[134, 153, 154, 181, 326, 345, 346, 373]

Table 5: Wyckoff site: 64e, site symmetry: .3.1'

No.	position	mapping
1	$[x, x, x]$	[1, 17, 18, 193, 209, 210]
2	$[x + \frac{1}{4}, \frac{1}{2} - x, x + \frac{1}{4}]$	[2, 7, 15, 194, 199, 207]
3	$[x + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - x]$	[3, 4, 11, 195, 196, 203]
4	$[\frac{1}{2} - x, x + \frac{1}{4}, x + \frac{1}{4}]$	[5, 6, 13, 197, 198, 205]
5	$[x, \frac{1}{4} - x, \frac{1}{4} - x]$	[8, 22, 23, 200, 214, 215]
6	$[\frac{1}{4} - x, x, \frac{1}{4} - x]$	[9, 19, 24, 201, 211, 216]
7	$[\frac{1}{4} - x, \frac{1}{4} - x, x]$	[10, 20, 21, 202, 212, 213]
8	$[\frac{1}{2} - x, \frac{1}{2} - x, \frac{1}{2} - x]$	[12, 14, 16, 204, 206, 208]
9	$[-x, -x, -x]$	[25, 41, 42, 217, 233, 234]
10	$[\frac{1}{4} - x, x + \frac{1}{2}, \frac{1}{4} - x]$	[26, 31, 39, 218, 223, 231]
11	$[\frac{1}{4} - x, \frac{1}{4} - x, x + \frac{1}{2}]$	[27, 28, 35, 219, 220, 227]
12	$[x + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - x]$	[29, 30, 37, 221, 222, 229]
13	$[-x, x + \frac{1}{4}, x + \frac{1}{4}]$	[32, 46, 47, 224, 238, 239]
14	$[x + \frac{1}{4}, -x, x + \frac{1}{4}]$	[33, 43, 48, 225, 235, 240]
15	$[x + \frac{1}{4}, x + \frac{1}{4}, -x]$	[34, 44, 45, 226, 236, 237]
16	$[x + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$	[36, 38, 40, 228, 230, 232]
17	$[x, x + \frac{1}{2}, x + \frac{1}{2}]$	[49, 65, 66, 241, 257, 258]
18	$[x + \frac{1}{4}, -x, x + \frac{3}{4}]$	[50, 55, 63, 242, 247, 255]
19	$[x + \frac{1}{4}, x + \frac{3}{4}, -x]$	[51, 52, 59, 243, 244, 251]
20	$[\frac{1}{2} - x, x + \frac{3}{4}, x + \frac{3}{4}]$	[53, 54, 61, 245, 246, 253]
21	$[x, \frac{3}{4} - x, \frac{3}{4} - x]$	[56, 70, 71, 248, 262, 263]
22	$[\frac{1}{4} - x, x + \frac{1}{2}, \frac{3}{4} - x]$	[57, 67, 72, 249, 259, 264]
23	$[\frac{1}{4} - x, \frac{3}{4} - x, x + \frac{1}{2}]$	[58, 68, 69, 250, 260, 261]
24	$[\frac{1}{2} - x, -x, -x]$	[60, 62, 64, 252, 254, 256]
25	$[-x, \frac{1}{2} - x, \frac{1}{2} - x]$	[73, 89, 90, 265, 281, 282]
26	$[\frac{1}{4} - x, x, \frac{3}{4} - x]$	[74, 79, 87, 266, 271, 279]
27	$[\frac{1}{4} - x, \frac{3}{4} - x, x]$	[75, 76, 83, 267, 268, 275]
28	$[x + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - x]$	[77, 78, 85, 269, 270, 277]
29	$[-x, x + \frac{3}{4}, x + \frac{3}{4}]$	[80, 94, 95, 272, 286, 287]

continued ...

Table 5

No.	position	mapping
30	$[x + \frac{1}{4}, \frac{1}{2} - x, x + \frac{3}{4}]$	[81, 91, 96, 273, 283, 288]
31	$[x + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - x]$	[82, 92, 93, 274, 284, 285]
32	$[\frac{1}{2}, x, x]$	[84, 86, 88, 276, 278, 280]
33	$[x + \frac{1}{2}, x, x + \frac{1}{2}]$	[97, 113, 114, 289, 305, 306]
34	$[x + \frac{3}{4}, \frac{1}{2} - x, x + \frac{3}{4}]$	[98, 103, 111, 290, 295, 303]
35	$[x + \frac{3}{4}, x + \frac{1}{4}, -x]$	[99, 100, 107, 291, 292, 299]
36	$[-x, x + \frac{1}{4}, x + \frac{3}{4}]$	[101, 102, 109, 293, 294, 301]
37	$[x + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - x]$	[104, 118, 119, 296, 310, 311]
38	$[\frac{3}{4} - x, x, \frac{3}{4} - x]$	[105, 115, 120, 297, 307, 312]
39	$[\frac{3}{4} - x, \frac{1}{4} - x, x + \frac{1}{2}]$	[106, 116, 117, 298, 308, 309]
40	$[-x, \frac{1}{2} - x, -x]$	[108, 110, 112, 300, 302, 304]
41	$[\frac{1}{2} - x, -x, \frac{1}{2} - x]$	[121, 137, 138, 313, 329, 330]
42	$[\frac{3}{4} - x, x + \frac{1}{2}, \frac{3}{4} - x]$	[122, 127, 135, 314, 319, 327]
43	$[\frac{3}{4} - x, \frac{1}{4} - x, x]$	[123, 124, 131, 315, 316, 323]
44	$[x, \frac{1}{4} - x, \frac{3}{4} - x]$	[125, 126, 133, 317, 318, 325]
45	$[\frac{1}{2} - x, x + \frac{1}{4}, x + \frac{3}{4}]$	[128, 142, 143, 320, 334, 335]
46	$[x + \frac{3}{4}, -x, x + \frac{3}{4}]$	[129, 139, 144, 321, 331, 336]
47	$[x + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - x]$	[130, 140, 141, 322, 332, 333]
48	$[x, x + \frac{1}{2}, x]$	[132, 134, 136, 324, 326, 328]
49	$[x + \frac{1}{2}, x + \frac{1}{2}, x]$	[145, 161, 162, 337, 353, 354]
50	$[x + \frac{3}{4}, -x, x + \frac{1}{4}]$	[146, 151, 159, 338, 343, 351]
51	$[x + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - x]$	[147, 148, 155, 339, 340, 347]
52	$[-x, x + \frac{3}{4}, x + \frac{1}{4}]$	[149, 150, 157, 341, 342, 349]
53	$[x + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - x]$	[152, 166, 167, 344, 358, 359]
54	$[\frac{3}{4} - x, x + \frac{1}{2}, \frac{1}{4} - x]$	[153, 163, 168, 345, 355, 360]
55	$[\frac{3}{4} - x, \frac{3}{4} - x, x]$	[154, 164, 165, 346, 356, 357]
56	$[-x, -x, \frac{1}{2} - x]$	[156, 158, 160, 348, 350, 352]
57	$[\frac{1}{2} - x, \frac{1}{2} - x, -x]$	[169, 185, 186, 361, 377, 378]
58	$[\frac{3}{4} - x, x, \frac{1}{4} - x]$	[170, 175, 183, 362, 367, 375]
59	$[\frac{3}{4} - x, \frac{3}{4} - x, x + \frac{1}{2}]$	[171, 172, 179, 363, 364, 371]
60	$[x, \frac{3}{4} - x, \frac{1}{4} - x]$	[173, 174, 181, 365, 366, 373]
61	$[\frac{1}{2} - x, x + \frac{3}{4}, x + \frac{1}{4}]$	[176, 190, 191, 368, 382, 383]
62	$[x + \frac{3}{4}, \frac{1}{2} - x, x + \frac{1}{4}]$	[177, 187, 192, 369, 379, 384]
63	$[x + \frac{3}{4}, x + \frac{3}{4}, -x]$	[178, 188, 189, 370, 380, 381]
64	$[x, x, x + \frac{1}{2}]$	[180, 182, 184, 372, 374, 376]

Table 6: Wyckoff site: 96f, site symmetry: 2..1'

No.	position	mapping
1	$[x, \frac{1}{8}, \frac{1}{8}]$	[1, 8, 193, 200]
2	$[x + \frac{1}{4}, \frac{3}{8}, \frac{3}{8}]$	[2, 3, 194, 195]
3	$[\frac{3}{8}, \frac{3}{8}, \frac{1}{2} - x]$	[4, 16, 196, 208]
4	$[\frac{3}{8}, \frac{3}{8}, x + \frac{1}{4}]$	[5, 15, 197, 207]
5	$[\frac{3}{8}, x + \frac{1}{4}, \frac{3}{8}]$	[6, 11, 198, 203]

continued ...

Table 6

No.	position	mapping
6	$[\frac{3}{8}, \frac{1}{2} - x, \frac{3}{8}]$	[7, 12, 199, 204]
7	$[\frac{1}{4} - x, \frac{1}{8}, \frac{1}{8}]$	[9, 10, 201, 202]
8	$[\frac{1}{2} - x, \frac{3}{8}, \frac{3}{8}]$	[13, 14, 205, 206]
9	$[\frac{1}{8}, x, \frac{1}{8}]$	[17, 24, 209, 216]
10	$[\frac{1}{8}, \frac{1}{8}, x]$	[18, 21, 210, 213]
11	$[\frac{1}{8}, \frac{1}{8}, \frac{1}{4} - x]$	[19, 23, 211, 215]
12	$[\frac{1}{8}, \frac{1}{4} - x, \frac{1}{8}]$	[20, 22, 212, 214]
13	$[-x, \frac{7}{8}, \frac{7}{8}]$	[25, 80, 217, 272]
14	$[\frac{1}{4} - x, \frac{5}{8}, \frac{1}{8}]$	[26, 75, 218, 267]
15	$[\frac{1}{4} - x, \frac{1}{8}, \frac{5}{8}]$	[27, 74, 219, 266]
16	$[\frac{1}{8}, \frac{1}{8}, x + \frac{1}{2}]$	[28, 184, 220, 376]
17	$[\frac{5}{8}, \frac{1}{8}, \frac{1}{4} - x]$	[29, 183, 221, 375]
18	$[\frac{5}{8}, \frac{1}{4} - x, \frac{1}{8}]$	[30, 131, 222, 323]
19	$[\frac{1}{8}, x + \frac{1}{2}, \frac{1}{8}]$	[31, 132, 223, 324]
20	$[-x, \frac{3}{8}, \frac{3}{8}]$	[32, 73, 224, 265]
21	$[x + \frac{1}{4}, \frac{7}{8}, \frac{3}{8}]$	[33, 82, 225, 274]
22	$[x + \frac{1}{4}, \frac{3}{8}, \frac{7}{8}]$	[34, 81, 226, 273]
23	$[\frac{1}{8}, \frac{1}{4} - x, \frac{5}{8}]$	[35, 126, 227, 318]
24	$[\frac{5}{8}, x + \frac{1}{2}, \frac{5}{8}]$	[36, 127, 228, 319]
25	$[x + \frac{1}{2}, \frac{1}{8}, \frac{1}{8}]$	[37, 86, 229, 278]
26	$[x + \frac{1}{2}, \frac{5}{8}, \frac{5}{8}]$	[38, 85, 230, 277]
27	$[\frac{1}{8}, \frac{5}{8}, \frac{1}{4} - x]$	[39, 173, 231, 365]
28	$[\frac{5}{8}, \frac{5}{8}, x + \frac{1}{2}]$	[40, 172, 232, 364]
29	$[\frac{7}{8}, -x, \frac{7}{8}]$	[41, 144, 233, 336]
30	$[\frac{7}{8}, \frac{7}{8}, -x]$	[42, 189, 234, 381]
31	$[\frac{3}{8}, \frac{7}{8}, x + \frac{1}{4}]$	[43, 191, 235, 383]
32	$[\frac{3}{8}, x + \frac{1}{4}, \frac{7}{8}]$	[44, 142, 236, 334]
33	$[\frac{3}{8}, \frac{3}{8}, -x]$	[45, 186, 237, 378]
34	$[\frac{7}{8}, x + \frac{1}{4}, \frac{3}{8}]$	[46, 140, 238, 332]
35	$[\frac{7}{8}, \frac{3}{8}, x + \frac{1}{4}]$	[47, 187, 239, 379]
36	$[\frac{3}{8}, -x, \frac{3}{8}]$	[48, 137, 240, 329]
37	$[x, \frac{5}{8}, \frac{5}{8}]$	[49, 56, 241, 248]
38	$[x + \frac{1}{4}, \frac{7}{8}, \frac{7}{8}]$	[50, 51, 242, 243]
39	$[\frac{3}{8}, \frac{7}{8}, -x]$	[52, 64, 244, 256]
40	$[\frac{3}{8}, \frac{7}{8}, x + \frac{3}{4}]$	[53, 63, 245, 255]
41	$[\frac{3}{8}, x + \frac{3}{4}, \frac{7}{8}]$	[54, 59, 246, 251]
42	$[\frac{3}{8}, -x, \frac{7}{8}]$	[55, 60, 247, 252]
43	$[\frac{1}{4} - x, \frac{5}{8}, \frac{5}{8}]$	[57, 58, 249, 250]
44	$[\frac{1}{2} - x, \frac{7}{8}, \frac{7}{8}]$	[61, 62, 253, 254]
45	$[\frac{1}{8}, x + \frac{1}{2}, \frac{5}{8}]$	[65, 72, 257, 264]
46	$[\frac{1}{8}, \frac{5}{8}, x + \frac{1}{2}]$	[66, 69, 258, 261]
47	$[\frac{1}{8}, \frac{5}{8}, \frac{3}{4} - x]$	[67, 71, 259, 263]
48	$[\frac{1}{8}, \frac{3}{4} - x, \frac{5}{8}]$	[68, 70, 260, 262]
49	$[\frac{1}{8}, \frac{5}{8}, x]$	[76, 136, 268, 328]
50	$[\frac{5}{8}, \frac{5}{8}, \frac{3}{4} - x]$	[77, 135, 269, 327]
51	$[\frac{5}{8}, \frac{3}{4} - x, \frac{5}{8}]$	[78, 179, 270, 371]
52	$[\frac{1}{8}, x, \frac{5}{8}]$	[79, 180, 271, 372]

continued ...

Table 6

No.	position	mapping
53	$[\frac{1}{8}, \frac{3}{4} - x, \frac{1}{8}]$	[83, 174, 275, 366]
54	$[\frac{5}{8}, x, \frac{1}{8}]$	[84, 175, 276, 367]
55	$[\frac{1}{8}, \frac{1}{8}, \frac{3}{4} - x]$	[87, 125, 279, 317]
56	$[\frac{5}{8}, \frac{1}{8}, x]$	[88, 124, 280, 316]
57	$[\frac{7}{8}, \frac{1}{2} - x, \frac{3}{8}]$	[89, 192, 281, 384]
58	$[\frac{7}{8}, \frac{3}{8}, \frac{1}{2} - x]$	[90, 141, 282, 333]
59	$[\frac{3}{8}, \frac{3}{8}, x + \frac{3}{4}]$	[91, 143, 283, 335]
60	$[\frac{3}{8}, x + \frac{3}{4}, \frac{3}{8}]$	[92, 190, 284, 382]
61	$[\frac{3}{8}, \frac{7}{8}, \frac{1}{2} - x]$	[93, 138, 285, 330]
62	$[\frac{7}{8}, x + \frac{3}{4}, \frac{7}{8}]$	[94, 188, 286, 380]
63	$[\frac{7}{8}, \frac{7}{8}, x + \frac{3}{4}]$	[95, 139, 287, 331]
64	$[\frac{3}{8}, \frac{1}{2} - x, \frac{7}{8}]$	[96, 185, 288, 377]
65	$[x + \frac{1}{2}, \frac{1}{8}, \frac{5}{8}]$	[97, 104, 289, 296]
66	$[x + \frac{3}{4}, \frac{3}{8}, \frac{7}{8}]$	[98, 99, 290, 291]
67	$[\frac{7}{8}, \frac{3}{8}, -x]$	[100, 112, 292, 304]
68	$[\frac{7}{8}, \frac{3}{8}, x + \frac{3}{4}]$	[101, 111, 293, 303]
69	$[\frac{7}{8}, x + \frac{1}{4}, \frac{7}{8}]$	[102, 107, 294, 299]
70	$[\frac{7}{8}, \frac{1}{2} - x, \frac{7}{8}]$	[103, 108, 295, 300]
71	$[\frac{3}{4} - x, \frac{1}{8}, \frac{5}{8}]$	[105, 106, 297, 298]
72	$[-x, \frac{3}{8}, \frac{7}{8}]$	[109, 110, 301, 302]
73	$[\frac{5}{8}, x, \frac{5}{8}]$	[113, 120, 305, 312]
74	$[\frac{5}{8}, \frac{1}{8}, x + \frac{1}{2}]$	[114, 117, 306, 309]
75	$[\frac{5}{8}, \frac{1}{8}, \frac{3}{4} - x]$	[115, 119, 307, 311]
76	$[\frac{5}{8}, \frac{1}{4} - x, \frac{5}{8}]$	[116, 118, 308, 310]
77	$[\frac{1}{2} - x, \frac{7}{8}, \frac{3}{8}]$	[121, 176, 313, 368]
78	$[\frac{3}{4} - x, \frac{5}{8}, \frac{5}{8}]$	[122, 171, 314, 363]
79	$[\frac{3}{4} - x, \frac{1}{8}, \frac{1}{8}]$	[123, 170, 315, 362]
80	$[\frac{1}{2} - x, \frac{3}{8}, \frac{7}{8}]$	[128, 169, 320, 361]
81	$[x + \frac{3}{4}, \frac{7}{8}, \frac{7}{8}]$	[129, 178, 321, 370]
82	$[x + \frac{3}{4}, \frac{3}{8}, \frac{3}{8}]$	[130, 177, 322, 369]
83	$[x, \frac{1}{8}, \frac{5}{8}]$	[133, 182, 325, 374]
84	$[x, \frac{5}{8}, \frac{1}{8}]$	[134, 181, 326, 373]
85	$[x + \frac{1}{2}, \frac{5}{8}, \frac{1}{8}]$	[145, 152, 337, 344]
86	$[x + \frac{3}{4}, \frac{7}{8}, \frac{3}{8}]$	[146, 147, 338, 339]
87	$[\frac{7}{8}, \frac{7}{8}, \frac{1}{2} - x]$	[148, 160, 340, 352]
88	$[\frac{7}{8}, \frac{7}{8}, x + \frac{1}{4}]$	[149, 159, 341, 351]
89	$[\frac{7}{8}, x + \frac{3}{4}, \frac{3}{8}]$	[150, 155, 342, 347]
90	$[\frac{7}{8}, -x, \frac{3}{8}]$	[151, 156, 343, 348]
91	$[\frac{3}{4} - x, \frac{5}{8}, \frac{1}{8}]$	[153, 154, 345, 346]
92	$[-x, \frac{7}{8}, \frac{3}{8}]$	[157, 158, 349, 350]
93	$[\frac{5}{8}, x + \frac{1}{2}, \frac{1}{8}]$	[161, 168, 353, 360]
94	$[\frac{5}{8}, \frac{5}{8}, x]$	[162, 165, 354, 357]
95	$[\frac{5}{8}, \frac{5}{8}, \frac{1}{4} - x]$	[163, 167, 355, 359]
96	$[\frac{5}{8}, \frac{3}{4} - x, \frac{1}{8}]$	[164, 166, 356, 358]

Table 7: Wyckoff site: 96g, site symmetry: ..21'

No.	position	mapping
1	$[\frac{1}{4}, y, -y]$	[1,62,193,254]
2	$[\frac{1}{2}, y + \frac{1}{2}, y + \frac{1}{4}]$	[2,153,194,345]
3	$[\frac{1}{2}, \frac{1}{4} - y, \frac{1}{2} - y]$	[3,106,195,298]
4	$[\frac{1}{4} - y, y + \frac{1}{4}, \frac{1}{4}]$	[4,21,196,213]
5	$[y + \frac{1}{2}, y + \frac{1}{4}, \frac{1}{2}]$	[5,119,197,311]
6	$[\frac{1}{2} - y, \frac{1}{2}, \frac{1}{4} - y]$	[6,166,198,358]
7	$[y + \frac{1}{4}, \frac{1}{4}, \frac{1}{4} - y]$	[7,24,199,216]
8	$[\frac{1}{4}, \frac{1}{4} - y, y + \frac{1}{4}]$	[8,13,200,205]
9	$[0, y, y + \frac{1}{4}]$	[9,146,201,338]
10	$[0, \frac{1}{4} - y, -y]$	[10,99,202,291]
11	$[y + \frac{1}{4}, \frac{1}{2}, y + \frac{1}{2}]$	[11,68,203,260]
12	$[\frac{1}{2} - y, \frac{1}{4}, y + \frac{1}{2}]$	[12,113,204,305]
13	$[\frac{1}{4}, y + \frac{1}{2}, \frac{1}{2} - y]$	[14,49,206,241]
14	$[\frac{1}{4} - y, \frac{1}{2} - y, \frac{1}{2}]$	[15,67,207,259]
15	$[y + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{4}]$	[16,162,208,354]
16	$[-y, \frac{1}{4}, y]$	[17,108,209,300]
17	$[y, -y, \frac{1}{4}]$	[18,160,210,352]
18	$[\frac{1}{4} - y, -y, 0]$	[19,63,211,255]
19	$[y + \frac{1}{4}, 0, y]$	[20,59,212,251]
20	$[-y, 0, \frac{1}{4} - y]$	[22,150,214,342]
21	$[y, y + \frac{1}{4}, 0]$	[23,101,215,293]
22	$[\frac{3}{4}, -y, y]$	[25,86,217,278]
23	$[0, \frac{1}{2} - y, \frac{1}{4} - y]$	[26,177,218,369]
24	$[0, y + \frac{1}{4}, y + \frac{1}{2}]$	[27,130,219,322]
25	$[y + \frac{1}{4}, \frac{1}{4} - y, \frac{3}{4}]$	[28,45,220,237]
26	$[\frac{1}{2} - y, \frac{1}{4} - y, 0]$	[29,143,221,335]
27	$[y + \frac{1}{2}, 0, y + \frac{1}{4}]$	[30,190,222,382]
28	$[\frac{1}{4} - y, \frac{3}{4}, y + \frac{1}{4}]$	[31,48,223,240]
29	$[\frac{3}{4}, y + \frac{1}{4}, \frac{1}{4} - y]$	[32,37,224,229]
30	$[\frac{1}{2}, -y, \frac{1}{4} - y]$	[33,170,225,362]
31	$[\frac{1}{2}, y + \frac{1}{4}, y]$	[34,123,226,315]
32	$[\frac{1}{4} - y, 0, \frac{1}{2} - y]$	[35,92,227,284]
33	$[y + \frac{1}{2}, \frac{3}{4}, \frac{1}{2} - y]$	[36,137,228,329]
34	$[\frac{3}{4}, \frac{1}{2} - y, y + \frac{1}{2}]$	[38,73,230,265]
35	$[y + \frac{1}{4}, y + \frac{1}{2}, 0]$	[39,91,231,283]
36	$[\frac{1}{2} - y, y + \frac{1}{2}, \frac{3}{4}]$	[40,186,232,378]
37	$[y, \frac{3}{4}, -y]$	[41,132,233,324]
38	$[-y, y, \frac{3}{4}]$	[42,184,234,376]
39	$[y + \frac{1}{4}, y, \frac{1}{2}]$	[43,87,235,279]
40	$[\frac{1}{4} - y, \frac{1}{2}, -y]$	[44,83,236,275]
41	$[y, \frac{1}{2}, y + \frac{1}{4}]$	[46,174,238,366]
42	$[-y, \frac{1}{4} - y, \frac{1}{2}]$	[47,125,239,317]
43	$[\frac{1}{2}, y, y + \frac{3}{4}]$	[50,105,242,297]
44	$[\frac{1}{2}, \frac{3}{4} - y, -y]$	[51,154,243,346]
45	$[\frac{1}{4} - y, y + \frac{3}{4}, \frac{3}{4}]$	[52,69,244,261]
46	$[y + \frac{1}{2}, y + \frac{3}{4}, 0]$	[53,167,245,359]

continued ...

Table 7

No.	position	mapping
47	$[\frac{1}{2} - y, 0, \frac{3}{4} - y]$	[54, 118, 246, 310]
48	$[y + \frac{1}{4}, \frac{3}{4}, \frac{3}{4} - y]$	[55, 72, 247, 264]
49	$[\frac{1}{4}, \frac{3}{4} - y, y + \frac{3}{4}]$	[56, 61, 248, 253]
50	$[0, y + \frac{1}{2}, y + \frac{3}{4}]$	[57, 98, 249, 290]
51	$[0, \frac{3}{4} - y, \frac{1}{2} - y]$	[58, 147, 250, 339]
52	$[\frac{1}{2} - y, \frac{3}{4}, y]$	[60, 161, 252, 353]
53	$[y + \frac{1}{2}, -y, \frac{3}{4}]$	[64, 114, 256, 306]
54	$[-y, \frac{3}{4}, y + \frac{1}{2}]$	[65, 156, 257, 348]
55	$[y, \frac{1}{2} - y, \frac{3}{4}]$	[66, 112, 258, 304]
56	$[-y, \frac{1}{2}, \frac{3}{4} - y]$	[70, 102, 262, 294]
57	$[y, y + \frac{3}{4}, \frac{1}{2}]$	[71, 149, 263, 341]
58	$[0, -y, \frac{3}{4} - y]$	[74, 129, 266, 321]
59	$[0, y + \frac{3}{4}, y]$	[75, 178, 267, 370]
60	$[y + \frac{1}{4}, \frac{3}{4} - y, \frac{1}{4}]$	[76, 93, 268, 285]
61	$[\frac{1}{2} - y, \frac{3}{4} - y, \frac{1}{2}]$	[77, 191, 269, 383]
62	$[y + \frac{1}{2}, \frac{1}{2}, y + \frac{3}{4}]$	[78, 142, 270, 334]
63	$[\frac{1}{4} - y, \frac{1}{4}, y + \frac{3}{4}]$	[79, 96, 271, 288]
64	$[\frac{3}{4}, y + \frac{3}{4}, \frac{3}{4} - y]$	[80, 85, 272, 277]
65	$[\frac{1}{2}, \frac{1}{2} - y, \frac{3}{4} - y]$	[81, 122, 273, 314]
66	$[\frac{1}{2}, y + \frac{3}{4}, y + \frac{1}{2}]$	[82, 171, 274, 363]
67	$[y + \frac{1}{2}, \frac{1}{4}, -y]$	[84, 185, 276, 377]
68	$[\frac{1}{2} - y, y, \frac{1}{4}]$	[88, 138, 280, 330]
69	$[y, \frac{1}{4}, \frac{1}{2} - y]$	[89, 180, 281, 372]
70	$[-y, y + \frac{1}{2}, \frac{1}{4}]$	[90, 136, 282, 328]
71	$[y, 0, y + \frac{3}{4}]$	[94, 126, 286, 318]
72	$[-y, \frac{3}{4} - y, 0]$	[95, 173, 287, 365]
73	$[\frac{3}{4}, y, \frac{1}{2} - y]$	[97, 158, 289, 350]
74	$[\frac{3}{4} - y, y + \frac{1}{4}, \frac{3}{4}]$	[100, 117, 292, 309]
75	$[y + \frac{3}{4}, \frac{1}{4}, \frac{3}{4} - y]$	[103, 120, 295, 312]
76	$[\frac{3}{4}, \frac{1}{4} - y, y + \frac{3}{4}]$	[104, 109, 296, 301]
77	$[y + \frac{3}{4}, \frac{1}{2}, y]$	[107, 164, 299, 356]
78	$[\frac{3}{4}, y + \frac{1}{2}, -y]$	[110, 145, 302, 337]
79	$[\frac{3}{4} - y, \frac{1}{2} - y, 0]$	[111, 163, 303, 355]
80	$[\frac{3}{4} - y, -y, \frac{1}{2}]$	[115, 159, 307, 351]
81	$[y + \frac{3}{4}, 0, y + \frac{1}{2}]$	[116, 155, 308, 347]
82	$[\frac{1}{4}, -y, y + \frac{1}{2}]$	[121, 182, 313, 374]
83	$[y + \frac{3}{4}, \frac{1}{4} - y, \frac{1}{4}]$	[124, 141, 316, 333]
84	$[\frac{3}{4} - y, \frac{3}{4}, y + \frac{3}{4}]$	[127, 144, 319, 336]
85	$[\frac{1}{4}, y + \frac{1}{4}, \frac{3}{4} - y]$	[128, 133, 320, 325]
86	$[\frac{3}{4} - y, 0, -y]$	[131, 188, 323, 380]
87	$[\frac{1}{4}, \frac{1}{2} - y, y]$	[134, 169, 326, 361]
88	$[y + \frac{3}{4}, y + \frac{1}{2}, \frac{1}{2}]$	[135, 187, 327, 379]
89	$[y + \frac{3}{4}, y, 0]$	[139, 183, 331, 375]
90	$[\frac{3}{4} - y, \frac{1}{2}, \frac{1}{2} - y]$	[140, 179, 332, 371]
91	$[\frac{3}{4} - y, y + \frac{3}{4}, \frac{1}{4}]$	[148, 165, 340, 357]
92	$[y + \frac{3}{4}, \frac{3}{4}, \frac{1}{4} - y]$	[151, 168, 343, 360]
93	$[\frac{3}{4}, \frac{3}{4} - y, y + \frac{1}{4}]$	[152, 157, 344, 349]

continued ...

Table 7

No.	position	mapping
94	$[y + \frac{3}{4}, \frac{3}{4} - y, \frac{3}{4}]$	[172, 189, 364, 381]
95	$[\frac{3}{4} - y, \frac{1}{4}, y + \frac{1}{4}]$	[175, 192, 367, 384]
96	$[\frac{1}{4}, y + \frac{3}{4}, \frac{1}{4} - y]$	[176, 181, 368, 373]

Table 8: Wyckoff site: 192h, site symmetry: 11'

No.	position	mapping
1	$[x, y, z]$	[1, 193]
2	$[x + \frac{1}{4}, \frac{1}{2} - z, y + \frac{1}{4}]$	[2, 194]
3	$[x + \frac{1}{4}, z + \frac{1}{4}, \frac{1}{2} - y]$	[3, 195]
4	$[z + \frac{1}{4}, y + \frac{1}{4}, \frac{1}{2} - x]$	[4, 196]
5	$[\frac{1}{2} - z, y + \frac{1}{4}, x + \frac{1}{4}]$	[5, 197]
6	$[\frac{1}{2} - y, x + \frac{1}{4}, z + \frac{1}{4}]$	[6, 198]
7	$[y + \frac{1}{4}, \frac{1}{2} - x, z + \frac{1}{4}]$	[7, 199]
8	$[x, \frac{1}{4} - y, \frac{1}{4} - z]$	[8, 200]
9	$[\frac{1}{4} - x, y, \frac{1}{4} - z]$	[9, 201]
10	$[\frac{1}{4} - x, \frac{1}{4} - y, z]$	[10, 202]
11	$[y + \frac{1}{4}, x + \frac{1}{4}, \frac{1}{2} - z]$	[11, 203]
12	$[\frac{1}{2} - y, \frac{1}{2} - x, \frac{1}{2} - z]$	[12, 204]
13	$[\frac{1}{2} - x, z + \frac{1}{4}, y + \frac{1}{4}]$	[13, 205]
14	$[\frac{1}{2} - x, \frac{1}{2} - z, \frac{1}{2} - y]$	[14, 206]
15	$[z + \frac{1}{4}, \frac{1}{2} - y, x + \frac{1}{4}]$	[15, 207]
16	$[\frac{1}{2} - z, \frac{1}{2} - y, \frac{1}{2} - x]$	[16, 208]
17	$[z, x, y]$	[17, 209]
18	$[y, z, x]$	[18, 210]
19	$[\frac{1}{4} - y, z, \frac{1}{4} - x]$	[19, 211]
20	$[\frac{1}{4} - z, \frac{1}{4} - x, y]$	[20, 212]
21	$[\frac{1}{4} - y, \frac{1}{4} - z, x]$	[21, 213]
22	$[z, \frac{1}{4} - x, \frac{1}{4} - y]$	[22, 214]
23	$[y, \frac{1}{4} - z, \frac{1}{4} - x]$	[23, 215]
24	$[\frac{1}{4} - z, x, \frac{1}{4} - y]$	[24, 216]
25	$[-x, -y, -z]$	[25, 217]
26	$[\frac{1}{4} - x, z + \frac{1}{2}, \frac{1}{4} - y]$	[26, 218]
27	$[\frac{1}{4} - x, \frac{1}{4} - z, y + \frac{1}{2}]$	[27, 219]
28	$[\frac{1}{4} - z, \frac{1}{4} - y, x + \frac{1}{2}]$	[28, 220]
29	$[z + \frac{1}{2}, \frac{1}{4} - y, \frac{1}{4} - x]$	[29, 221]
30	$[y + \frac{1}{2}, \frac{1}{4} - x, \frac{1}{4} - z]$	[30, 222]
31	$[\frac{1}{4} - y, x + \frac{1}{2}, \frac{1}{4} - z]$	[31, 223]
32	$[-x, y + \frac{1}{4}, z + \frac{1}{4}]$	[32, 224]
33	$[x + \frac{1}{4}, -y, z + \frac{1}{4}]$	[33, 225]
34	$[x + \frac{1}{4}, y + \frac{1}{4}, -z]$	[34, 226]
35	$[\frac{1}{4} - y, \frac{1}{4} - x, z + \frac{1}{2}]$	[35, 227]
36	$[y + \frac{1}{2}, x + \frac{1}{2}, z + \frac{1}{2}]$	[36, 228]
37	$[x + \frac{1}{2}, \frac{1}{4} - z, \frac{1}{4} - y]$	[37, 229]

continued ...

Table 8

No.	position	mapping
38	$[x + \frac{1}{2}, z + \frac{1}{2}, y + \frac{1}{2}]$	[38,230]
39	$[\frac{1}{4} - z, y + \frac{1}{2}, \frac{1}{4} - x]$	[39,231]
40	$[z + \frac{1}{2}, y + \frac{1}{2}, x + \frac{1}{2}]$	[40,232]
41	$[-z, -x, -y]$	[41,233]
42	$[-y, -z, -x]$	[42,234]
43	$[y + \frac{1}{4}, -z, x + \frac{1}{4}]$	[43,235]
44	$[z + \frac{1}{4}, x + \frac{1}{4}, -y]$	[44,236]
45	$[y + \frac{1}{4}, z + \frac{1}{4}, -x]$	[45,237]
46	$[-z, x + \frac{1}{4}, y + \frac{1}{4}]$	[46,238]
47	$[-y, z + \frac{1}{4}, x + \frac{1}{4}]$	[47,239]
48	$[z + \frac{1}{4}, -x, y + \frac{1}{4}]$	[48,240]
49	$[x, y + \frac{1}{2}, z + \frac{1}{2}]$	[49,241]
50	$[x + \frac{1}{4}, -z, y + \frac{3}{4}]$	[50,242]
51	$[x + \frac{1}{4}, z + \frac{3}{4}, -y]$	[51,243]
52	$[z + \frac{1}{4}, y + \frac{3}{4}, -x]$	[52,244]
53	$[\frac{1}{2} - z, y + \frac{3}{4}, x + \frac{3}{4}]$	[53,245]
54	$[\frac{1}{2} - y, x + \frac{3}{4}, z + \frac{3}{4}]$	[54,246]
55	$[y + \frac{1}{4}, -x, z + \frac{3}{4}]$	[55,247]
56	$[x, \frac{3}{4} - y, \frac{3}{4} - z]$	[56,248]
57	$[\frac{1}{4} - x, y + \frac{1}{2}, \frac{3}{4} - z]$	[57,249]
58	$[\frac{1}{4} - x, \frac{3}{4} - y, z + \frac{1}{2}]$	[58,250]
59	$[y + \frac{1}{4}, x + \frac{3}{4}, -z]$	[59,251]
60	$[\frac{1}{2} - y, -x, -z]$	[60,252]
61	$[\frac{1}{2} - x, z + \frac{3}{4}, y + \frac{3}{4}]$	[61,253]
62	$[\frac{1}{2} - x, -z, -y]$	[62,254]
63	$[z + \frac{1}{4}, -y, x + \frac{3}{4}]$	[63,255]
64	$[\frac{1}{2} - z, -y, -x]$	[64,256]
65	$[z, x + \frac{1}{2}, y + \frac{1}{2}]$	[65,257]
66	$[y, z + \frac{1}{2}, x + \frac{1}{2}]$	[66,258]
67	$[\frac{1}{4} - y, z + \frac{1}{2}, \frac{3}{4} - x]$	[67,259]
68	$[\frac{1}{4} - z, \frac{3}{4} - x, y + \frac{1}{2}]$	[68,260]
69	$[\frac{1}{4} - y, \frac{3}{4} - z, x + \frac{1}{2}]$	[69,261]
70	$[z, \frac{3}{4} - x, \frac{3}{4} - y]$	[70,262]
71	$[y, \frac{3}{4} - z, \frac{3}{4} - x]$	[71,263]
72	$[\frac{1}{4} - z, x + \frac{1}{2}, \frac{3}{4} - y]$	[72,264]
73	$[-x, \frac{1}{2} - y, \frac{1}{2} - z]$	[73,265]
74	$[\frac{1}{4} - x, z, \frac{3}{4} - y]$	[74,266]
75	$[\frac{1}{4} - x, \frac{3}{4} - z, y]$	[75,267]
76	$[\frac{1}{4} - z, \frac{3}{4} - y, x]$	[76,268]
77	$[z + \frac{1}{2}, \frac{3}{4} - y, \frac{3}{4} - x]$	[77,269]
78	$[y + \frac{1}{2}, \frac{3}{4} - x, \frac{3}{4} - z]$	[78,270]
79	$[\frac{1}{4} - y, x, \frac{3}{4} - z]$	[79,271]
80	$[-x, y + \frac{3}{4}, z + \frac{3}{4}]$	[80,272]
81	$[x + \frac{1}{4}, \frac{1}{2} - y, z + \frac{3}{4}]$	[81,273]
82	$[x + \frac{1}{4}, y + \frac{3}{4}, \frac{1}{2} - z]$	[82,274]
83	$[\frac{1}{4} - y, \frac{3}{4} - x, z]$	[83,275]
84	$[y + \frac{1}{2}, x, z]$	[84,276]

continued ...

Table 8

No.	position	mapping
85	$[x + \frac{1}{2}, \frac{3}{4} - z, \frac{3}{4} - y]$	[85,277]
86	$[x + \frac{1}{2}, z, y]$	[86,278]
87	$[\frac{1}{4} - z, y, \frac{3}{4} - x]$	[87,279]
88	$[z + \frac{1}{2}, y, x]$	[88,280]
89	$[-z, \frac{1}{2} - x, \frac{1}{2} - y]$	[89,281]
90	$[-y, \frac{1}{2} - z, \frac{1}{2} - x]$	[90,282]
91	$[y + \frac{1}{4}, \frac{1}{2} - z, x + \frac{3}{4}]$	[91,283]
92	$[z + \frac{1}{4}, x + \frac{3}{4}, \frac{1}{2} - y]$	[92,284]
93	$[y + \frac{1}{4}, z + \frac{3}{4}, \frac{1}{2} - x]$	[93,285]
94	$[-z, x + \frac{3}{4}, y + \frac{3}{4}]$	[94,286]
95	$[-y, z + \frac{3}{4}, x + \frac{3}{4}]$	[95,287]
96	$[z + \frac{1}{4}, \frac{1}{2} - x, y + \frac{3}{4}]$	[96,288]
97	$[x + \frac{1}{2}, y, z + \frac{1}{2}]$	[97,289]
98	$[x + \frac{3}{4}, \frac{1}{2} - z, y + \frac{3}{4}]$	[98,290]
99	$[x + \frac{3}{4}, z + \frac{1}{4}, -y]$	[99,291]
100	$[z + \frac{3}{4}, y + \frac{1}{4}, -x]$	[100,292]
101	$[-z, y + \frac{1}{4}, x + \frac{3}{4}]$	[101,293]
102	$[-y, x + \frac{1}{4}, z + \frac{3}{4}]$	[102,294]
103	$[y + \frac{3}{4}, \frac{1}{2} - x, z + \frac{3}{4}]$	[103,295]
104	$[x + \frac{1}{2}, \frac{1}{4} - y, \frac{3}{4} - z]$	[104,296]
105	$[\frac{3}{4} - x, y, \frac{3}{4} - z]$	[105,297]
106	$[\frac{3}{4} - x, \frac{1}{4} - y, z + \frac{1}{2}]$	[106,298]
107	$[y + \frac{3}{4}, x + \frac{1}{4}, -z]$	[107,299]
108	$[-y, \frac{1}{2} - x, -z]$	[108,300]
109	$[-x, z + \frac{1}{4}, y + \frac{3}{4}]$	[109,301]
110	$[-x, \frac{1}{2} - z, -y]$	[110,302]
111	$[z + \frac{3}{4}, \frac{1}{2} - y, x + \frac{3}{4}]$	[111,303]
112	$[-z, \frac{1}{2} - y, -x]$	[112,304]
113	$[z + \frac{1}{2}, x, y + \frac{1}{2}]$	[113,305]
114	$[y + \frac{1}{2}, z, x + \frac{1}{2}]$	[114,306]
115	$[\frac{3}{4} - y, z, \frac{3}{4} - x]$	[115,307]
116	$[\frac{3}{4} - z, \frac{1}{4} - x, y + \frac{1}{2}]$	[116,308]
117	$[\frac{3}{4} - y, \frac{1}{4} - z, x + \frac{1}{2}]$	[117,309]
118	$[z + \frac{1}{2}, \frac{1}{4} - x, \frac{3}{4} - y]$	[118,310]
119	$[y + \frac{1}{2}, \frac{1}{4} - z, \frac{3}{4} - x]$	[119,311]
120	$[\frac{3}{4} - z, x, \frac{3}{4} - y]$	[120,312]
121	$[\frac{1}{2} - x, -y, \frac{1}{2} - z]$	[121,313]
122	$[\frac{3}{4} - x, z + \frac{1}{2}, \frac{3}{4} - y]$	[122,314]
123	$[\frac{3}{4} - x, \frac{1}{4} - z, y]$	[123,315]
124	$[\frac{3}{4} - z, \frac{1}{4} - y, x]$	[124,316]
125	$[z, \frac{1}{4} - y, \frac{3}{4} - x]$	[125,317]
126	$[y, \frac{1}{4} - x, \frac{3}{4} - z]$	[126,318]
127	$[\frac{3}{4} - y, x + \frac{1}{2}, \frac{3}{4} - z]$	[127,319]
128	$[\frac{1}{2} - x, y + \frac{1}{4}, z + \frac{3}{4}]$	[128,320]
129	$[x + \frac{3}{4}, -y, z + \frac{3}{4}]$	[129,321]
130	$[x + \frac{3}{4}, y + \frac{1}{4}, \frac{1}{2} - z]$	[130,322]
131	$[\frac{3}{4} - y, \frac{1}{4} - x, z]$	[131,323]

continued ...

Table 8

No.	position	mapping
132	$[y, x + \frac{1}{2}, z]$	[132,324]
133	$[x, \frac{1}{4} - z, \frac{3}{4} - y]$	[133,325]
134	$[x, z + \frac{1}{2}, y]$	[134,326]
135	$[\frac{3}{4} - z, y + \frac{1}{2}, \frac{3}{4} - x]$	[135,327]
136	$[z, y + \frac{1}{2}, x]$	[136,328]
137	$[\frac{1}{2} - z, -x, \frac{1}{2} - y]$	[137,329]
138	$[\frac{1}{2} - y, -z, \frac{1}{2} - x]$	[138,330]
139	$[y + \frac{3}{4}, -z, x + \frac{3}{4}]$	[139,331]
140	$[z + \frac{3}{4}, x + \frac{1}{4}, \frac{1}{2} - y]$	[140,332]
141	$[y + \frac{3}{4}, z + \frac{1}{4}, \frac{1}{2} - x]$	[141,333]
142	$[\frac{1}{2} - z, x + \frac{1}{4}, y + \frac{3}{4}]$	[142,334]
143	$[\frac{1}{2} - y, z + \frac{1}{4}, x + \frac{3}{4}]$	[143,335]
144	$[z + \frac{3}{4}, -x, y + \frac{3}{4}]$	[144,336]
145	$[x + \frac{1}{2}, y + \frac{1}{2}, z]$	[145,337]
146	$[x + \frac{3}{4}, -z, y + \frac{1}{4}]$	[146,338]
147	$[x + \frac{3}{4}, z + \frac{3}{4}, \frac{1}{2} - y]$	[147,339]
148	$[z + \frac{3}{4}, y + \frac{3}{4}, \frac{1}{2} - x]$	[148,340]
149	$[-z, y + \frac{3}{4}, x + \frac{1}{4}]$	[149,341]
150	$[-y, x + \frac{3}{4}, z + \frac{1}{4}]$	[150,342]
151	$[y + \frac{3}{4}, -x, z + \frac{1}{4}]$	[151,343]
152	$[x + \frac{1}{2}, \frac{3}{4} - y, \frac{1}{4} - z]$	[152,344]
153	$[\frac{3}{4} - x, y + \frac{1}{2}, \frac{1}{4} - z]$	[153,345]
154	$[\frac{3}{4} - x, \frac{3}{4} - y, z]$	[154,346]
155	$[y + \frac{3}{4}, x + \frac{3}{4}, \frac{1}{2} - z]$	[155,347]
156	$[-y, -x, \frac{1}{2} - z]$	[156,348]
157	$[-x, z + \frac{3}{4}, y + \frac{1}{4}]$	[157,349]
158	$[-x, -z, \frac{1}{2} - y]$	[158,350]
159	$[z + \frac{3}{4}, -y, x + \frac{1}{4}]$	[159,351]
160	$[-z, -y, \frac{1}{2} - x]$	[160,352]
161	$[z + \frac{1}{2}, x + \frac{1}{2}, y]$	[161,353]
162	$[y + \frac{1}{2}, z + \frac{1}{2}, x]$	[162,354]
163	$[\frac{3}{4} - y, z + \frac{1}{2}, \frac{1}{4} - x]$	[163,355]
164	$[\frac{3}{4} - z, \frac{3}{4} - x, y]$	[164,356]
165	$[\frac{3}{4} - y, \frac{3}{4} - z, x]$	[165,357]
166	$[z + \frac{1}{2}, \frac{3}{4} - x, \frac{1}{4} - y]$	[166,358]
167	$[y + \frac{1}{2}, \frac{3}{4} - z, \frac{1}{4} - x]$	[167,359]
168	$[\frac{3}{4} - z, x + \frac{1}{2}, \frac{1}{4} - y]$	[168,360]
169	$[\frac{1}{2} - x, \frac{1}{2} - y, -z]$	[169,361]
170	$[\frac{3}{4} - x, z, \frac{1}{4} - y]$	[170,362]
171	$[\frac{3}{4} - x, \frac{3}{4} - z, y + \frac{1}{2}]$	[171,363]
172	$[\frac{3}{4} - z, \frac{3}{4} - y, x + \frac{1}{2}]$	[172,364]
173	$[z, \frac{3}{4} - y, \frac{1}{4} - x]$	[173,365]
174	$[y, \frac{3}{4} - x, \frac{1}{4} - z]$	[174,366]
175	$[\frac{3}{4} - y, x, \frac{1}{4} - z]$	[175,367]
176	$[\frac{1}{2} - x, y + \frac{3}{4}, z + \frac{1}{4}]$	[176,368]
177	$[x + \frac{3}{4}, \frac{1}{2} - y, z + \frac{1}{4}]$	[177,369]
178	$[x + \frac{3}{4}, y + \frac{3}{4}, -z]$	[178,370]

continued ...

Table 8

No.	position	mapping
179	$[\frac{3}{4} - y, \frac{3}{4} - x, z + \frac{1}{2}]$	[179,371]
180	$[y, x, z + \frac{1}{2}]$	[180,372]
181	$[x, \frac{3}{4} - z, \frac{1}{4} - y]$	[181,373]
182	$[x, z, y + \frac{1}{2}]$	[182,374]
183	$[\frac{3}{4} - z, y, \frac{1}{4} - x]$	[183,375]
184	$[z, y, x + \frac{1}{2}]$	[184,376]
185	$[\frac{1}{2} - z, \frac{1}{2} - x, -y]$	[185,377]
186	$[\frac{1}{2} - y, \frac{1}{2} - z, -x]$	[186,378]
187	$[y + \frac{3}{4}, \frac{1}{2} - z, x + \frac{1}{4}]$	[187,379]
188	$[z + \frac{3}{4}, x + \frac{3}{4}, -y]$	[188,380]
189	$[y + \frac{3}{4}, z + \frac{3}{4}, -x]$	[189,381]
190	$[\frac{1}{2} - z, x + \frac{3}{4}, y + \frac{1}{4}]$	[190,382]
191	$[\frac{1}{2} - y, z + \frac{3}{4}, x + \frac{1}{4}]$	[191,383]
192	$[z + \frac{3}{4}, \frac{1}{2} - x, y + \frac{1}{4}]$	[192,384]