

MSG No. 202.25  $F_S m\bar{3}$  [ Type IV, cubic ]

Table 1: Wyckoff site: 8a, site symmetry: m-3.

No.	position	mapping
1	$[0, 0, 0]$	[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24]
2	$[0, \frac{1}{2}, \frac{1}{2}]$	[25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48]
3	$[\frac{1}{2}, 0, \frac{1}{2}]$	[49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72]
4	$[\frac{1}{2}, \frac{1}{2}, 0]$	[73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96]
5	$[0, 0, \frac{1}{2}]$	[97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120]
6	$[0, \frac{1}{2}, 0]$	[121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144]
7	$[\frac{1}{2}, 0, 0]$	[145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168]
8	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192]

Table 2: Wyckoff site: 8b, site symmetry: m'-3'.

No.	position	mapping
1	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[1, 5, 6, 26, 34, 35, 51, 55, 60, 76, 80, 81, 112, 116, 117, 135, 139, 144, 158, 166, 167, 181, 185, 186]
2	$[\frac{1}{4}, \frac{3}{4}, \frac{3}{4}]$	[2, 10, 11, 25, 29, 30, 52, 56, 57, 75, 79, 84, 111, 115, 120, 136, 140, 141, 157, 161, 162, 182, 190, 191]
3	$[\frac{3}{4}, \frac{1}{4}, \frac{3}{4}]$	[3, 7, 12, 28, 32, 33, 49, 53, 54, 74, 82, 83, 110, 118, 119, 133, 137, 138, 160, 164, 165, 183, 187, 192]
4	$[\frac{3}{4}, \frac{3}{4}, \frac{1}{4}]$	[4, 8, 9, 27, 31, 36, 50, 58, 59, 73, 77, 78, 109, 113, 114, 134, 142, 143, 159, 163, 168, 184, 188, 189]
5	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[13, 17, 18, 38, 46, 47, 63, 67, 72, 88, 92, 93, 100, 104, 105, 123, 127, 132, 146, 154, 155, 169, 173, 174]
6	$[\frac{3}{4}, \frac{1}{4}, \frac{1}{4}]$	[14, 22, 23, 37, 41, 42, 64, 68, 69, 87, 91, 96, 99, 103, 108, 124, 128, 129, 145, 149, 150, 170, 178, 179]
7	$[\frac{1}{4}, \frac{3}{4}, \frac{1}{4}]$	[15, 19, 24, 40, 44, 45, 61, 65, 66, 86, 94, 95, 98, 106, 107, 121, 125, 126, 148, 152, 153, 171, 175, 180]
8	$[\frac{1}{4}, \frac{1}{4}, \frac{3}{4}]$	[16, 20, 21, 39, 43, 48, 62, 70, 71, 85, 89, 90, 97, 101, 102, 122, 130, 131, 147, 151, 156, 172, 176, 177]

Table 3: Wyckoff site: 24c, site symmetry: mm'm'..

No.	position	mapping
1	$[0, \frac{1}{4}, \frac{1}{4}]$	[1, 14, 26, 37, 99, 112, 124, 135]
2	$[0, \frac{3}{4}, \frac{3}{4}]$	[2, 13, 25, 38, 100, 111, 123, 136]
3	$[0, \frac{1}{4}, \frac{3}{4}]$	[3, 16, 28, 39, 97, 110, 122, 133]
4	$[0, \frac{3}{4}, \frac{1}{4}]$	[4, 15, 27, 40, 98, 109, 121, 134]
5	$[\frac{1}{4}, 0, \frac{1}{4}]$	[5, 24, 60, 65, 106, 116, 152, 166]
6	$[\frac{1}{4}, \frac{1}{4}, 0]$	[6, 21, 81, 90, 131, 139, 151, 167]
7	$[\frac{3}{4}, \frac{1}{4}, 0]$	[7, 23, 83, 91, 129, 138, 150, 165]
8	$[\frac{3}{4}, 0, \frac{1}{4}]$	[8, 22, 58, 68, 108, 113, 149, 168]
9	$[\frac{3}{4}, \frac{3}{4}, 0]$	[9, 18, 78, 93, 127, 143, 155, 163]
10	$[\frac{1}{4}, 0, \frac{3}{4}]$	[10, 20, 56, 70, 101, 120, 156, 161]
11	$[\frac{1}{4}, \frac{3}{4}, 0]$	[11, 19, 79, 95, 126, 141, 153, 162]
12	$[\frac{3}{4}, 0, \frac{3}{4}]$	[12, 17, 53, 72, 104, 118, 154, 164]
13	$[\frac{1}{4}, \frac{1}{2}, \frac{3}{4}]$	[29, 48, 84, 89, 130, 140, 176, 190]
14	$[\frac{1}{4}, \frac{3}{4}, \frac{1}{2}]$	[30, 45, 57, 66, 107, 115, 175, 191]
15	$[\frac{3}{4}, \frac{3}{4}, \frac{1}{2}]$	[31, 47, 59, 67, 105, 114, 174, 189]

continued ...

Table 3

No.	position	mapping
16	$[\frac{3}{4}, \frac{1}{2}, \frac{3}{4}]$	[32, 46, 82, 92, 132, 137, 173, 192]
17	$[\frac{3}{4}, \frac{1}{4}, \frac{1}{2}]$	[33, 42, 54, 69, 103, 119, 179, 187]
18	$[\frac{1}{4}, \frac{1}{2}, \frac{1}{4}]$	[34, 44, 80, 94, 125, 144, 180, 185]
19	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{2}]$	[35, 43, 55, 71, 102, 117, 177, 186]
20	$[\frac{3}{4}, \frac{1}{2}, \frac{1}{4}]$	[36, 41, 77, 96, 128, 142, 178, 188]
21	$[\frac{1}{2}, \frac{1}{4}, \frac{3}{4}]$	[49, 62, 74, 85, 147, 160, 172, 183]
22	$[\frac{1}{2}, \frac{3}{4}, \frac{1}{4}]$	[50, 61, 73, 86, 148, 159, 171, 184]
23	$[\frac{1}{2}, \frac{1}{4}, \frac{1}{4}]$	[51, 64, 76, 87, 145, 158, 170, 181]
24	$[\frac{1}{2}, \frac{3}{4}, \frac{3}{4}]$	[52, 63, 75, 88, 146, 157, 169, 182]

Table 4: Wyckoff site: 24d, site symmetry:  $m'mm$ .

No.	position	mapping
1	$[\frac{1}{4}, 0, 0]$	[1, 2, 15, 16, 147, 148, 157, 158]
2	$[\frac{3}{4}, 0, 0]$	[3, 4, 13, 14, 145, 146, 159, 160]
3	$[0, \frac{1}{4}, 0]$	[5, 12, 20, 22, 128, 130, 137, 144]
4	$[0, 0, \frac{1}{4}]$	[6, 9, 19, 23, 103, 107, 114, 117]
5	$[0, 0, \frac{3}{4}]$	[7, 11, 18, 21, 102, 105, 115, 119]
6	$[0, \frac{3}{4}, 0]$	[8, 10, 17, 24, 125, 132, 140, 142]
7	$[\frac{1}{4}, \frac{1}{2}, \frac{1}{2}]$	[25, 26, 39, 40, 171, 172, 181, 182]
8	$[\frac{3}{4}, \frac{1}{2}, \frac{1}{2}]$	[27, 28, 37, 38, 169, 170, 183, 184]
9	$[0, \frac{3}{4}, \frac{1}{2}]$	[29, 36, 44, 46, 104, 106, 113, 120]
10	$[0, \frac{1}{2}, \frac{3}{4}]$	[30, 33, 43, 47, 127, 131, 138, 141]
11	$[0, \frac{1}{2}, \frac{1}{4}]$	[31, 35, 42, 45, 126, 129, 139, 143]
12	$[0, \frac{1}{4}, \frac{1}{2}]$	[32, 34, 41, 48, 101, 108, 116, 118]
13	$[\frac{3}{4}, 0, \frac{1}{2}]$	[49, 50, 63, 64, 99, 100, 109, 110]
14	$[\frac{1}{4}, 0, \frac{1}{2}]$	[51, 52, 61, 62, 97, 98, 111, 112]
15	$[\frac{1}{2}, \frac{1}{4}, \frac{1}{2}]$	[53, 60, 68, 70, 176, 178, 185, 192]
16	$[\frac{1}{2}, 0, \frac{3}{4}]$	[54, 57, 67, 71, 151, 155, 162, 165]
17	$[\frac{1}{2}, 0, \frac{1}{4}]$	[55, 59, 66, 69, 150, 153, 163, 167]
18	$[\frac{1}{2}, \frac{3}{4}, \frac{1}{2}]$	[56, 58, 65, 72, 173, 180, 188, 190]
19	$[\frac{3}{4}, \frac{1}{2}, 0]$	[73, 74, 87, 88, 123, 124, 133, 134]
20	$[\frac{1}{4}, \frac{1}{2}, 0]$	[75, 76, 85, 86, 121, 122, 135, 136]
21	$[\frac{1}{2}, \frac{3}{4}, 0]$	[77, 84, 92, 94, 152, 154, 161, 168]
22	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{4}]$	[78, 81, 91, 95, 175, 179, 186, 189]
23	$[\frac{1}{2}, \frac{1}{2}, \frac{3}{4}]$	[79, 83, 90, 93, 174, 177, 187, 191]
24	$[\frac{1}{2}, \frac{1}{4}, 0]$	[80, 82, 89, 96, 149, 156, 164, 166]

Table 5: Wyckoff site: 48e, site symmetry:  $2mm$ .

No.	position	mapping
1	$[x, 0, 0]$	[1, 2, 15, 16]
2	$[-x, 0, 0]$	[3, 4, 13, 14]
3	$[0, x, 0]$	[5, 12, 20, 22]
4	$[0, 0, x]$	[6, 9, 19, 23]
5	$[0, 0, -x]$	[7, 11, 18, 21]
6	$[0, -x, 0]$	[8, 10, 17, 24]
7	$[x, \frac{1}{2}, \frac{1}{2}]$	[25, 26, 39, 40]
8	$[-x, \frac{1}{2}, \frac{1}{2}]$	[27, 28, 37, 38]
9	$[0, x + \frac{1}{2}, \frac{1}{2}]$	[29, 36, 44, 46]
10	$[0, \frac{1}{2}, x + \frac{1}{2}]$	[30, 33, 43, 47]
11	$[0, \frac{1}{2}, \frac{1}{2} - x]$	[31, 35, 42, 45]
12	$[0, \frac{1}{2} - x, \frac{1}{2}]$	[32, 34, 41, 48]
13	$[x + \frac{1}{2}, 0, \frac{1}{2}]$	[49, 50, 63, 64]
14	$[\frac{1}{2} - x, 0, \frac{1}{2}]$	[51, 52, 61, 62]
15	$[\frac{1}{2}, x, \frac{1}{2}]$	[53, 60, 68, 70]
16	$[\frac{1}{2}, 0, x + \frac{1}{2}]$	[54, 57, 67, 71]
17	$[\frac{1}{2}, 0, \frac{1}{2} - x]$	[55, 59, 66, 69]
18	$[\frac{1}{2}, -x, \frac{1}{2}]$	[56, 58, 65, 72]
19	$[x + \frac{1}{2}, \frac{1}{2}, 0]$	[73, 74, 87, 88]
20	$[\frac{1}{2} - x, \frac{1}{2}, 0]$	[75, 76, 85, 86]
21	$[\frac{1}{2}, x + \frac{1}{2}, 0]$	[77, 84, 92, 94]
22	$[\frac{1}{2}, \frac{1}{2}, x]$	[78, 81, 91, 95]
23	$[\frac{1}{2}, \frac{1}{2}, -x]$	[79, 83, 90, 93]
24	$[\frac{1}{2}, \frac{1}{2} - x, 0]$	[80, 82, 89, 96]
25	$[x, 0, \frac{1}{2}]$	[97, 98, 111, 112]
26	$[-x, 0, \frac{1}{2}]$	[99, 100, 109, 110]
27	$[0, x, \frac{1}{2}]$	[101, 108, 116, 118]
28	$[0, 0, x + \frac{1}{2}]$	[102, 105, 115, 119]
29	$[0, 0, \frac{1}{2} - x]$	[103, 107, 114, 117]
30	$[0, -x, \frac{1}{2}]$	[104, 106, 113, 120]
31	$[x, \frac{1}{2}, 0]$	[121, 122, 135, 136]
32	$[-x, \frac{1}{2}, 0]$	[123, 124, 133, 134]
33	$[0, x + \frac{1}{2}, 0]$	[125, 132, 140, 142]
34	$[0, \frac{1}{2}, x]$	[126, 129, 139, 143]
35	$[0, \frac{1}{2}, -x]$	[127, 131, 138, 141]
36	$[0, \frac{1}{2} - x, 0]$	[128, 130, 137, 144]
37	$[x + \frac{1}{2}, 0, 0]$	[145, 146, 159, 160]
38	$[\frac{1}{2} - x, 0, 0]$	[147, 148, 157, 158]
39	$[\frac{1}{2}, x, 0]$	[149, 156, 164, 166]
40	$[\frac{1}{2}, 0, x]$	[150, 153, 163, 167]
41	$[\frac{1}{2}, 0, -x]$	[151, 155, 162, 165]
42	$[\frac{1}{2}, -x, 0]$	[152, 154, 161, 168]
43	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[169, 170, 183, 184]
44	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}]$	[171, 172, 181, 182]
45	$[\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}]$	[173, 180, 188, 190]
46	$[\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}]$	[174, 177, 187, 191]

*continued ...*

Table 5

No.	position	mapping
47	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x]$	[175, 179, 186, 189]
48	$[\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}]$	[176, 178, 185, 192]

Table 6: Wyckoff site: 48f, site symmetry:  $2'mm'$  . .

No.	position	mapping
1	$[x, 0, \frac{1}{4}]$	[1, 15, 98, 112]
2	$[x, 0, \frac{3}{4}]$	[2, 16, 97, 111]
3	$[-x, 0, \frac{3}{4}]$	[3, 13, 100, 110]
4	$[-x, 0, \frac{1}{4}]$	[4, 14, 99, 109]
5	$[\frac{1}{4}, x, 0]$	[5, 20, 156, 166]
6	$[0, \frac{1}{4}, x]$	[6, 23, 129, 139]
7	$[0, \frac{1}{4}, -x]$	[7, 21, 131, 138]
8	$[\frac{3}{4}, -x, 0]$	[8, 17, 154, 168]
9	$[0, \frac{3}{4}, x]$	[9, 19, 126, 143]
10	$[\frac{1}{4}, -x, 0]$	[10, 24, 152, 161]
11	$[0, \frac{3}{4}, -x]$	[11, 18, 127, 141]
12	$[\frac{3}{4}, x, 0]$	[12, 22, 149, 164]
13	$[x, \frac{1}{2}, \frac{3}{4}]$	[25, 39, 122, 136]
14	$[x, \frac{1}{2}, \frac{1}{4}]$	[26, 40, 121, 135]
15	$[-x, \frac{1}{2}, \frac{1}{4}]$	[27, 37, 124, 134]
16	$[-x, \frac{1}{2}, \frac{3}{4}]$	[28, 38, 123, 133]
17	$[\frac{1}{4}, x + \frac{1}{2}, \frac{1}{2}]$	[29, 44, 180, 190]
18	$[0, \frac{3}{4}, x + \frac{1}{2}]$	[30, 47, 105, 115]
19	$[0, \frac{3}{4}, \frac{1}{2} - x]$	[31, 45, 107, 114]
20	$[\frac{3}{4}, \frac{1}{2} - x, \frac{1}{2}]$	[32, 41, 178, 192]
21	$[0, \frac{1}{4}, x + \frac{1}{2}]$	[33, 43, 102, 119]
22	$[\frac{1}{4}, \frac{1}{2} - x, \frac{1}{2}]$	[34, 48, 176, 185]
23	$[0, \frac{1}{4}, \frac{1}{2} - x]$	[35, 42, 103, 117]
24	$[\frac{3}{4}, x + \frac{1}{2}, \frac{1}{2}]$	[36, 46, 173, 188]
25	$[x + \frac{1}{2}, 0, \frac{3}{4}]$	[49, 63, 146, 160]
26	$[x + \frac{1}{2}, 0, \frac{1}{4}]$	[50, 64, 145, 159]
27	$[\frac{1}{2} - x, 0, \frac{1}{4}]$	[51, 61, 148, 158]
28	$[\frac{1}{2} - x, 0, \frac{3}{4}]$	[52, 62, 147, 157]
29	$[\frac{3}{4}, x, \frac{1}{2}]$	[53, 68, 108, 118]
30	$[\frac{1}{2}, \frac{1}{4}, x + \frac{1}{2}]$	[54, 71, 177, 187]
31	$[\frac{1}{2}, \frac{1}{4}, \frac{1}{2} - x]$	[55, 69, 179, 186]
32	$[\frac{1}{4}, -x, \frac{1}{2}]$	[56, 65, 106, 120]
33	$[\frac{1}{2}, \frac{3}{4}, x + \frac{1}{2}]$	[57, 67, 174, 191]
34	$[\frac{3}{4}, -x, \frac{1}{2}]$	[58, 72, 104, 113]
35	$[\frac{1}{2}, \frac{3}{4}, \frac{1}{2} - x]$	[59, 66, 175, 189]
36	$[\frac{1}{4}, x, \frac{1}{2}]$	[60, 70, 101, 116]
37	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{4}]$	[73, 87, 170, 184]
38	$[x + \frac{1}{2}, \frac{1}{2}, \frac{3}{4}]$	[74, 88, 169, 183]

*continued ...*

Table 6

No.	position	mapping
39	$[\frac{1}{2} - x, \frac{1}{2}, \frac{3}{4}]$	[75, 85, 172, 182]
40	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{4}]$	[76, 86, 171, 181]
41	$[\frac{3}{4}, x + \frac{1}{2}, 0]$	[77, 92, 132, 142]
42	$[\frac{1}{2}, \frac{3}{4}, x]$	[78, 95, 153, 163]
43	$[\frac{1}{2}, \frac{3}{4}, -x]$	[79, 93, 155, 162]
44	$[\frac{1}{4}, \frac{1}{2} - x, 0]$	[80, 89, 130, 144]
45	$[\frac{1}{2}, \frac{1}{4}, x]$	[81, 91, 150, 167]
46	$[\frac{3}{4}, \frac{1}{2} - x, 0]$	[82, 96, 128, 137]
47	$[\frac{1}{2}, \frac{1}{4}, -x]$	[83, 90, 151, 165]
48	$[\frac{1}{4}, x + \frac{1}{2}, 0]$	[84, 94, 125, 140]

Table 7: Wyckoff site: 48g, site symmetry: 2'm'm..

No.	position	mapping
1	$[x, \frac{1}{4}, 0]$	[1, 16, 122, 135]
2	$[x, \frac{3}{4}, 0]$	[2, 15, 121, 136]
3	$[-x, \frac{1}{4}, 0]$	[3, 14, 124, 133]
4	$[-x, \frac{3}{4}, 0]$	[4, 13, 123, 134]
5	$[0, x, \frac{1}{4}]$	[5, 22, 108, 116]
6	$[\frac{1}{4}, 0, x]$	[6, 19, 153, 167]
7	$[\frac{3}{4}, 0, -x]$	[7, 18, 155, 165]
8	$[0, -x, \frac{1}{4}]$	[8, 24, 106, 113]
9	$[\frac{3}{4}, 0, x]$	[9, 23, 150, 163]
10	$[0, -x, \frac{3}{4}]$	[10, 17, 104, 120]
11	$[\frac{1}{4}, 0, -x]$	[11, 21, 151, 162]
12	$[0, x, \frac{3}{4}]$	[12, 20, 101, 118]
13	$[x, \frac{3}{4}, \frac{1}{2}]$	[25, 40, 98, 111]
14	$[x, \frac{1}{4}, \frac{1}{2}]$	[26, 39, 97, 112]
15	$[-x, \frac{3}{4}, \frac{1}{2}]$	[27, 38, 100, 109]
16	$[-x, \frac{1}{4}, \frac{1}{2}]$	[28, 37, 99, 110]
17	$[0, x + \frac{1}{2}, \frac{3}{4}]$	[29, 46, 132, 140]
18	$[\frac{1}{4}, \frac{1}{2}, x + \frac{1}{2}]$	[30, 43, 177, 191]
19	$[\frac{3}{4}, \frac{1}{2}, \frac{1}{2} - x]$	[31, 42, 179, 189]
20	$[0, \frac{1}{2} - x, \frac{3}{4}]$	[32, 48, 130, 137]
21	$[\frac{3}{4}, \frac{1}{2}, x + \frac{1}{2}]$	[33, 47, 174, 187]
22	$[0, \frac{1}{2} - x, \frac{1}{4}]$	[34, 41, 128, 144]
23	$[\frac{1}{4}, \frac{1}{2}, \frac{1}{2} - x]$	[35, 45, 175, 186]
24	$[0, x + \frac{1}{2}, \frac{1}{4}]$	[36, 44, 125, 142]
25	$[x + \frac{1}{2}, \frac{1}{4}, \frac{1}{2}]$	[49, 64, 170, 183]
26	$[x + \frac{1}{2}, \frac{3}{4}, \frac{1}{2}]$	[50, 63, 169, 184]
27	$[\frac{1}{2} - x, \frac{1}{4}, \frac{1}{2}]$	[51, 62, 172, 181]
28	$[\frac{1}{2} - x, \frac{3}{4}, \frac{1}{2}]$	[52, 61, 171, 182]
29	$[\frac{1}{2}, x, \frac{3}{4}]$	[53, 70, 156, 164]
30	$[\frac{3}{4}, 0, x + \frac{1}{2}]$	[54, 67, 105, 119]

*continued ...*

Table 7

No.	position	mapping
31	$[\frac{1}{4}, 0, \frac{1}{2} - x]$	[55, 66, 107, 117]
32	$[\frac{1}{2}, -x, \frac{3}{4}]$	[56, 72, 154, 161]
33	$[\frac{1}{4}, 0, x + \frac{1}{2}]$	[57, 71, 102, 115]
34	$[\frac{1}{2}, -x, \frac{1}{4}]$	[58, 65, 152, 168]
35	$[\frac{3}{4}, 0, \frac{1}{2} - x]$	[59, 69, 103, 114]
36	$[\frac{1}{2}, x, \frac{1}{4}]$	[60, 68, 149, 166]
37	$[x + \frac{1}{2}, \frac{3}{4}, 0]$	[73, 88, 146, 159]
38	$[x + \frac{1}{2}, \frac{1}{4}, 0]$	[74, 87, 145, 160]
39	$[\frac{1}{2} - x, \frac{3}{4}, 0]$	[75, 86, 148, 157]
40	$[\frac{1}{2} - x, \frac{1}{4}, 0]$	[76, 85, 147, 158]
41	$[\frac{1}{2}, x + \frac{1}{2}, \frac{1}{4}]$	[77, 94, 180, 188]
42	$[\frac{3}{4}, \frac{1}{2}, x]$	[78, 91, 129, 143]
43	$[\frac{1}{4}, \frac{1}{2}, -x]$	[79, 90, 131, 141]
44	$[\frac{1}{2}, \frac{1}{2} - x, \frac{1}{4}]$	[80, 96, 178, 185]
45	$[\frac{1}{4}, \frac{1}{2}, x]$	[81, 95, 126, 139]
46	$[\frac{1}{2}, \frac{1}{2} - x, \frac{3}{4}]$	[82, 89, 176, 192]
47	$[\frac{3}{4}, \frac{1}{2}, -x]$	[83, 93, 127, 138]
48	$[\frac{1}{2}, x + \frac{1}{2}, \frac{3}{4}]$	[84, 92, 173, 190]

Table 8: Wyckoff site: 48h, site symmetry:  $2m'm'$  . .

No.	position	mapping
1	$[x, \frac{1}{4}, \frac{1}{4}]$	[1, 26, 112, 135]
2	$[x, \frac{3}{4}, \frac{3}{4}]$	[2, 25, 111, 136]
3	$[-x, \frac{1}{4}, \frac{3}{4}]$	[3, 28, 110, 133]
4	$[-x, \frac{3}{4}, \frac{1}{4}]$	[4, 27, 109, 134]
5	$[\frac{1}{4}, x, \frac{1}{4}]$	[5, 60, 116, 166]
6	$[\frac{1}{4}, \frac{1}{4}, x]$	[6, 81, 139, 167]
7	$[\frac{3}{4}, \frac{1}{4}, -x]$	[7, 83, 138, 165]
8	$[\frac{3}{4}, -x, \frac{1}{4}]$	[8, 58, 113, 168]
9	$[\frac{3}{4}, \frac{3}{4}, x]$	[9, 78, 143, 163]
10	$[\frac{1}{4}, -x, \frac{3}{4}]$	[10, 56, 120, 161]
11	$[\frac{1}{4}, \frac{3}{4}, -x]$	[11, 79, 141, 162]
12	$[\frac{3}{4}, x, \frac{3}{4}]$	[12, 53, 118, 164]
13	$[-x, \frac{3}{4}, \frac{3}{4}]$	[13, 38, 100, 123]
14	$[-x, \frac{1}{4}, \frac{1}{4}]$	[14, 37, 99, 124]
15	$[x, \frac{3}{4}, \frac{1}{4}]$	[15, 40, 98, 121]
16	$[x, \frac{1}{4}, \frac{3}{4}]$	[16, 39, 97, 122]
17	$[\frac{3}{4}, -x, \frac{3}{4}]$	[17, 72, 104, 154]
18	$[\frac{3}{4}, \frac{3}{4}, -x]$	[18, 93, 127, 155]
19	$[\frac{1}{4}, \frac{3}{4}, x]$	[19, 95, 126, 153]
20	$[\frac{1}{4}, x, \frac{3}{4}]$	[20, 70, 101, 156]
21	$[\frac{1}{4}, \frac{1}{4}, -x]$	[21, 90, 131, 151]
22	$[\frac{3}{4}, x, \frac{1}{4}]$	[22, 68, 108, 149]

*continued ...*

Table 8

No.	position	mapping
23	$[\frac{3}{4}, \frac{1}{4}, x]$	[23, 91, 129, 150]
24	$[\frac{1}{4}, -x, \frac{1}{4}]$	[24, 65, 106, 152]
25	$[\frac{1}{4}, x + \frac{1}{2}, \frac{3}{4}]$	[29, 84, 140, 190]
26	$[\frac{1}{4}, \frac{3}{4}, x + \frac{1}{2}]$	[30, 57, 115, 191]
27	$[\frac{3}{4}, \frac{3}{4}, \frac{1}{2} - x]$	[31, 59, 114, 189]
28	$[\frac{3}{4}, \frac{1}{2} - x, \frac{3}{4}]$	[32, 82, 137, 192]
29	$[\frac{3}{4}, \frac{1}{4}, x + \frac{1}{2}]$	[33, 54, 119, 187]
30	$[\frac{1}{4}, \frac{1}{2} - x, \frac{1}{4}]$	[34, 80, 144, 185]
31	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{2} - x]$	[35, 55, 117, 186]
32	$[\frac{3}{4}, x + \frac{1}{2}, \frac{1}{4}]$	[36, 77, 142, 188]
33	$[\frac{3}{4}, \frac{1}{2} - x, \frac{1}{4}]$	[41, 96, 128, 178]
34	$[\frac{3}{4}, \frac{1}{4}, \frac{1}{2} - x]$	[42, 69, 103, 179]
35	$[\frac{1}{4}, \frac{1}{4}, x + \frac{1}{2}]$	[43, 71, 102, 177]
36	$[\frac{1}{4}, x + \frac{1}{2}, \frac{1}{4}]$	[44, 94, 125, 180]
37	$[\frac{1}{4}, \frac{3}{4}, \frac{1}{2} - x]$	[45, 66, 107, 175]
38	$[\frac{3}{4}, x + \frac{1}{2}, \frac{3}{4}]$	[46, 92, 132, 173]
39	$[\frac{3}{4}, \frac{3}{4}, x + \frac{1}{2}]$	[47, 67, 105, 174]
40	$[\frac{1}{4}, \frac{1}{2} - x, \frac{3}{4}]$	[48, 89, 130, 176]
41	$[x + \frac{1}{2}, \frac{1}{4}, \frac{3}{4}]$	[49, 74, 160, 183]
42	$[x + \frac{1}{2}, \frac{3}{4}, \frac{1}{4}]$	[50, 73, 159, 184]
43	$[\frac{1}{2} - x, \frac{1}{4}, \frac{1}{4}]$	[51, 76, 158, 181]
44	$[\frac{1}{2} - x, \frac{3}{4}, \frac{3}{4}]$	[52, 75, 157, 182]
45	$[\frac{1}{2} - x, \frac{3}{4}, \frac{1}{4}]$	[61, 86, 148, 171]
46	$[\frac{1}{2} - x, \frac{1}{4}, \frac{3}{4}]$	[62, 85, 147, 172]
47	$[x + \frac{1}{2}, \frac{3}{4}, \frac{3}{4}]$	[63, 88, 146, 169]
48	$[x + \frac{1}{2}, \frac{1}{4}, \frac{1}{4}]$	[64, 87, 145, 170]

Table 9: Wyckoff site: 64i, site symmetry:  $\cdot 3$ .

No.	position	mapping
1	$[x, x, x]$	[1, 5, 6]
2	$[x, -x, -x]$	[2, 10, 11]
3	$[-x, x, -x]$	[3, 7, 12]
4	$[-x, -x, x]$	[4, 8, 9]
5	$[-x, -x, -x]$	[13, 17, 18]
6	$[-x, x, x]$	[14, 22, 23]
7	$[x, -x, x]$	[15, 19, 24]
8	$[x, x, -x]$	[16, 20, 21]
9	$[x, x + \frac{1}{2}, x + \frac{1}{2}]$	[25, 29, 30]
10	$[x, \frac{1}{2} - x, \frac{1}{2} - x]$	[26, 34, 35]
11	$[-x, x + \frac{1}{2}, \frac{1}{2} - x]$	[27, 31, 36]
12	$[-x, \frac{1}{2} - x, x + \frac{1}{2}]$	[28, 32, 33]
13	$[-x, \frac{1}{2} - x, \frac{1}{2} - x]$	[37, 41, 42]
14	$[-x, x + \frac{1}{2}, x + \frac{1}{2}]$	[38, 46, 47]

*continued ...*

Table 9

No.	position	mapping
15	$[x, \frac{1}{2} - x, x + \frac{1}{2}]$	[39, 43, 48]
16	$[x, x + \frac{1}{2}, \frac{1}{2} - x]$	[40, 44, 45]
17	$[x + \frac{1}{2}, x, x + \frac{1}{2}]$	[49, 53, 54]
18	$[x + \frac{1}{2}, -x, \frac{1}{2} - x]$	[50, 58, 59]
19	$[\frac{1}{2} - x, x, \frac{1}{2} - x]$	[51, 55, 60]
20	$[\frac{1}{2} - x, -x, x + \frac{1}{2}]$	[52, 56, 57]
21	$[\frac{1}{2} - x, -x, \frac{1}{2} - x]$	[61, 65, 66]
22	$[\frac{1}{2} - x, x, x + \frac{1}{2}]$	[62, 70, 71]
23	$[x + \frac{1}{2}, -x, x + \frac{1}{2}]$	[63, 67, 72]
24	$[x + \frac{1}{2}, x, \frac{1}{2} - x]$	[64, 68, 69]
25	$[x + \frac{1}{2}, x + \frac{1}{2}, x]$	[73, 77, 78]
26	$[x + \frac{1}{2}, \frac{1}{2} - x, -x]$	[74, 82, 83]
27	$[\frac{1}{2} - x, x + \frac{1}{2}, -x]$	[75, 79, 84]
28	$[\frac{1}{2} - x, \frac{1}{2} - x, x]$	[76, 80, 81]
29	$[\frac{1}{2} - x, \frac{1}{2} - x, -x]$	[85, 89, 90]
30	$[\frac{1}{2} - x, x + \frac{1}{2}, x]$	[86, 94, 95]
31	$[x + \frac{1}{2}, \frac{1}{2} - x, x]$	[87, 91, 96]
32	$[x + \frac{1}{2}, x + \frac{1}{2}, -x]$	[88, 92, 93]
33	$[x, x, x + \frac{1}{2}]$	[97, 101, 102]
34	$[x, -x, \frac{1}{2} - x]$	[98, 106, 107]
35	$[-x, x, \frac{1}{2} - x]$	[99, 103, 108]
36	$[-x, -x, x + \frac{1}{2}]$	[100, 104, 105]
37	$[-x, -x, \frac{1}{2} - x]$	[109, 113, 114]
38	$[-x, x, x + \frac{1}{2}]$	[110, 118, 119]
39	$[x, -x, x + \frac{1}{2}]$	[111, 115, 120]
40	$[x, x, \frac{1}{2} - x]$	[112, 116, 117]
41	$[x, x + \frac{1}{2}, x]$	[121, 125, 126]
42	$[x, \frac{1}{2} - x, -x]$	[122, 130, 131]
43	$[-x, x + \frac{1}{2}, -x]$	[123, 127, 132]
44	$[-x, \frac{1}{2} - x, x]$	[124, 128, 129]
45	$[-x, \frac{1}{2} - x, -x]$	[133, 137, 138]
46	$[-x, x + \frac{1}{2}, x]$	[134, 142, 143]
47	$[x, \frac{1}{2} - x, x]$	[135, 139, 144]
48	$[x, x + \frac{1}{2}, -x]$	[136, 140, 141]
49	$[x + \frac{1}{2}, x, x]$	[145, 149, 150]
50	$[x + \frac{1}{2}, -x, -x]$	[146, 154, 155]
51	$[\frac{1}{2} - x, x, -x]$	[147, 151, 156]
52	$[\frac{1}{2} - x, -x, x]$	[148, 152, 153]
53	$[\frac{1}{2} - x, -x, -x]$	[157, 161, 162]
54	$[\frac{1}{2} - x, x, x]$	[158, 166, 167]
55	$[x + \frac{1}{2}, -x, x]$	[159, 163, 168]
56	$[x + \frac{1}{2}, x, -x]$	[160, 164, 165]
57	$[x + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$	[169, 173, 174]
58	$[x + \frac{1}{2}, \frac{1}{2} - x, \frac{1}{2} - x]$	[170, 178, 179]
59	$[\frac{1}{2} - x, x + \frac{1}{2}, \frac{1}{2} - x]$	[171, 175, 180]
60	$[\frac{1}{2} - x, \frac{1}{2} - x, x + \frac{1}{2}]$	[172, 176, 177]
61	$[\frac{1}{2} - x, \frac{1}{2} - x, \frac{1}{2} - x]$	[181, 185, 186]

continued ...

Table 9

No.	position	mapping
62	$[\frac{1}{2} - x, x + \frac{1}{2}, x + \frac{1}{2}]$	[182, 190, 191]
63	$[x + \frac{1}{2}, \frac{1}{2} - x, x + \frac{1}{2}]$	[183, 187, 192]
64	$[x + \frac{1}{2}, x + \frac{1}{2}, \frac{1}{2} - x]$	[184, 188, 189]

Table 10: Wyckoff site: 96j, site symmetry: m . .

No.	position	mapping
1	[0, y, z]	[1, 14]
2	[0, -y, -z]	[2, 13]
3	[0, y, -z]	[3, 16]
4	[0, -y, z]	[4, 15]
5	[z, 0, y]	[5, 24]
6	[y, z, 0]	[6, 21]
7	[-y, z, 0]	[7, 23]
8	[-z, 0, y]	[8, 22]
9	[-y, -z, 0]	[9, 18]
10	[z, 0, -y]	[10, 20]
11	[y, -z, 0]	[11, 19]
12	[-z, 0, -y]	[12, 17]
13	$[0, y + \frac{1}{2}, z + \frac{1}{2}]$	[25, 38]
14	$[0, \frac{1}{2} - y, \frac{1}{2} - z]$	[26, 37]
15	$[0, y + \frac{1}{2}, \frac{1}{2} - z]$	[27, 40]
16	$[0, \frac{1}{2} - y, z + \frac{1}{2}]$	[28, 39]
17	$[z, \frac{1}{2}, y + \frac{1}{2}]$	[29, 48]
18	$[y, z + \frac{1}{2}, \frac{1}{2}]$	[30, 45]
19	$[-y, z + \frac{1}{2}, \frac{1}{2}]$	[31, 47]
20	$[-z, \frac{1}{2}, y + \frac{1}{2}]$	[32, 46]
21	$[-y, \frac{1}{2} - z, \frac{1}{2}]$	[33, 42]
22	$[z, \frac{1}{2}, \frac{1}{2} - y]$	[34, 44]
23	$[y, \frac{1}{2} - z, \frac{1}{2}]$	[35, 43]
24	$[-z, \frac{1}{2}, \frac{1}{2} - y]$	[36, 41]
25	$[\frac{1}{2}, y, z + \frac{1}{2}]$	[49, 62]
26	$[\frac{1}{2}, -y, \frac{1}{2} - z]$	[50, 61]
27	$[\frac{1}{2}, y, \frac{1}{2} - z]$	[51, 64]
28	$[\frac{1}{2}, -y, z + \frac{1}{2}]$	[52, 63]
29	$[z + \frac{1}{2}, 0, y + \frac{1}{2}]$	[53, 72]
30	$[y + \frac{1}{2}, z, \frac{1}{2}]$	[54, 69]
31	$[\frac{1}{2} - y, z, \frac{1}{2}]$	[55, 71]
32	$[\frac{1}{2} - z, 0, y + \frac{1}{2}]$	[56, 70]
33	$[\frac{1}{2} - y, -z, \frac{1}{2}]$	[57, 66]
34	$[z + \frac{1}{2}, 0, \frac{1}{2} - y]$	[58, 68]
35	$[y + \frac{1}{2}, -z, \frac{1}{2}]$	[59, 67]
36	$[\frac{1}{2} - z, 0, \frac{1}{2} - y]$	[60, 65]
37	$[\frac{1}{2}, y + \frac{1}{2}, z]$	[73, 86]

*continued ...*

Table 10

No.	position	mapping
38	$[\frac{1}{2}, \frac{1}{2} - y, -z]$	[74, 85]
39	$[\frac{1}{2}, y + \frac{1}{2}, -z]$	[75, 88]
40	$[\frac{1}{2}, \frac{1}{2} - y, z]$	[76, 87]
41	$[z + \frac{1}{2}, \frac{1}{2}, y]$	[77, 96]
42	$[y + \frac{1}{2}, z + \frac{1}{2}, 0]$	[78, 93]
43	$[\frac{1}{2} - y, z + \frac{1}{2}, 0]$	[79, 95]
44	$[\frac{1}{2} - z, \frac{1}{2}, y]$	[80, 94]
45	$[\frac{1}{2} - y, \frac{1}{2} - z, 0]$	[81, 90]
46	$[z + \frac{1}{2}, \frac{1}{2}, -y]$	[82, 92]
47	$[y + \frac{1}{2}, \frac{1}{2} - z, 0]$	[83, 91]
48	$[\frac{1}{2} - z, \frac{1}{2}, -y]$	[84, 89]
49	$[0, y, z + \frac{1}{2}]$	[97, 110]
50	$[0, -y, \frac{1}{2} - z]$	[98, 109]
51	$[0, y, \frac{1}{2} - z]$	[99, 112]
52	$[0, -y, z + \frac{1}{2}]$	[100, 111]
53	$[z, 0, y + \frac{1}{2}]$	[101, 120]
54	$[y, z, \frac{1}{2}]$	[102, 117]
55	$[-y, z, \frac{1}{2}]$	[103, 119]
56	$[-z, 0, y + \frac{1}{2}]$	[104, 118]
57	$[-y, -z, \frac{1}{2}]$	[105, 114]
58	$[z, 0, \frac{1}{2} - y]$	[106, 116]
59	$[y, -z, \frac{1}{2}]$	[107, 115]
60	$[-z, 0, \frac{1}{2} - y]$	[108, 113]
61	$[0, y + \frac{1}{2}, z]$	[121, 134]
62	$[0, \frac{1}{2} - y, -z]$	[122, 133]
63	$[0, y + \frac{1}{2}, -z]$	[123, 136]
64	$[0, \frac{1}{2} - y, z]$	[124, 135]
65	$[z, \frac{1}{2}, y]$	[125, 144]
66	$[y, z + \frac{1}{2}, 0]$	[126, 141]
67	$[-y, z + \frac{1}{2}, 0]$	[127, 143]
68	$[-z, \frac{1}{2}, y]$	[128, 142]
69	$[-y, \frac{1}{2} - z, 0]$	[129, 138]
70	$[z, \frac{1}{2}, -y]$	[130, 140]
71	$[y, \frac{1}{2} - z, 0]$	[131, 139]
72	$[-z, \frac{1}{2}, -y]$	[132, 137]
73	$[\frac{1}{2}, y, z]$	[145, 158]
74	$[\frac{1}{2}, -y, -z]$	[146, 157]
75	$[\frac{1}{2}, y, -z]$	[147, 160]
76	$[\frac{1}{2}, -y, z]$	[148, 159]
77	$[z + \frac{1}{2}, 0, y]$	[149, 168]
78	$[y + \frac{1}{2}, z, 0]$	[150, 165]
79	$[\frac{1}{2} - y, z, 0]$	[151, 167]
80	$[\frac{1}{2} - z, 0, y]$	[152, 166]
81	$[\frac{1}{2} - y, -z, 0]$	[153, 162]
82	$[z + \frac{1}{2}, 0, -y]$	[154, 164]
83	$[y + \frac{1}{2}, -z, 0]$	[155, 163]
84	$[\frac{1}{2} - z, 0, -y]$	[156, 161]

continued ...

Table 10

No.	position	mapping
85	$[\frac{1}{2}, y + \frac{1}{2}, z + \frac{1}{2}]$	[169, 182]
86	$[\frac{1}{2}, \frac{1}{2} - y, \frac{1}{2} - z]$	[170, 181]
87	$[\frac{1}{2}, y + \frac{1}{2}, \frac{1}{2} - z]$	[171, 184]
88	$[\frac{1}{2}, \frac{1}{2} - y, z + \frac{1}{2}]$	[172, 183]
89	$[z + \frac{1}{2}, \frac{1}{2}, y + \frac{1}{2}]$	[173, 192]
90	$[y + \frac{1}{2}, z + \frac{1}{2}, \frac{1}{2}]$	[174, 189]
91	$[\frac{1}{2} - y, z + \frac{1}{2}, \frac{1}{2}]$	[175, 191]
92	$[\frac{1}{2} - z, \frac{1}{2}, y + \frac{1}{2}]$	[176, 190]
93	$[\frac{1}{2} - y, \frac{1}{2} - z, \frac{1}{2}]$	[177, 186]
94	$[z + \frac{1}{2}, \frac{1}{2}, \frac{1}{2} - y]$	[178, 188]
95	$[y + \frac{1}{2}, \frac{1}{2} - z, \frac{1}{2}]$	[179, 187]
96	$[\frac{1}{2} - z, \frac{1}{2}, \frac{1}{2} - y]$	[180, 185]

Table 11: Wyckoff site: 96k, site symmetry:  $m' . .$ 

No.	position	mapping
1	$[\frac{1}{4}, y, z]$	[1, 158]
2	$[\frac{1}{4}, -y, -z]$	[2, 157]
3	$[\frac{3}{4}, y, -z]$	[3, 160]
4	$[\frac{3}{4}, -y, z]$	[4, 159]
5	$[z, \frac{1}{4}, y]$	[5, 144]
6	$[y, z, \frac{1}{4}]$	[6, 117]
7	$[-y, z, \frac{3}{4}]$	[7, 119]
8	$[-z, \frac{3}{4}, y]$	[8, 142]
9	$[-y, -z, \frac{1}{4}]$	[9, 114]
10	$[z, \frac{3}{4}, -y]$	[10, 140]
11	$[y, -z, \frac{3}{4}]$	[11, 115]
12	$[-z, \frac{1}{4}, -y]$	[12, 137]
13	$[\frac{3}{4}, -y, -z]$	[13, 146]
14	$[\frac{3}{4}, y, z]$	[14, 145]
15	$[\frac{1}{4}, -y, z]$	[15, 148]
16	$[\frac{1}{4}, y, -z]$	[16, 147]
17	$[-z, \frac{3}{4}, -y]$	[17, 132]
18	$[-y, -z, \frac{3}{4}]$	[18, 105]
19	$[y, -z, \frac{1}{4}]$	[19, 107]
20	$[z, \frac{1}{4}, -y]$	[20, 130]
21	$[y, z, \frac{3}{4}]$	[21, 102]
22	$[-z, \frac{1}{4}, y]$	[22, 128]
23	$[-y, z, \frac{1}{4}]$	[23, 103]
24	$[z, \frac{3}{4}, y]$	[24, 125]
25	$[\frac{1}{4}, y + \frac{1}{2}, z + \frac{1}{2}]$	[25, 182]
26	$[\frac{1}{4}, \frac{1}{2} - y, \frac{1}{2} - z]$	[26, 181]
27	$[\frac{3}{4}, y + \frac{1}{2}, \frac{1}{2} - z]$	[27, 184]
28	$[\frac{3}{4}, \frac{1}{2} - y, z + \frac{1}{2}]$	[28, 183]

*continued ...*

Table 11

No.	position	mapping
29	$[z, \frac{3}{4}, y + \frac{1}{2}]$	[29,120]
30	$[y, z + \frac{1}{2}, \frac{3}{4}]$	[30,141]
31	$[-y, z + \frac{1}{2}, \frac{1}{4}]$	[31,143]
32	$[-z, \frac{1}{4}, y + \frac{1}{2}]$	[32,118]
33	$[-y, \frac{1}{2} - z, \frac{3}{4}]$	[33,138]
34	$[z, \frac{1}{4}, \frac{1}{2} - y]$	[34,116]
35	$[y, \frac{1}{2} - z, \frac{1}{4}]$	[35,139]
36	$[-z, \frac{3}{4}, \frac{1}{2} - y]$	[36,113]
37	$[\frac{3}{4}, \frac{1}{2} - y, \frac{1}{2} - z]$	[37,170]
38	$[\frac{3}{4}, y + \frac{1}{2}, z + \frac{1}{2}]$	[38,169]
39	$[\frac{1}{4}, \frac{1}{2} - y, z + \frac{1}{2}]$	[39,172]
40	$[\frac{1}{4}, y + \frac{1}{2}, \frac{1}{2} - z]$	[40,171]
41	$[-z, \frac{1}{4}, \frac{1}{2} - y]$	[41,108]
42	$[-y, \frac{1}{2} - z, \frac{1}{4}]$	[42,129]
43	$[y, \frac{1}{2} - z, \frac{3}{4}]$	[43,131]
44	$[z, \frac{3}{4}, \frac{1}{2} - y]$	[44,106]
45	$[y, z + \frac{1}{2}, \frac{1}{4}]$	[45,126]
46	$[-z, \frac{3}{4}, y + \frac{1}{2}]$	[46,104]
47	$[-y, z + \frac{1}{2}, \frac{3}{4}]$	[47,127]
48	$[z, \frac{1}{4}, y + \frac{1}{2}]$	[48,101]
49	$[\frac{3}{4}, y, z + \frac{1}{2}]$	[49,110]
50	$[\frac{3}{4}, -y, \frac{1}{2} - z]$	[50,109]
51	$[\frac{1}{4}, y, \frac{1}{2} - z]$	[51,112]
52	$[\frac{1}{4}, -y, z + \frac{1}{2}]$	[52,111]
53	$[z + \frac{1}{2}, \frac{1}{4}, y + \frac{1}{2}]$	[53,192]
54	$[y + \frac{1}{2}, z, \frac{3}{4}]$	[54,165]
55	$[\frac{1}{2} - y, z, \frac{1}{4}]$	[55,167]
56	$[\frac{1}{2} - z, \frac{3}{4}, y + \frac{1}{2}]$	[56,190]
57	$[\frac{1}{2} - y, -z, \frac{3}{4}]$	[57,162]
58	$[z + \frac{1}{2}, \frac{3}{4}, \frac{1}{2} - y]$	[58,188]
59	$[y + \frac{1}{2}, -z, \frac{1}{4}]$	[59,163]
60	$[\frac{1}{2} - z, \frac{1}{4}, \frac{1}{2} - y]$	[60,185]
61	$[\frac{1}{4}, -y, \frac{1}{2} - z]$	[61,98]
62	$[\frac{1}{4}, y, z + \frac{1}{2}]$	[62,97]
63	$[\frac{3}{4}, -y, z + \frac{1}{2}]$	[63,100]
64	$[\frac{3}{4}, y, \frac{1}{2} - z]$	[64,99]
65	$[\frac{1}{2} - z, \frac{3}{4}, \frac{1}{2} - y]$	[65,180]
66	$[\frac{1}{2} - y, -z, \frac{1}{4}]$	[66,153]
67	$[y + \frac{1}{2}, -z, \frac{3}{4}]$	[67,155]
68	$[z + \frac{1}{2}, \frac{1}{4}, \frac{1}{2} - y]$	[68,178]
69	$[y + \frac{1}{2}, z, \frac{1}{4}]$	[69,150]
70	$[\frac{1}{2} - z, \frac{1}{4}, y + \frac{1}{2}]$	[70,176]
71	$[\frac{1}{2} - y, z, \frac{3}{4}]$	[71,151]
72	$[z + \frac{1}{2}, \frac{3}{4}, y + \frac{1}{2}]$	[72,173]
73	$[\frac{3}{4}, y + \frac{1}{2}, z]$	[73,134]
74	$[\frac{3}{4}, \frac{1}{2} - y, -z]$	[74,133]
75	$[\frac{1}{4}, y + \frac{1}{2}, -z]$	[75,136]

continued ...

Table 11

No.	position	mapping
76	$[\frac{1}{4}, \frac{1}{2} - y, z]$	[76,135]
77	$[z + \frac{1}{2}, \frac{3}{4}, y]$	[77,168]
78	$[y + \frac{1}{2}, z + \frac{1}{2}, \frac{1}{4}]$	[78,189]
79	$[\frac{1}{2} - y, z + \frac{1}{2}, \frac{3}{4}]$	[79,191]
80	$[\frac{1}{2} - z, \frac{1}{4}, y]$	[80,166]
81	$[\frac{1}{2} - y, \frac{1}{2} - z, \frac{1}{4}]$	[81,186]
82	$[z + \frac{1}{2}, \frac{1}{4}, -y]$	[82,164]
83	$[y + \frac{1}{2}, \frac{1}{2} - z, \frac{3}{4}]$	[83,187]
84	$[\frac{1}{2} - z, \frac{3}{4}, -y]$	[84,161]
85	$[\frac{1}{4}, \frac{1}{2} - y, -z]$	[85,122]
86	$[\frac{1}{4}, y + \frac{1}{2}, z]$	[86,121]
87	$[\frac{3}{4}, \frac{1}{2} - y, z]$	[87,124]
88	$[\frac{3}{4}, y + \frac{1}{2}, -z]$	[88,123]
89	$[\frac{1}{2} - z, \frac{1}{4}, -y]$	[89,156]
90	$[\frac{1}{2} - y, \frac{1}{2} - z, \frac{3}{4}]$	[90,177]
91	$[y + \frac{1}{2}, \frac{1}{2} - z, \frac{1}{4}]$	[91,179]
92	$[z + \frac{1}{2}, \frac{3}{4}, -y]$	[92,154]
93	$[y + \frac{1}{2}, z + \frac{1}{2}, \frac{3}{4}]$	[93,174]
94	$[\frac{1}{2} - z, \frac{3}{4}, y]$	[94,152]
95	$[\frac{1}{2} - y, z + \frac{1}{2}, \frac{1}{4}]$	[95,175]
96	$[z + \frac{1}{2}, \frac{1}{4}, y]$	[96,149]

Table 12: Wyckoff site: 1921, site symmetry: 1

No.	position	mapping
1	$[x, y, z]$	[1]
2	$[x, -y, -z]$	[2]
3	$[-x, y, -z]$	[3]
4	$[-x, -y, z]$	[4]
5	$[z, x, y]$	[5]
6	$[y, z, x]$	[6]
7	$[-y, z, -x]$	[7]
8	$[-z, -x, y]$	[8]
9	$[-y, -z, x]$	[9]
10	$[z, -x, -y]$	[10]
11	$[y, -z, -x]$	[11]
12	$[-z, x, -y]$	[12]
13	$[-x, -y, -z]$	[13]
14	$[-x, y, z]$	[14]
15	$[x, -y, z]$	[15]
16	$[x, y, -z]$	[16]
17	$[-z, -x, -y]$	[17]
18	$[-y, -z, -x]$	[18]
19	$[y, -z, x]$	[19]

*continued ...*

Table 12

No.	position	mapping
20	$[z, x, -y]$	[20]
21	$[y, z, -x]$	[21]
22	$[-z, x, y]$	[22]
23	$[-y, z, x]$	[23]
24	$[z, -x, y]$	[24]
25	$[x, y + \frac{1}{2}, z + \frac{1}{2}]$	[25]
26	$[x, \frac{1}{2} - y, \frac{1}{2} - z]$	[26]
27	$[-x, y + \frac{1}{2}, \frac{1}{2} - z]$	[27]
28	$[-x, \frac{1}{2} - y, z + \frac{1}{2}]$	[28]
29	$[z, x + \frac{1}{2}, y + \frac{1}{2}]$	[29]
30	$[y, z + \frac{1}{2}, x + \frac{1}{2}]$	[30]
31	$[-y, z + \frac{1}{2}, \frac{1}{2} - x]$	[31]
32	$[-z, \frac{1}{2} - x, y + \frac{1}{2}]$	[32]
33	$[-y, \frac{1}{2} - z, x + \frac{1}{2}]$	[33]
34	$[z, \frac{1}{2} - x, \frac{1}{2} - y]$	[34]
35	$[y, \frac{1}{2} - z, \frac{1}{2} - x]$	[35]
36	$[-z, x + \frac{1}{2}, \frac{1}{2} - y]$	[36]
37	$[-x, \frac{1}{2} - y, \frac{1}{2} - z]$	[37]
38	$[-x, y + \frac{1}{2}, z + \frac{1}{2}]$	[38]
39	$[x, \frac{1}{2} - y, z + \frac{1}{2}]$	[39]
40	$[x, y + \frac{1}{2}, \frac{1}{2} - z]$	[40]
41	$[-z, \frac{1}{2} - x, \frac{1}{2} - y]$	[41]
42	$[-y, \frac{1}{2} - z, \frac{1}{2} - x]$	[42]
43	$[y, \frac{1}{2} - z, x + \frac{1}{2}]$	[43]
44	$[z, x + \frac{1}{2}, \frac{1}{2} - y]$	[44]
45	$[y, z + \frac{1}{2}, \frac{1}{2} - x]$	[45]
46	$[-z, x + \frac{1}{2}, y + \frac{1}{2}]$	[46]
47	$[-y, z + \frac{1}{2}, x + \frac{1}{2}]$	[47]
48	$[z, \frac{1}{2} - x, y + \frac{1}{2}]$	[48]
49	$[x + \frac{1}{2}, y, z + \frac{1}{2}]$	[49]
50	$[x + \frac{1}{2}, -y, \frac{1}{2} - z]$	[50]
51	$[\frac{1}{2} - x, y, \frac{1}{2} - z]$	[51]
52	$[\frac{1}{2} - x, -y, z + \frac{1}{2}]$	[52]
53	$[z + \frac{1}{2}, x, y + \frac{1}{2}]$	[53]
54	$[y + \frac{1}{2}, z, x + \frac{1}{2}]$	[54]
55	$[\frac{1}{2} - y, z, \frac{1}{2} - x]$	[55]
56	$[\frac{1}{2} - z, -x, y + \frac{1}{2}]$	[56]
57	$[\frac{1}{2} - y, -z, x + \frac{1}{2}]$	[57]
58	$[z + \frac{1}{2}, -x, \frac{1}{2} - y]$	[58]
59	$[y + \frac{1}{2}, -z, \frac{1}{2} - x]$	[59]
60	$[\frac{1}{2} - z, x, \frac{1}{2} - y]$	[60]
61	$[\frac{1}{2} - x, -y, \frac{1}{2} - z]$	[61]
62	$[\frac{1}{2} - x, y, z + \frac{1}{2}]$	[62]
63	$[x + \frac{1}{2}, -y, z + \frac{1}{2}]$	[63]
64	$[x + \frac{1}{2}, y, \frac{1}{2} - z]$	[64]
65	$[\frac{1}{2} - z, -x, \frac{1}{2} - y]$	[65]
66	$[\frac{1}{2} - y, -z, \frac{1}{2} - x]$	[66]

continued ...

Table 12

No.	position	mapping
67	$[y + \frac{1}{2}, -z, x + \frac{1}{2}]$	[67]
68	$[z + \frac{1}{2}, x, \frac{1}{2} - y]$	[68]
69	$[y + \frac{1}{2}, z, \frac{1}{2} - x]$	[69]
70	$[\frac{1}{2} - z, x, y + \frac{1}{2}]$	[70]
71	$[\frac{1}{2} - y, z, x + \frac{1}{2}]$	[71]
72	$[z + \frac{1}{2}, -x, y + \frac{1}{2}]$	[72]
73	$[x + \frac{1}{2}, y + \frac{1}{2}, z]$	[73]
74	$[x + \frac{1}{2}, \frac{1}{2} - y, -z]$	[74]
75	$[\frac{1}{2} - x, y + \frac{1}{2}, -z]$	[75]
76	$[\frac{1}{2} - x, \frac{1}{2} - y, z]$	[76]
77	$[z + \frac{1}{2}, x + \frac{1}{2}, y]$	[77]
78	$[y + \frac{1}{2}, z + \frac{1}{2}, x]$	[78]
79	$[\frac{1}{2} - y, z + \frac{1}{2}, -x]$	[79]
80	$[\frac{1}{2} - z, \frac{1}{2} - x, y]$	[80]
81	$[\frac{1}{2} - y, \frac{1}{2} - z, x]$	[81]
82	$[z + \frac{1}{2}, \frac{1}{2} - x, -y]$	[82]
83	$[y + \frac{1}{2}, \frac{1}{2} - z, -x]$	[83]
84	$[\frac{1}{2} - z, x + \frac{1}{2}, -y]$	[84]
85	$[\frac{1}{2} - x, \frac{1}{2} - y, -z]$	[85]
86	$[\frac{1}{2} - x, y + \frac{1}{2}, z]$	[86]
87	$[x + \frac{1}{2}, \frac{1}{2} - y, z]$	[87]
88	$[x + \frac{1}{2}, y + \frac{1}{2}, -z]$	[88]
89	$[\frac{1}{2} - z, \frac{1}{2} - x, -y]$	[89]
90	$[\frac{1}{2} - y, \frac{1}{2} - z, -x]$	[90]
91	$[y + \frac{1}{2}, \frac{1}{2} - z, x]$	[91]
92	$[z + \frac{1}{2}, x + \frac{1}{2}, -y]$	[92]
93	$[y + \frac{1}{2}, z + \frac{1}{2}, -x]$	[93]
94	$[\frac{1}{2} - z, x + \frac{1}{2}, y]$	[94]
95	$[\frac{1}{2} - y, z + \frac{1}{2}, x]$	[95]
96	$[z + \frac{1}{2}, \frac{1}{2} - x, y]$	[96]
97	$[x, y, z + \frac{1}{2}]$	[97]
98	$[x, -y, \frac{1}{2} - z]$	[98]
99	$[-x, y, \frac{1}{2} - z]$	[99]
100	$[-x, -y, z + \frac{1}{2}]$	[100]
101	$[z, x, y + \frac{1}{2}]$	[101]
102	$[y, z, x + \frac{1}{2}]$	[102]
103	$[-y, z, \frac{1}{2} - x]$	[103]
104	$[-z, -x, y + \frac{1}{2}]$	[104]
105	$[-y, -z, x + \frac{1}{2}]$	[105]
106	$[z, -x, \frac{1}{2} - y]$	[106]
107	$[y, -z, \frac{1}{2} - x]$	[107]
108	$[-z, x, \frac{1}{2} - y]$	[108]
109	$[-x, -y, \frac{1}{2} - z]$	[109]
110	$[-x, y, z + \frac{1}{2}]$	[110]
111	$[x, -y, z + \frac{1}{2}]$	[111]
112	$[x, y, \frac{1}{2} - z]$	[112]
113	$[-z, -x, \frac{1}{2} - y]$	[113]

continued ...

Table 12

No.	position	mapping
114	$[-y, -z, \frac{1}{2} - x]$	[114]
115	$[y, -z, x + \frac{1}{2}]$	[115]
116	$[z, x, \frac{1}{2} - y]$	[116]
117	$[y, z, \frac{1}{2} - x]$	[117]
118	$[-z, x, y + \frac{1}{2}]$	[118]
119	$[-y, z, x + \frac{1}{2}]$	[119]
120	$[z, -x, y + \frac{1}{2}]$	[120]
121	$[x, y + \frac{1}{2}, z]$	[121]
122	$[x, \frac{1}{2} - y, -z]$	[122]
123	$[-x, y + \frac{1}{2}, -z]$	[123]
124	$[-x, \frac{1}{2} - y, z]$	[124]
125	$[z, x + \frac{1}{2}, y]$	[125]
126	$[y, z + \frac{1}{2}, x]$	[126]
127	$[-y, z + \frac{1}{2}, -x]$	[127]
128	$[-z, \frac{1}{2} - x, y]$	[128]
129	$[-y, \frac{1}{2} - z, x]$	[129]
130	$[z, \frac{1}{2} - x, -y]$	[130]
131	$[y, \frac{1}{2} - z, -x]$	[131]
132	$[-z, x + \frac{1}{2}, -y]$	[132]
133	$[-x, \frac{1}{2} - y, -z]$	[133]
134	$[-x, y + \frac{1}{2}, z]$	[134]
135	$[x, \frac{1}{2} - y, z]$	[135]
136	$[x, y + \frac{1}{2}, -z]$	[136]
137	$[-z, \frac{1}{2} - x, -y]$	[137]
138	$[-y, \frac{1}{2} - z, -x]$	[138]
139	$[y, \frac{1}{2} - z, x]$	[139]
140	$[z, x + \frac{1}{2}, -y]$	[140]
141	$[y, z + \frac{1}{2}, -x]$	[141]
142	$[-z, x + \frac{1}{2}, y]$	[142]
143	$[-y, z + \frac{1}{2}, x]$	[143]
144	$[z, \frac{1}{2} - x, y]$	[144]
145	$[x + \frac{1}{2}, y, z]$	[145]
146	$[x + \frac{1}{2}, -y, -z]$	[146]
147	$[\frac{1}{2} - x, y, -z]$	[147]
148	$[\frac{1}{2} - x, -y, z]$	[148]
149	$[z + \frac{1}{2}, x, y]$	[149]
150	$[y + \frac{1}{2}, z, x]$	[150]
151	$[\frac{1}{2} - y, z, -x]$	[151]
152	$[\frac{1}{2} - z, -x, y]$	[152]
153	$[\frac{1}{2} - y, -z, x]$	[153]
154	$[z + \frac{1}{2}, -x, -y]$	[154]
155	$[y + \frac{1}{2}, -z, -x]$	[155]
156	$[\frac{1}{2} - z, x, -y]$	[156]
157	$[\frac{1}{2} - x, -y, -z]$	[157]
158	$[\frac{1}{2} - x, y, z]$	[158]
159	$[x + \frac{1}{2}, -y, z]$	[159]
160	$[x + \frac{1}{2}, y, -z]$	[160]

continued ...

Table 12

No.	position	mapping
161	$[\frac{1}{2} - z, -x, -y]$	[161]
162	$[\frac{1}{2} - y, -z, -x]$	[162]
163	$[y + \frac{1}{2}, -z, x]$	[163]
164	$[z + \frac{1}{2}, x, -y]$	[164]
165	$[y + \frac{1}{2}, z, -x]$	[165]
166	$[\frac{1}{2} - z, x, y]$	[166]
167	$[\frac{1}{2} - y, z, x]$	[167]
168	$[z + \frac{1}{2}, -x, y]$	[168]
169	$[x + \frac{1}{2}, y + \frac{1}{2}, z + \frac{1}{2}]$	[169]
170	$[x + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{2} - z]$	[170]
171	$[\frac{1}{2} - x, y + \frac{1}{2}, \frac{1}{2} - z]$	[171]
172	$[\frac{1}{2} - x, \frac{1}{2} - y, z + \frac{1}{2}]$	[172]
173	$[z + \frac{1}{2}, x + \frac{1}{2}, y + \frac{1}{2}]$	[173]
174	$[y + \frac{1}{2}, z + \frac{1}{2}, x + \frac{1}{2}]$	[174]
175	$[\frac{1}{2} - y, z + \frac{1}{2}, \frac{1}{2} - x]$	[175]
176	$[\frac{1}{2} - z, \frac{1}{2} - x, y + \frac{1}{2}]$	[176]
177	$[\frac{1}{2} - y, \frac{1}{2} - z, x + \frac{1}{2}]$	[177]
178	$[z + \frac{1}{2}, \frac{1}{2} - x, \frac{1}{2} - y]$	[178]
179	$[y + \frac{1}{2}, \frac{1}{2} - z, \frac{1}{2} - x]$	[179]
180	$[\frac{1}{2} - z, x + \frac{1}{2}, \frac{1}{2} - y]$	[180]
181	$[\frac{1}{2} - x, \frac{1}{2} - y, \frac{1}{2} - z]$	[181]
182	$[\frac{1}{2} - x, y + \frac{1}{2}, z + \frac{1}{2}]$	[182]
183	$[x + \frac{1}{2}, \frac{1}{2} - y, z + \frac{1}{2}]$	[183]
184	$[x + \frac{1}{2}, y + \frac{1}{2}, \frac{1}{2} - z]$	[184]
185	$[\frac{1}{2} - z, \frac{1}{2} - x, \frac{1}{2} - y]$	[185]
186	$[\frac{1}{2} - y, \frac{1}{2} - z, \frac{1}{2} - x]$	[186]
187	$[y + \frac{1}{2}, \frac{1}{2} - z, x + \frac{1}{2}]$	[187]
188	$[z + \frac{1}{2}, x + \frac{1}{2}, \frac{1}{2} - y]$	[188]
189	$[y + \frac{1}{2}, z + \frac{1}{2}, \frac{1}{2} - x]$	[189]
190	$[\frac{1}{2} - z, x + \frac{1}{2}, y + \frac{1}{2}]$	[190]
191	$[\frac{1}{2} - y, z + \frac{1}{2}, x + \frac{1}{2}]$	[191]
192	$[z + \frac{1}{2}, \frac{1}{2} - x, y + \frac{1}{2}]$	[192]