

SG No. 226  $O_h^6$   $Fm\bar{3}c$  [ cubic ]

\* plus set:  $+[0, 0, 0]$ ,  $+[0, \frac{1}{2}, \frac{1}{2}]$ ,  $+\left[\frac{1}{2}, 0, \frac{1}{2}\right]$ ,  $+\left[\frac{1}{2}, \frac{1}{2}, 0\right]$

\* Wyckoff site: 8a, site symmetry: 432

Table 1: Wyckoff bond: 24a@8a

No.	vector	center	mapping
1	$[X, 0, 0]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[1, -2, -3, 4, 17, -18, -19, 20]$
2	$[0, X, 0]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[5, -6, -7, 8, 13, -14, -15, 16]$
3	$[0, 0, X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[9, -10, -11, 12, -21, 22, 23, -24]$
4	$[-X, 0, 0]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[25, -26, -27, 28, 41, -42, -43, 44]$
5	$[0, -X, 0]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[29, -30, -31, 32, 37, -38, -39, 40]$
6	$[0, 0, -X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[33, -34, -35, 36, -45, 46, 47, -48]$

Table 2: Wyckoff bond: 32b@8a

No.	vector	center	mapping
1	$[X, X, X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[1, 5, 9, -14, -19, -24]$
2	$[-X, -X, X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[2, 7, 12, -13, -17, -21]$
3	$[-X, X, -X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[3, 8, 10, -15, -20, -22]$
4	$[X, -X, -X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[4, 6, 11, -16, -18, -23]$
5	$[-X, -X, -X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[25, 29, 33, -38, -43, -48]$
6	$[X, X, -X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[26, 31, 36, -37, -41, -45]$
7	$[X, -X, X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[27, 32, 34, -39, -44, -46]$
8	$[-X, X, X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[28, 30, 35, -40, -42, -47]$

Table 3: Wyckoff bond: 48c@8a

No.	vector	center	mapping
1	$[X, X, 0]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[1, -2, 13, -14]$
2	$[-X, X, 0]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[3, -4, -15, 16]$
3	$[0, X, X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[5, -6, 23, -24]$
4	$[0, -X, X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[7, -8, -21, 22]$
5	$[X, 0, X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[9, -10, -19, 20]$
6	$[X, 0, -X]$	$\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}\right]$	$[11, -12, 17, -18]$
7	$[-X, -X, 0]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[25, -26, 37, -38]$
8	$[X, -X, 0]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[27, -28, -39, 40]$
9	$[0, -X, -X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[29, -30, 47, -48]$
10	$[0, X, -X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[31, -32, -45, 46]$
11	$[-X, 0, -X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[33, -34, -43, 44]$
12	$[-X, 0, X]$	$\left[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}\right]$	$[35, -36, 41, -42]$

Table 4: Wyckoff bond: 96d@8a

No.	vector	center	mapping
1	[X, X, Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[1, -14]
2	[-X, -X, Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[2, -13]
3	[-X, X, -Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[3, -15]
4	[X, -X, -Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[4, -16]
5	[Y, X, X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[5, -24]
6	[Y, -X, -X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[6, -23]
7	[-Y, -X, X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[7, -21]
8	[-Y, X, -X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[8, -22]
9	[X, Y, X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[9, -19]
10	[-X, Y, -X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[10, -20]
11	[X, -Y, -X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[11, -18]
12	[-X, -Y, X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[12, -17]
13	[-X, -X, -Y]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[25, -38]
14	[X, X, -Y]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[26, -37]
15	[X, -X, Y]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[27, -39]
16	[-X, X, Y]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[28, -40]
17	[-Y, -X, -X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[29, -48]
18	[-Y, X, X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[30, -47]
19	[Y, X, -X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[31, -45]
20	[Y, -X, X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[32, -46]
21	[-X, -Y, -X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[33, -43]
22	[X, -Y, X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[34, -44]
23	[-X, Y, X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[35, -42]
24	[X, Y, -X]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[36, -41]

Table 5: Wyckoff bond: 96e@8a

No.	vector	center	mapping
1	[X, Y, 0]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[1, -2]
2	[-X, Y, 0]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[3, -4]
3	[0, X, Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[5, -6]
4	[0, -X, Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[7, -8]
5	[Y, 0, X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[9, -10]
6	[Y, 0, -X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[11, -12]
7	[Y, X, 0]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[13, -14]
8	[Y, -X, 0]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[15, -16]
9	[X, 0, -Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[17, -18]
10	[-X, 0, -Y]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[19, -20]
11	[0, Y, -X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[21, -22]
12	[0, Y, X]	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[23, -24]
13	[-X, -Y, 0]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[25, -26]
14	[X, -Y, 0]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[27, -28]
15	[0, -X, -Y]	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[29, -30]

*continued ...*

Table 5

No.	vector	center	mapping
16	$[0, X, -Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[31, -32]
17	$[-Y, 0, -X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[33, -34]
18	$[-Y, 0, X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[35, -36]
19	$[-Y, -X, 0]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[37, -38]
20	$[-Y, X, 0]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[39, -40]
21	$[-X, 0, Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[41, -42]
22	$[X, 0, Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[43, -44]
23	$[0, -Y, X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[45, -46]
24	$[0, -Y, -X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[47, -48]

Table 6: Wyckoff bond: 192f@8a

No.	vector	center	mapping
1	$[X, Y, Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[1]
2	$[-X, -Y, Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[2]
3	$[-X, Y, -Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[3]
4	$[X, -Y, -Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[4]
5	$[Z, X, Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[5]
6	$[Z, -X, -Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[6]
7	$[-Z, -X, Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[7]
8	$[-Z, X, -Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[8]
9	$[Y, Z, X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[9]
10	$[-Y, Z, -X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[10]
11	$[Y, -Z, -X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[11]
12	$[-Y, -Z, X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[12]
13	$[Y, X, -Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[13]
14	$[-Y, -X, -Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[14]
15	$[Y, -X, Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[15]
16	$[-Y, X, Z]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[16]
17	$[X, Z, -Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[17]
18	$[-X, Z, Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[18]
19	$[-X, -Z, -Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[19]
20	$[X, -Z, Y]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[20]
21	$[Z, Y, -X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[21]
22	$[Z, -Y, X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[22]
23	$[-Z, Y, X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[23]
24	$[-Z, -Y, -X]$	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[24]
25	$[-X, -Y, -Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[25]
26	$[X, Y, -Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[26]
27	$[X, -Y, Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[27]
28	$[-X, Y, Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[28]
29	$[-Z, -X, -Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[29]
30	$[-Z, X, Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[30]
31	$[Z, X, -Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[31]

*continued ...*

Table 6

No.	vector	center	mapping
32	$[Z, -X, Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[32]
33	$[-Y, -Z, -X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[33]
34	$[Y, -Z, X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[34]
35	$[-Y, Z, X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[35]
36	$[Y, Z, -X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[36]
37	$[-Y, -X, Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[37]
38	$[Y, X, Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[38]
39	$[-Y, X, -Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[39]
40	$[Y, -X, -Z]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[40]
41	$[-X, -Z, Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[41]
42	$[X, -Z, -Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[42]
43	$[X, Z, Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[43]
44	$[-X, Z, -Y]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[44]
45	$[-Z, -Y, X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[45]
46	$[-Z, Y, -X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[46]
47	$[Z, -Y, -X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[47]
48	$[Z, Y, X]$	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[48]

\* Wyckoff site: 8b, site symmetry: m-3.

Table 7: Wyckoff bond: 24a@8b

No.	vector	center	mapping
1	$[X, 0, 0]$	$[0, 0, 0]$	$[1, -2, -3, 4, -25, 26, 27, -28]$
2	$[0, X, 0]$	$[0, 0, 0]$	$[5, -6, -7, 8, -29, 30, 31, -32]$
3	$[0, 0, X]$	$[0, 0, 0]$	$[9, -10, -11, 12, -33, 34, 35, -36]$
4	$[0, X, 0]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[13, -14, -15, 16, -37, 38, 39, -40]$
5	$[X, 0, 0]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[17, -18, -19, 20, -41, 42, 43, -44]$
6	$[0, 0, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[21, -22, -23, 24, -45, 46, 47, -48]$

Table 8: Wyckoff bond: 32b@8b

No.	vector	center	mapping
1	$[X, X, X]$	$[0, 0, 0]$	$[1, 5, 9, -25, -29, -33]$
2	$[-X, -X, X]$	$[0, 0, 0]$	$[2, 7, 12, -26, -31, -36]$
3	$[-X, X, -X]$	$[0, 0, 0]$	$[3, 8, 10, -27, -32, -34]$
4	$[X, -X, -X]$	$[0, 0, 0]$	$[4, 6, 11, -28, -30, -35]$
5	$[X, X, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[13, 17, 21, -37, -41, -45]$
6	$[-X, -X, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[14, 19, 24, -38, -43, -48]$
7	$[X, -X, X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[15, 20, 22, -39, -44, -46]$
8	$[-X, X, X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	$[16, 18, 23, -40, -42, -47]$

Table 9: Wyckoff bond: 48c@8b

No.	vector	center	mapping
1	[X, Y, 0]	[0, 0, 0]	[1, -2, -25, 26]
2	[-X, Y, 0]	[0, 0, 0]	[3, -4, -27, 28]
3	[0, X, Y]	[0, 0, 0]	[5, -6, -29, 30]
4	[0, -X, Y]	[0, 0, 0]	[7, -8, -31, 32]
5	[Y, 0, X]	[0, 0, 0]	[9, -10, -33, 34]
6	[Y, 0, -X]	[0, 0, 0]	[11, -12, -35, 36]
7	[Y, X, 0]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[13, -14, -37, 38]
8	[Y, -X, 0]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[15, -16, -39, 40]
9	[X, 0, -Y]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[17, -18, -41, 42]
10	[-X, 0, -Y]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[19, -20, -43, 44]
11	[0, Y, -X]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[21, -22, -45, 46]
12	[0, Y, X]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[23, -24, -47, 48]

Table 10: Wyckoff bond: 96d@8b

No.	vector	center	mapping
1	[X, Y, Z]	[0, 0, 0]	[1, -25]
2	[-X, -Y, Z]	[0, 0, 0]	[2, -26]
3	[-X, Y, -Z]	[0, 0, 0]	[3, -27]
4	[X, -Y, -Z]	[0, 0, 0]	[4, -28]
5	[Z, X, Y]	[0, 0, 0]	[5, -29]
6	[Z, -X, -Y]	[0, 0, 0]	[6, -30]
7	[-Z, -X, Y]	[0, 0, 0]	[7, -31]
8	[-Z, X, -Y]	[0, 0, 0]	[8, -32]
9	[Y, Z, X]	[0, 0, 0]	[9, -33]
10	[-Y, Z, -X]	[0, 0, 0]	[10, -34]
11	[Y, -Z, -X]	[0, 0, 0]	[11, -35]
12	[-Y, -Z, X]	[0, 0, 0]	[12, -36]
13	[Y, X, -Z]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[13, -37]
14	[-Y, -X, -Z]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[14, -38]
15	[Y, -X, Z]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[15, -39]
16	[-Y, X, Z]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[16, -40]
17	[X, Z, -Y]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[17, -41]
18	[-X, Z, Y]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[18, -42]
19	[-X, -Z, -Y]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[19, -43]
20	[X, -Z, Y]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[20, -44]
21	[Z, Y, -X]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[21, -45]
22	[Z, -Y, X]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[22, -46]
23	[-Z, Y, X]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[23, -47]
24	[-Z, -Y, -X]	[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]	[24, -48]

\* Wyckoff site: 24c, site symmetry: -4m.2

Table 11: Wyckoff bond: 24a@24c

No.	vector	center	mapping
1	$[X, 0, 0]$	$[\frac{1}{4}, 0, 0]$	$[1, 4, -18, -19, 26, 27, -41, -44]$
2	$[-X, 0, 0]$	$[\frac{3}{4}, 0, 0]$	$[2, 3, -17, -20, 25, 28, -42, -43]$
3	$[0, X, 0]$	$[0, \frac{1}{4}, 0]$	$[5, 8, -14, -15, 30, 31, -37, -40]$
4	$[0, -X, 0]$	$[0, \frac{3}{4}, 0]$	$[6, 7, -13, -16, 29, 32, -38, -39]$
5	$[0, 0, X]$	$[0, 0, \frac{1}{4}]$	$[9, 12, -21, -24, 34, 35, -46, -47]$
6	$[0, 0, -X]$	$[0, 0, \frac{3}{4}]$	$[10, 11, -22, -23, 33, 36, -45, -48]$

Table 12: Wyckoff bond: 48b@24c

No.	vector	center	mapping
1	$[0, X, X]$	$[\frac{1}{4}, 0, 0]$	$[1, -4, 18, -19]$
2	$[0, -X, X]$	$[\frac{3}{4}, 0, 0]$	$[2, -3, -17, 20]$
3	$[X, 0, X]$	$[0, \frac{1}{4}, 0]$	$[5, -8, -14, 15]$
4	$[X, 0, -X]$	$[0, \frac{3}{4}, 0]$	$[6, -7, 13, -16]$
5	$[X, X, 0]$	$[0, 0, \frac{1}{4}]$	$[9, -12, 21, -24]$
6	$[-X, X, 0]$	$[0, 0, \frac{3}{4}]$	$[10, -11, -22, 23]$
7	$[0, -X, -X]$	$[\frac{3}{4}, 0, 0]$	$[25, -28, 42, -43]$
8	$[0, X, -X]$	$[\frac{1}{4}, 0, 0]$	$[26, -27, -41, 44]$
9	$[-X, 0, -X]$	$[0, \frac{3}{4}, 0]$	$[29, -32, -38, 39]$
10	$[-X, 0, X]$	$[0, \frac{1}{4}, 0]$	$[30, -31, 37, -40]$
11	$[-X, -X, 0]$	$[0, 0, \frac{3}{4}]$	$[33, -36, 45, -48]$
12	$[X, -X, 0]$	$[0, 0, \frac{1}{4}]$	$[34, -35, -46, 47]$

Table 13: Wyckoff bond: 48c@24c

No.	vector	center	mapping
1	$[0, 0, X]$	$[\frac{1}{4}, 0, 0]$	$[1, -4, -26, 27]$
2	$[0, 0, X]$	$[\frac{3}{4}, 0, 0]$	$[2, -3, -25, 28]$
3	$[X, 0, 0]$	$[0, \frac{1}{4}, 0]$	$[5, -8, -30, 31]$
4	$[X, 0, 0]$	$[0, \frac{3}{4}, 0]$	$[6, -7, -29, 32]$
5	$[0, X, 0]$	$[0, 0, \frac{1}{4}]$	$[9, -12, -34, 35]$
6	$[0, X, 0]$	$[0, 0, \frac{3}{4}]$	$[10, -11, -33, 36]$
7	$[0, 0, -X]$	$[0, \frac{3}{4}, 0]$	$[13, -16, -38, 39]$
8	$[0, 0, -X]$	$[0, \frac{1}{4}, 0]$	$[14, -15, -37, 40]$
9	$[0, X, 0]$	$[\frac{3}{4}, 0, 0]$	$[17, -20, -42, 43]$
10	$[0, X, 0]$	$[\frac{1}{4}, 0, 0]$	$[18, -19, -41, 44]$
11	$[X, 0, 0]$	$[0, 0, \frac{1}{4}]$	$[21, -24, -46, 47]$
12	$[X, 0, 0]$	$[0, 0, \frac{3}{4}]$	$[22, -23, -45, 48]$

Table 14: Wyckoff bond: 96d@24c

No.	vector	center	mapping
1	$[Y, X, X]$	$[\frac{1}{4}, 0, 0]$	[1,-19]
2	$[-Y, -X, X]$	$[\frac{3}{4}, 0, 0]$	[2,-17]
3	$[-Y, X, -X]$	$[\frac{3}{4}, 0, 0]$	[3,-20]
4	$[Y, -X, -X]$	$[\frac{1}{4}, 0, 0]$	[4,-18]
5	$[X, Y, X]$	$[0, \frac{1}{4}, 0]$	[5,-14]
6	$[X, -Y, -X]$	$[0, \frac{3}{4}, 0]$	[6,-16]
7	$[-X, -Y, X]$	$[0, \frac{3}{4}, 0]$	[7,-13]
8	$[-X, Y, -X]$	$[0, \frac{1}{4}, 0]$	[8,-15]
9	$[X, X, Y]$	$[0, 0, \frac{1}{4}]$	[9,-24]
10	$[-X, X, -Y]$	$[0, 0, \frac{3}{4}]$	[10,-22]
11	$[X, -X, -Y]$	$[0, 0, \frac{3}{4}]$	[11,-23]
12	$[-X, -X, Y]$	$[0, 0, \frac{1}{4}]$	[12,-21]
13	$[-Y, -X, -X]$	$[\frac{3}{4}, 0, 0]$	[25,-43]
14	$[Y, X, -X]$	$[\frac{1}{4}, 0, 0]$	[26,-41]
15	$[Y, -X, X]$	$[\frac{1}{4}, 0, 0]$	[27,-44]
16	$[-Y, X, X]$	$[\frac{3}{4}, 0, 0]$	[28,-42]
17	$[-X, -Y, -X]$	$[0, \frac{3}{4}, 0]$	[29,-38]
18	$[-X, Y, X]$	$[0, \frac{1}{4}, 0]$	[30,-40]
19	$[X, Y, -X]$	$[0, \frac{1}{4}, 0]$	[31,-37]
20	$[X, -Y, X]$	$[0, \frac{3}{4}, 0]$	[32,-39]
21	$[-X, -X, -Y]$	$[0, 0, \frac{3}{4}]$	[33,-48]
22	$[X, -X, Y]$	$[0, 0, \frac{1}{4}]$	[34,-46]
23	$[-X, X, Y]$	$[0, 0, \frac{1}{4}]$	[35,-47]
24	$[X, X, -Y]$	$[0, 0, \frac{3}{4}]$	[36,-45]

Table 15: Wyckoff bond: 96e@24c

No.	vector	center	mapping
1	$[X, Y, 0]$	$[\frac{1}{4}, 0, 0]$	[1,26]
2	$[-X, -Y, 0]$	$[\frac{3}{4}, 0, 0]$	[2,25]
3	$[-X, Y, 0]$	$[\frac{3}{4}, 0, 0]$	[3,28]
4	$[X, -Y, 0]$	$[\frac{1}{4}, 0, 0]$	[4,27]
5	$[0, X, Y]$	$[0, \frac{1}{4}, 0]$	[5,30]
6	$[0, -X, -Y]$	$[0, \frac{3}{4}, 0]$	[6,29]
7	$[0, -X, Y]$	$[0, \frac{3}{4}, 0]$	[7,32]
8	$[0, X, -Y]$	$[0, \frac{1}{4}, 0]$	[8,31]
9	$[Y, 0, X]$	$[0, 0, \frac{1}{4}]$	[9,34]
10	$[-Y, 0, -X]$	$[0, 0, \frac{3}{4}]$	[10,33]
11	$[Y, 0, -X]$	$[0, 0, \frac{3}{4}]$	[11,36]
12	$[-Y, 0, X]$	$[0, 0, \frac{1}{4}]$	[12,35]
13	$[Y, X, 0]$	$[0, \frac{3}{4}, 0]$	[13,38]
14	$[-Y, -X, 0]$	$[0, \frac{1}{4}, 0]$	[14,37]
15	$[Y, -X, 0]$	$[0, \frac{1}{4}, 0]$	[15,40]

*continued ...*

Table 15

No.	vector	center	mapping
16	$[-Y, X, 0]$	$[0, \frac{3}{4}, 0]$	[16,39]
17	$[X, 0, -Y]$	$[\frac{3}{4}, 0, 0]$	[17,42]
18	$[-X, 0, Y]$	$[\frac{1}{4}, 0, 0]$	[18,41]
19	$[-X, 0, -Y]$	$[\frac{1}{4}, 0, 0]$	[19,44]
20	$[X, 0, Y]$	$[\frac{3}{4}, 0, 0]$	[20,43]
21	$[0, Y, -X]$	$[0, 0, \frac{1}{4}]$	[21,46]
22	$[0, -Y, X]$	$[0, 0, \frac{3}{4}]$	[22,45]
23	$[0, Y, X]$	$[0, 0, \frac{3}{4}]$	[23,48]
24	$[0, -Y, -X]$	$[0, 0, \frac{1}{4}]$	[24,47]

Table 16: Wyckoff bond: 96f@24c

No.	vector	center	mapping
1	$[0, X, Y]$	$[\frac{1}{4}, 0, 0]$	[1,-4]
2	$[0, -X, Y]$	$[\frac{3}{4}, 0, 0]$	[2,-3]
3	$[Y, 0, X]$	$[0, \frac{1}{4}, 0]$	[5,-8]
4	$[Y, 0, -X]$	$[0, \frac{3}{4}, 0]$	[6,-7]
5	$[X, Y, 0]$	$[0, 0, \frac{1}{4}]$	[9,-12]
6	$[-X, Y, 0]$	$[0, 0, \frac{3}{4}]$	[10,-11]
7	$[X, 0, -Y]$	$[0, \frac{3}{4}, 0]$	[13,-16]
8	$[-X, 0, -Y]$	$[0, \frac{1}{4}, 0]$	[14,-15]
9	$[0, Y, -X]$	$[\frac{3}{4}, 0, 0]$	[17,-20]
10	$[0, Y, X]$	$[\frac{1}{4}, 0, 0]$	[18,-19]
11	$[Y, X, 0]$	$[0, 0, \frac{1}{4}]$	[21,-24]
12	$[Y, -X, 0]$	$[0, 0, \frac{3}{4}]$	[22,-23]
13	$[0, -X, -Y]$	$[\frac{3}{4}, 0, 0]$	[25,-28]
14	$[0, X, -Y]$	$[\frac{1}{4}, 0, 0]$	[26,-27]
15	$[-Y, 0, -X]$	$[0, \frac{3}{4}, 0]$	[29,-32]
16	$[-Y, 0, X]$	$[0, \frac{1}{4}, 0]$	[30,-31]
17	$[-X, -Y, 0]$	$[0, 0, \frac{3}{4}]$	[33,-36]
18	$[X, -Y, 0]$	$[0, 0, \frac{1}{4}]$	[34,-35]
19	$[-X, 0, Y]$	$[0, \frac{1}{4}, 0]$	[37,-40]
20	$[X, 0, Y]$	$[0, \frac{3}{4}, 0]$	[38,-39]
21	$[0, -Y, X]$	$[\frac{1}{4}, 0, 0]$	[41,-44]
22	$[0, -Y, -X]$	$[\frac{3}{4}, 0, 0]$	[42,-43]
23	$[-Y, -X, 0]$	$[0, 0, \frac{3}{4}]$	[45,-48]
24	$[-Y, X, 0]$	$[0, 0, \frac{1}{4}]$	[46,-47]

Table 17: Wyckoff bond: 192g@24c

No.	vector	center	mapping
1	$[X, Y, Z]$	$[\frac{1}{4}, 0, 0]$	[1]
2	$[-X, -Y, Z]$	$[\frac{3}{4}, 0, 0]$	[2]
3	$[-X, Y, -Z]$	$[\frac{3}{4}, 0, 0]$	[3]
4	$[X, -Y, -Z]$	$[\frac{1}{4}, 0, 0]$	[4]
5	$[Z, X, Y]$	$[0, \frac{1}{4}, 0]$	[5]
6	$[Z, -X, -Y]$	$[0, \frac{3}{4}, 0]$	[6]
7	$[-Z, -X, Y]$	$[0, \frac{3}{4}, 0]$	[7]
8	$[-Z, X, -Y]$	$[0, \frac{1}{4}, 0]$	[8]
9	$[Y, Z, X]$	$[0, 0, \frac{1}{4}]$	[9]
10	$[-Y, Z, -X]$	$[0, 0, \frac{3}{4}]$	[10]
11	$[Y, -Z, -X]$	$[0, 0, \frac{3}{4}]$	[11]
12	$[-Y, -Z, X]$	$[0, 0, \frac{1}{4}]$	[12]
13	$[Y, X, -Z]$	$[0, \frac{3}{4}, 0]$	[13]
14	$[-Y, -X, -Z]$	$[0, \frac{1}{4}, 0]$	[14]
15	$[Y, -X, Z]$	$[0, \frac{1}{4}, 0]$	[15]
16	$[-Y, X, Z]$	$[0, \frac{3}{4}, 0]$	[16]
17	$[X, Z, -Y]$	$[\frac{3}{4}, 0, 0]$	[17]
18	$[-X, Z, Y]$	$[\frac{1}{4}, 0, 0]$	[18]
19	$[-X, -Z, -Y]$	$[\frac{1}{4}, 0, 0]$	[19]
20	$[X, -Z, Y]$	$[\frac{3}{4}, 0, 0]$	[20]
21	$[Z, Y, -X]$	$[0, 0, \frac{1}{4}]$	[21]
22	$[Z, -Y, X]$	$[0, 0, \frac{3}{4}]$	[22]
23	$[-Z, Y, X]$	$[0, 0, \frac{3}{4}]$	[23]
24	$[-Z, -Y, -X]$	$[0, 0, \frac{1}{4}]$	[24]
25	$[-X, -Y, -Z]$	$[\frac{3}{4}, 0, 0]$	[25]
26	$[X, Y, -Z]$	$[\frac{1}{4}, 0, 0]$	[26]
27	$[X, -Y, Z]$	$[\frac{1}{4}, 0, 0]$	[27]
28	$[-X, Y, Z]$	$[\frac{3}{4}, 0, 0]$	[28]
29	$[-Z, -X, -Y]$	$[0, \frac{3}{4}, 0]$	[29]
30	$[-Z, X, Y]$	$[0, \frac{1}{4}, 0]$	[30]
31	$[Z, X, -Y]$	$[0, \frac{1}{4}, 0]$	[31]
32	$[Z, -X, Y]$	$[0, \frac{3}{4}, 0]$	[32]
33	$[-Y, -Z, -X]$	$[0, 0, \frac{3}{4}]$	[33]
34	$[Y, -Z, X]$	$[0, 0, \frac{1}{4}]$	[34]
35	$[-Y, Z, X]$	$[0, 0, \frac{1}{4}]$	[35]
36	$[Y, Z, -X]$	$[0, 0, \frac{3}{4}]$	[36]
37	$[-Y, -X, Z]$	$[0, \frac{1}{4}, 0]$	[37]
38	$[Y, X, Z]$	$[0, \frac{3}{4}, 0]$	[38]
39	$[-Y, X, -Z]$	$[0, \frac{3}{4}, 0]$	[39]
40	$[Y, -X, -Z]$	$[0, \frac{1}{4}, 0]$	[40]
41	$[-X, -Z, Y]$	$[\frac{1}{4}, 0, 0]$	[41]
42	$[X, -Z, -Y]$	$[\frac{3}{4}, 0, 0]$	[42]
43	$[X, Z, Y]$	$[\frac{3}{4}, 0, 0]$	[43]
44	$[-X, Z, -Y]$	$[\frac{1}{4}, 0, 0]$	[44]
45	$[-Z, -Y, X]$	$[0, 0, \frac{3}{4}]$	[45]
46	$[-Z, Y, -X]$	$[0, 0, \frac{1}{4}]$	[46]

*continued ...*

Table 17

No.	vector	center	mapping
47	$[Z, -Y, -X]$	$[0, 0, \frac{1}{4}]$	[47]
48	$[Z, Y, X]$	$[0, 0, \frac{3}{4}]$	[48]

\* Wyckoff site: 24d, site symmetry: 4/m..

Table 18: Wyckoff bond: 24a@24d

No.	vector	center	mapping
1	$[X, 0, 0]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[1, 4, 17, 20, -25, -28, -41, -44]
2	$[-X, 0, 0]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[2, 3, 18, 19, -26, -27, -42, -43]
3	$[0, X, 0]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[5, 8, 13, 16, -29, -32, -37, -40]
4	$[0, -X, 0]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[6, 7, 14, 15, -30, -31, -38, -39]
5	$[0, 0, X]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[9, 12, 22, 23, -33, -36, -46, -47]
6	$[0, 0, -X]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[10, 11, 21, 24, -34, -35, -45, -48]

Table 19: Wyckoff bond: 48b@24d

No.	vector	center	mapping
1	$[0, X, Y]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[1, -4, -25, 28]
2	$[0, -X, Y]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[2, -3, -26, 27]
3	$[Y, 0, X]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[5, -8, -29, 32]
4	$[Y, 0, -X]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[6, -7, -30, 31]
5	$[X, Y, 0]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[9, -12, -33, 36]
6	$[-X, Y, 0]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[10, -11, -34, 35]
7	$[X, 0, -Y]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[13, -16, -37, 40]
8	$[-X, 0, -Y]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[14, -15, -38, 39]
9	$[0, Y, -X]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[17, -20, -41, 44]
10	$[0, Y, X]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[18, -19, -42, 43]
11	$[Y, X, 0]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[21, -24, -45, 48]
12	$[Y, -X, 0]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[22, -23, -46, 47]

Table 20: Wyckoff bond: 96c@24d

No.	vector	center	mapping
1	$[X, Y, Z]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[1, -25]
2	$[-X, -Y, Z]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[2, -26]
3	$[-X, Y, -Z]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[3, -27]
4	$[X, -Y, -Z]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[4, -28]
5	$[Z, X, Y]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[5, -29]
6	$[Z, -X, -Y]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[6, -30]

*continued ...*

Table 20

No.	vector	center	mapping
7	$[-Z, -X, Y]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[7,-31]
8	$[-Z, X, -Y]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[8,-32]
9	$[Y, Z, X]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[9,-33]
10	$[-Y, Z, -X]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[10,-34]
11	$[Y, -Z, -X]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[11,-35]
12	$[-Y, -Z, X]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[12,-36]
13	$[Y, X, -Z]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[13,-37]
14	$[-Y, -X, -Z]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[14,-38]
15	$[Y, -X, Z]$	$[\frac{1}{4}, 0, \frac{3}{4}]$	[15,-39]
16	$[-Y, X, Z]$	$[\frac{1}{4}, 0, \frac{1}{4}]$	[16,-40]
17	$[X, Z, -Y]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[17,-41]
18	$[-X, Z, Y]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[18,-42]
19	$[-X, -Z, -Y]$	$[0, \frac{3}{4}, \frac{1}{4}]$	[19,-43]
20	$[X, -Z, Y]$	$[0, \frac{1}{4}, \frac{1}{4}]$	[20,-44]
21	$[Z, Y, -X]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[21,-45]
22	$[Z, -Y, X]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[22,-46]
23	$[-Z, Y, X]$	$[\frac{1}{4}, \frac{1}{4}, 0]$	[23,-47]
24	$[-Z, -Y, -X]$	$[\frac{3}{4}, \frac{1}{4}, 0]$	[24,-48]

\* Wyckoff site: 48e, site symmetry: mm2..

Table 21: Wyckoff bond: 48a@48e

No.	vector	center	mapping
1	$[X, 0, 0]$	$[x, 0, 0]$	[1,4,26,27]
2	$[-X, 0, 0]$	$[-x, 0, 0]$	[2,3,25,28]
3	$[0, X, 0]$	$[0, x, 0]$	[5,8,30,31]
4	$[0, -X, 0]$	$[0, -x, 0]$	[6,7,29,32]
5	$[0, 0, X]$	$[0, 0, x]$	[9,12,34,35]
6	$[0, 0, -X]$	$[0, 0, -x]$	[10,11,33,36]
7	$[0, X, 0]$	$[\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}]$	[13,16,38,39]
8	$[0, -X, 0]$	$[\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}]$	[14,15,37,40]
9	$[X, 0, 0]$	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[17,20,42,43]
10	$[-X, 0, 0]$	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}]$	[18,19,41,44]
11	$[0, 0, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x]$	[21,24,46,47]
12	$[0, 0, X]$	$[\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}]$	[22,23,45,48]

Table 22: Wyckoff bond: 48b@48e

No.	vector	center	mapping
1	$[0, 0, X]$	$[x, 0, 0]$	[1,-4,-26,27]
2	$[0, 0, X]$	$[-x, 0, 0]$	[2,-3,-25,28]

*continued ...*

Table 22

No.	vector	center	mapping
3	[ $X, 0, 0$ ]	[ $0, x, 0$ ]	[5, -8, -30, 31]
4	[ $X, 0, 0$ ]	[ $0, -x, 0$ ]	[6, -7, -29, 32]
5	[ $0, X, 0$ ]	[ $0, 0, x$ ]	[9, -12, -34, 35]
6	[ $0, X, 0$ ]	[ $0, 0, -x$ ]	[10, -11, -33, 36]
7	[ $0, 0, -X$ ]	[ $\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}$ ]	[13, -16, -38, 39]
8	[ $0, 0, -X$ ]	[ $\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}$ ]	[14, -15, -37, 40]
9	[ $0, X, 0$ ]	[ $x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$ ]	[17, -20, -42, 43]
10	[ $0, X, 0$ ]	[ $\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}$ ]	[18, -19, -41, 44]
11	[ $X, 0, 0$ ]	[ $\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x$ ]	[21, -24, -46, 47]
12	[ $X, 0, 0$ ]	[ $\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}$ ]	[22, -23, -45, 48]

Table 23: Wyckoff bond: 96c@48e

No.	vector	center	mapping
1	[ $X, Y, 0$ ]	[ $x, 0, 0$ ]	[1, 26]
2	[ $-X, -Y, 0$ ]	[ $-x, 0, 0$ ]	[2, 25]
3	[ $-X, Y, 0$ ]	[ $-x, 0, 0$ ]	[3, 28]
4	[ $X, -Y, 0$ ]	[ $x, 0, 0$ ]	[4, 27]
5	[ $0, X, Y$ ]	[ $0, x, 0$ ]	[5, 30]
6	[ $0, -X, -Y$ ]	[ $0, -x, 0$ ]	[6, 29]
7	[ $0, -X, Y$ ]	[ $0, -x, 0$ ]	[7, 32]
8	[ $0, X, -Y$ ]	[ $0, x, 0$ ]	[8, 31]
9	[ $Y, 0, X$ ]	[ $0, 0, x$ ]	[9, 34]
10	[ $-Y, 0, -X$ ]	[ $0, 0, -x$ ]	[10, 33]
11	[ $Y, 0, -X$ ]	[ $0, 0, -x$ ]	[11, 36]
12	[ $-Y, 0, X$ ]	[ $0, 0, x$ ]	[12, 35]
13	[ $Y, X, 0$ ]	[ $\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}$ ]	[13, 38]
14	[ $-Y, -X, 0$ ]	[ $\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}$ ]	[14, 37]
15	[ $Y, -X, 0$ ]	[ $\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}$ ]	[15, 40]
16	[ $-Y, X, 0$ ]	[ $\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}$ ]	[16, 39]
17	[ $X, 0, -Y$ ]	[ $x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$ ]	[17, 42]
18	[ $-X, 0, Y$ ]	[ $\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}$ ]	[18, 41]
19	[ $-X, 0, -Y$ ]	[ $\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}$ ]	[19, 44]
20	[ $X, 0, Y$ ]	[ $x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}$ ]	[20, 43]
21	[ $0, Y, -X$ ]	[ $\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x$ ]	[21, 46]
22	[ $0, -Y, X$ ]	[ $\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}$ ]	[22, 45]
23	[ $0, Y, X$ ]	[ $\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}$ ]	[23, 48]
24	[ $0, -Y, -X$ ]	[ $\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x$ ]	[24, 47]

Table 24: Wyckoff bond: 96d@48e

No.	vector	center	mapping
1	[0, $X$ , $Y$ ]	[ $x$ , 0, 0]	[1, -4]
2	[0, $-X$ , $Y$ ]	[ $-x$ , 0, 0]	[2, -3]
3	[ $Y$ , 0, $X$ ]	[0, $x$ , 0]	[5, -8]
4	[ $Y$ , 0, $-X$ ]	[0, $-x$ , 0]	[6, -7]
5	[ $X$ , $Y$ , 0]	[0, 0, $x$ ]	[9, -12]
6	[ $-X$ , $Y$ , 0]	[0, 0, $-x$ ]	[10, -11]
7	[ $X$ , 0, $-Y$ ]	[ $\frac{1}{2}$ , $x + \frac{1}{2}$ , $\frac{1}{2}$ ]	[13, -16]
8	[ $-X$ , 0, $-Y$ ]	[ $\frac{1}{2}$ , $\frac{1}{2} - x$ , $\frac{1}{2}$ ]	[14, -15]
9	[0, $Y$ , $-X$ ]	[ $x + \frac{1}{2}$ , $\frac{1}{2}$ , $\frac{1}{2}$ ]	[17, -20]
10	[0, $Y$ , $X$ ]	[ $\frac{1}{2} - x$ , $\frac{1}{2}$ , $\frac{1}{2}$ ]	[18, -19]
11	[ $Y$ , $X$ , 0]	[ $\frac{1}{2}$ , $\frac{1}{2}$ , $\frac{1}{2} - x$ ]	[21, -24]
12	[ $Y$ , $-X$ , 0]	[ $\frac{1}{2}$ , $\frac{1}{2}$ , $x + \frac{1}{2}$ ]	[22, -23]
13	[0, $-X$ , $-Y$ ]	[ $-x$ , 0, 0]	[25, -28]
14	[0, $X$ , $-Y$ ]	[ $x$ , 0, 0]	[26, -27]
15	[ $-Y$ , 0, $-X$ ]	[0, $-x$ , 0]	[29, -32]
16	[ $-Y$ , 0, $X$ ]	[0, $x$ , 0]	[30, -31]
17	[ $-X$ , $-Y$ , 0]	[0, 0, $-x$ ]	[33, -36]
18	[ $X$ , $-Y$ , 0]	[0, 0, $x$ ]	[34, -35]
19	[ $-X$ , 0, $Y$ ]	[ $\frac{1}{2}$ , $\frac{1}{2} - x$ , $\frac{1}{2}$ ]	[37, -40]
20	[ $X$ , 0, $Y$ ]	[ $\frac{1}{2}$ , $x + \frac{1}{2}$ , $\frac{1}{2}$ ]	[38, -39]
21	[0, $-Y$ , $X$ ]	[ $\frac{1}{2} - x$ , $\frac{1}{2}$ , $\frac{1}{2}$ ]	[41, -44]
22	[0, $-Y$ , $-X$ ]	[ $x + \frac{1}{2}$ , $\frac{1}{2}$ , $\frac{1}{2}$ ]	[42, -43]
23	[ $-Y$ , $-X$ , 0]	[ $\frac{1}{2}$ , $\frac{1}{2}$ , $x + \frac{1}{2}$ ]	[45, -48]
24	[ $-Y$ , $X$ , 0]	[ $\frac{1}{2}$ , $\frac{1}{2}$ , $\frac{1}{2} - x$ ]	[46, -47]

Table 25: Wyckoff bond: 192e@48e

No.	vector	center	mapping
1	[ $X$ , $Y$ , $Z$ ]	[ $x$ , 0, 0]	[1]
2	[ $-X$ , $-Y$ , $Z$ ]	[ $-x$ , 0, 0]	[2]
3	[ $-X$ , $Y$ , $-Z$ ]	[ $-x$ , 0, 0]	[3]
4	[ $X$ , $-Y$ , $-Z$ ]	[ $x$ , 0, 0]	[4]
5	[ $Z$ , $X$ , $Y$ ]	[0, $x$ , 0]	[5]
6	[ $Z$ , $-X$ , $-Y$ ]	[0, $-x$ , 0]	[6]
7	[ $-Z$ , $-X$ , $Y$ ]	[0, $-x$ , 0]	[7]
8	[ $-Z$ , $X$ , $-Y$ ]	[0, $x$ , 0]	[8]
9	[ $Y$ , $Z$ , $X$ ]	[0, 0, $x$ ]	[9]
10	[ $-Y$ , $Z$ , $-X$ ]	[0, 0, $-x$ ]	[10]
11	[ $Y$ , $-Z$ , $-X$ ]	[0, 0, $-x$ ]	[11]
12	[ $-Y$ , $-Z$ , $X$ ]	[0, 0, $x$ ]	[12]
13	[ $Y$ , $X$ , $-Z$ ]	[ $\frac{1}{2}$ , $x + \frac{1}{2}$ , $\frac{1}{2}$ ]	[13]
14	[ $-Y$ , $-X$ , $-Z$ ]	[ $\frac{1}{2}$ , $\frac{1}{2} - x$ , $\frac{1}{2}$ ]	[14]
15	[ $Y$ , $-X$ , $Z$ ]	[ $\frac{1}{2}$ , $\frac{1}{2} - x$ , $\frac{1}{2}$ ]	[15]

*continued ...*

Table 25

No.	vector	center	mapping
16	$[-Y, X, Z]$	$[\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}]$	[16]
17	$[X, Z, -Y]$	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[17]
18	$[-X, Z, Y]$	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}]$	[18]
19	$[-X, -Z, -Y]$	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}]$	[19]
20	$[X, -Z, Y]$	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[20]
21	$[Z, Y, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x]$	[21]
22	$[Z, -Y, X]$	$[\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}]$	[22]
23	$[-Z, Y, X]$	$[\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}]$	[23]
24	$[-Z, -Y, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x]$	[24]
25	$[-X, -Y, -Z]$	$[-x, 0, 0]$	[25]
26	$[X, Y, -Z]$	$[x, 0, 0]$	[26]
27	$[X, -Y, Z]$	$[x, 0, 0]$	[27]
28	$[-X, Y, Z]$	$[-x, 0, 0]$	[28]
29	$[-Z, -X, -Y]$	$[0, -x, 0]$	[29]
30	$[-Z, X, Y]$	$[0, x, 0]$	[30]
31	$[Z, X, -Y]$	$[0, x, 0]$	[31]
32	$[Z, -X, Y]$	$[0, -x, 0]$	[32]
33	$[-Y, -Z, -X]$	$[0, 0, -x]$	[33]
34	$[Y, -Z, X]$	$[0, 0, x]$	[34]
35	$[-Y, Z, X]$	$[0, 0, x]$	[35]
36	$[Y, Z, -X]$	$[0, 0, -x]$	[36]
37	$[-Y, -X, Z]$	$[\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}]$	[37]
38	$[Y, X, Z]$	$[\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}]$	[38]
39	$[-Y, X, -Z]$	$[\frac{1}{2}, x + \frac{1}{2}, \frac{1}{2}]$	[39]
40	$[Y, -X, -Z]$	$[\frac{1}{2}, \frac{1}{2} - x, \frac{1}{2}]$	[40]
41	$[-X, -Z, Y]$	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}]$	[41]
42	$[X, -Z, -Y]$	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[42]
43	$[X, Z, Y]$	$[x + \frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[43]
44	$[-X, Z, -Y]$	$[\frac{1}{2} - x, \frac{1}{2}, \frac{1}{2}]$	[44]
45	$[-Z, -Y, X]$	$[\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}]$	[45]
46	$[-Z, Y, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x]$	[46]
47	$[Z, -Y, -X]$	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - x]$	[47]
48	$[Z, Y, X]$	$[\frac{1}{2}, \frac{1}{2}, x + \frac{1}{2}]$	[48]

\* Wyckoff site: 48f, site symmetry: 4..

Table 26: Wyckoff bond: 48a@48f

No.	vector	center	mapping
1	$[X, 0, 0]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[1,4,17,20]
2	$[-X, 0, 0]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[2,3,18,19]
3	$[0, X, 0]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[5,8,13,16]
4	$[0, -X, 0]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[6,7,14,15]
5	$[0, 0, X]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[9,12,22,23]
6	$[0, 0, -X]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[10,11,21,24]

continued ...

Table 26

No.	vector	center	mapping
7	$[-X, 0, 0]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[25,28,41,44]
8	$[X, 0, 0]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[26,27,42,43]
9	$[0, -X, 0]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[29,32,37,40]
10	$[0, X, 0]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[30,31,38,39]
11	$[0, 0, -X]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[33,36,46,47]
12	$[0, 0, X]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[34,35,45,48]

Table 27: Wyckoff bond: 96b@48f

No.	vector	center	mapping
1	$[0, X, Y]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[1,-4]
2	$[0, -X, Y]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[2,-3]
3	$[Y, 0, X]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[5,-8]
4	$[Y, 0, -X]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[6,-7]
5	$[X, Y, 0]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[9,-12]
6	$[-X, Y, 0]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[10,-11]
7	$[X, 0, -Y]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[13,-16]
8	$[-X, 0, -Y]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[14,-15]
9	$[0, Y, -X]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[17,-20]
10	$[0, Y, X]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[18,-19]
11	$[Y, X, 0]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[21,-24]
12	$[Y, -X, 0]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[22,-23]
13	$[0, -X, -Y]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[25,-28]
14	$[0, X, -Y]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[26,-27]
15	$[-Y, 0, -X]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[29,-32]
16	$[-Y, 0, X]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[30,-31]
17	$[-X, -Y, 0]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[33,-36]
18	$[X, -Y, 0]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[34,-35]
19	$[-X, 0, Y]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[37,-40]
20	$[X, 0, Y]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[38,-39]
21	$[0, -Y, X]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[41,-44]
22	$[0, -Y, -X]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[42,-43]
23	$[-Y, -X, 0]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[45,-48]
24	$[-Y, X, 0]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[46,-47]

Table 28: Wyckoff bond: 192c@48f

No.	vector	center	mapping
1	$[X, Y, Z]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[1]
2	$[-X, -Y, Z]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[2]
3	$[-X, Y, -Z]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[3]
4	$[X, -Y, -Z]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[4]

continued ...

Table 28

No.	vector	center	mapping
5	$[Z, X, Y]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[5]
6	$[Z, -X, -Y]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[6]
7	$[-Z, -X, Y]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[7]
8	$[-Z, X, -Y]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[8]
9	$[Y, Z, X]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[9]
10	$[-Y, Z, -X]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[10]
11	$[Y, -Z, -X]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[11]
12	$[-Y, -Z, X]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[12]
13	$[Y, X, -Z]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[13]
14	$[-Y, -X, -Z]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[14]
15	$[Y, -X, Z]$	$[\frac{1}{4}, -x, \frac{3}{4}]$	[15]
16	$[-Y, X, Z]$	$[\frac{1}{4}, x, \frac{1}{4}]$	[16]
17	$[X, Z, -Y]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[17]
18	$[-X, Z, Y]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[18]
19	$[-X, -Z, -Y]$	$[-x, \frac{3}{4}, \frac{1}{4}]$	[19]
20	$[X, -Z, Y]$	$[x, \frac{1}{4}, \frac{1}{4}]$	[20]
21	$[Z, Y, -X]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[21]
22	$[Z, -Y, X]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[22]
23	$[-Z, Y, X]$	$[\frac{1}{4}, \frac{1}{4}, x]$	[23]
24	$[-Z, -Y, -X]$	$[\frac{3}{4}, \frac{1}{4}, -x]$	[24]
25	$[-X, -Y, -Z]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[25]
26	$[X, Y, -Z]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[26]
27	$[X, -Y, Z]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[27]
28	$[-X, Y, Z]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[28]
29	$[-Z, -X, -Y]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[29]
30	$[-Z, X, Y]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[30]
31	$[Z, X, -Y]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[31]
32	$[Z, -X, Y]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[32]
33	$[-Y, -Z, -X]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[33]
34	$[Y, -Z, X]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[34]
35	$[-Y, Z, X]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[35]
36	$[Y, Z, -X]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[36]
37	$[-Y, -X, Z]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[37]
38	$[Y, X, Z]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[38]
39	$[-Y, X, -Z]$	$[\frac{3}{4}, x, \frac{1}{4}]$	[39]
40	$[Y, -X, -Z]$	$[\frac{3}{4}, -x, \frac{3}{4}]$	[40]
41	$[-X, -Z, Y]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[41]
42	$[X, -Z, -Y]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[42]
43	$[X, Z, Y]$	$[x, \frac{1}{4}, \frac{3}{4}]$	[43]
44	$[-X, Z, -Y]$	$[-x, \frac{3}{4}, \frac{3}{4}]$	[44]
45	$[-Z, -Y, X]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[45]
46	$[-Z, Y, -X]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[46]
47	$[Z, -Y, -X]$	$[\frac{3}{4}, \frac{3}{4}, -x]$	[47]
48	$[Z, Y, X]$	$[\frac{1}{4}, \frac{3}{4}, x]$	[48]

\* Wyckoff site: 64g, site symmetry: .3.

Table 29: Wyckoff bond: 64a@64g

No.	vector	center	mapping
1	[X, X, X]	[x, x, x]	[1,5,9]
2	[-X, -X, X]	[-x, -x, x]	[2,7,12]
3	[-X, X, -X]	[-x, x, -x]	[3,8,10]
4	[X, -X, -X]	[x, -x, -x]	[4,6,11]
5	[X, X, -X]	[x + $\frac{1}{2}$ , x + $\frac{1}{2}$ , $\frac{1}{2}$ - x]	[13,17,21]
6	[-X, -X, -X]	[ $\frac{1}{2}$ - x, $\frac{1}{2}$ - x, $\frac{1}{2}$ - x]	[14,19,24]
7	[X, -X, X]	[x + $\frac{1}{2}$ , $\frac{1}{2}$ - x, x + $\frac{1}{2}$ ]	[15,20,22]
8	[-X, X, X]	[ $\frac{1}{2}$ - x, x + $\frac{1}{2}$ , x + $\frac{1}{2}$ ]	[16,18,23]
9	[-X, -X, -X]	[-x, -x, -x]	[25,29,33]
10	[X, X, -X]	[x, x, -x]	[26,31,36]
11	[X, -X, X]	[x, -x, x]	[27,32,34]
12	[-X, X, X]	[-x, x, x]	[28,30,35]
13	[-X, -X, X]	[ $\frac{1}{2}$ - x, $\frac{1}{2}$ - x, x + $\frac{1}{2}$ ]	[37,41,45]
14	[X, X, X]	[x + $\frac{1}{2}$ , x + $\frac{1}{2}$ , x + $\frac{1}{2}$ ]	[38,43,48]
15	[-X, X, -X]	[ $\frac{1}{2}$ - x, x + $\frac{1}{2}$ , $\frac{1}{2}$ - x]	[39,44,46]
16	[X, -X, -X]	[x + $\frac{1}{2}$ , $\frac{1}{2}$ - x, $\frac{1}{2}$ - x]	[40,42,47]

Table 30: Wyckoff bond: 192b@64g

No.	vector	center	mapping
1	[X, Y, Z]	[x, x, x]	[1]
2	[-X, -Y, Z]	[-x, -x, x]	[2]
3	[-X, Y, -Z]	[-x, x, -x]	[3]
4	[X, -Y, -Z]	[x, -x, -x]	[4]
5	[Z, X, Y]	[x, x, x]	[5]
6	[Z, -X, -Y]	[x, -x, -x]	[6]
7	[-Z, -X, Y]	[-x, -x, x]	[7]
8	[-Z, X, -Y]	[-x, x, -x]	[8]
9	[Y, Z, X]	[x, x, x]	[9]
10	[-Y, Z, -X]	[-x, x, -x]	[10]
11	[Y, -Z, -X]	[x, -x, -x]	[11]
12	[-Y, -Z, X]	[-x, -x, x]	[12]
13	[Y, X, -Z]	[x + $\frac{1}{2}$ , x + $\frac{1}{2}$ , $\frac{1}{2}$ - x]	[13]
14	[-Y, -X, -Z]	[ $\frac{1}{2}$ - x, $\frac{1}{2}$ - x, $\frac{1}{2}$ - x]	[14]
15	[Y, -X, Z]	[x + $\frac{1}{2}$ , $\frac{1}{2}$ - x, x + $\frac{1}{2}$ ]	[15]
16	[-Y, X, Z]	[ $\frac{1}{2}$ - x, x + $\frac{1}{2}$ , x + $\frac{1}{2}$ ]	[16]
17	[X, Z, -Y]	[x + $\frac{1}{2}$ , x + $\frac{1}{2}$ , $\frac{1}{2}$ - x]	[17]
18	[-X, Z, Y]	[ $\frac{1}{2}$ - x, x + $\frac{1}{2}$ , x + $\frac{1}{2}$ ]	[18]
19	[-X, -Z, -Y]	[ $\frac{1}{2}$ - x, $\frac{1}{2}$ - x, $\frac{1}{2}$ - x]	[19]
20	[X, -Z, Y]	[x + $\frac{1}{2}$ , $\frac{1}{2}$ - x, x + $\frac{1}{2}$ ]	[20]
21	[Z, Y, -X]	[x + $\frac{1}{2}$ , x + $\frac{1}{2}$ , $\frac{1}{2}$ - x]	[21]
22	[Z, -Y, X]	[x + $\frac{1}{2}$ , $\frac{1}{2}$ - x, x + $\frac{1}{2}$ ]	[22]
23	[-Z, Y, X]	[ $\frac{1}{2}$ - x, x + $\frac{1}{2}$ , x + $\frac{1}{2}$ ]	[23]

continued ...

Table 30

No.	vector	center	mapping
24	$[-Z, -Y, -X]$	$[\frac{1}{2} - x, \frac{1}{2} - x, \frac{1}{2} - x]$	[24]
25	$[-X, -Y, -Z]$	$[-x, -x, -x]$	[25]
26	$[X, Y, -Z]$	$[x, x, -x]$	[26]
27	$[X, -Y, Z]$	$[x, -x, x]$	[27]
28	$[-X, Y, Z]$	$[-x, x, x]$	[28]
29	$[-Z, -X, -Y]$	$[-x, -x, -x]$	[29]
30	$[-Z, X, Y]$	$[-x, x, x]$	[30]
31	$[Z, X, -Y]$	$[x, x, -x]$	[31]
32	$[Z, -X, Y]$	$[x, -x, x]$	[32]
33	$[-Y, -Z, -X]$	$[-x, -x, -x]$	[33]
34	$[Y, -Z, X]$	$[x, -x, x]$	[34]
35	$[-Y, Z, X]$	$[-x, x, x]$	[35]
36	$[Y, Z, -X]$	$[x, x, -x]$	[36]
37	$[-Y, -X, Z]$	$[\frac{1}{2} - x, \frac{1}{2} - x, x + \frac{1}{2}]$	[37]
38	$[Y, X, Z]$	$[x + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$	[38]
39	$[-Y, X, -Z]$	$[\frac{1}{2} - x, x + \frac{1}{2}, \frac{1}{2} - x]$	[39]
40	$[Y, -X, -Z]$	$[x + \frac{1}{2}, \frac{1}{2} - x, \frac{1}{2} - x]$	[40]
41	$[-X, -Z, Y]$	$[\frac{1}{2} - x, \frac{1}{2} - x, x + \frac{1}{2}]$	[41]
42	$[X, -Z, -Y]$	$[x + \frac{1}{2}, \frac{1}{2} - x, \frac{1}{2} - x]$	[42]
43	$[X, Z, Y]$	$[x + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$	[43]
44	$[-X, Z, -Y]$	$[\frac{1}{2} - x, x + \frac{1}{2}, \frac{1}{2} - x]$	[44]
45	$[-Z, -Y, X]$	$[\frac{1}{2} - x, \frac{1}{2} - x, x + \frac{1}{2}]$	[45]
46	$[-Z, Y, -X]$	$[\frac{1}{2} - x, x + \frac{1}{2}, \frac{1}{2} - x]$	[46]
47	$[Z, -Y, -X]$	$[x + \frac{1}{2}, \frac{1}{2} - x, \frac{1}{2} - x]$	[47]
48	$[Z, Y, X]$	$[x + \frac{1}{2}, x + \frac{1}{2}, x + \frac{1}{2}]$	[48]

\* Wyckoff site: 96h, site symmetry: . . 2

Table 31: Wyckoff bond: 96a@96h

No.	vector	center	mapping
1	$[Y, X, -X]$	$[\frac{1}{4}, y, y]$	[1, -18]
2	$[-Y, -X, -X]$	$[\frac{3}{4}, -y, y]$	[2, -20]
3	$[-Y, X, X]$	$[\frac{3}{4}, y, -y]$	[3, -17]
4	$[Y, -X, X]$	$[\frac{1}{4}, -y, -y]$	[4, -19]
5	$[-X, Y, X]$	$[y, \frac{1}{4}, y]$	[5, -15]
6	$[-X, -Y, -X]$	$[y, \frac{3}{4}, -y]$	[6, -13]
7	$[X, -Y, X]$	$[-y, \frac{3}{4}, y]$	[7, -16]
8	$[X, Y, -X]$	$[-y, \frac{1}{4}, -y]$	[8, -14]
9	$[X, -X, Y]$	$[y, y, \frac{1}{4}]$	[9, -21]
10	$[-X, -X, -Y]$	$[-y, y, \frac{3}{4}]$	[10, -23]
11	$[X, X, -Y]$	$[y, -y, \frac{3}{4}]$	[11, -22]
12	$[-X, X, Y]$	$[-y, -y, \frac{1}{4}]$	[12, -24]
13	$[-Y, -X, X]$	$[\frac{3}{4}, -y, -y]$	[25, -42]
14	$[Y, X, X]$	$[\frac{1}{4}, y, -y]$	[26, -44]

*continued ...*

Table 31

No.	vector	center	mapping
15	$[Y, -X, -X]$	$[\frac{1}{4}, -y, y]$	[27, -41]
16	$[-Y, X, -X]$	$[\frac{3}{4}, y, y]$	[28, -43]
17	$[X, -Y, -X]$	$[-y, \frac{3}{4}, -y]$	[29, -39]
18	$[X, Y, X]$	$[-y, \frac{1}{4}, y]$	[30, -37]
19	$[-X, Y, -X]$	$[y, \frac{1}{4}, -y]$	[31, -40]
20	$[-X, -Y, X]$	$[y, \frac{3}{4}, y]$	[32, -38]
21	$[-X, X, -Y]$	$[-y, -y, \frac{3}{4}]$	[33, -45]
22	$[X, X, Y]$	$[y, -y, \frac{1}{4}]$	[34, -47]
23	$[-X, -X, Y]$	$[-y, y, \frac{1}{4}]$	[35, -46]
24	$[X, -X, -Y]$	$[y, y, \frac{3}{4}]$	[36, -48]

Table 32: Wyckoff bond: 96b@96h

No.	vector	center	mapping
1	$[0, X, X]$	$[\frac{1}{4}, y, y]$	[1, 18]
2	$[0, -X, X]$	$[\frac{3}{4}, -y, y]$	[2, 20]
3	$[0, X, -X]$	$[\frac{3}{4}, y, -y]$	[3, 17]
4	$[0, -X, -X]$	$[\frac{1}{4}, -y, -y]$	[4, 19]
5	$[X, 0, X]$	$[y, \frac{1}{4}, y]$	[5, 15]
6	$[X, 0, -X]$	$[y, \frac{3}{4}, -y]$	[6, 13]
7	$[-X, 0, X]$	$[-y, \frac{3}{4}, y]$	[7, 16]
8	$[-X, 0, -X]$	$[-y, \frac{1}{4}, -y]$	[8, 14]
9	$[X, X, 0]$	$[y, y, \frac{1}{4}]$	[9, 21]
10	$[-X, X, 0]$	$[-y, y, \frac{3}{4}]$	[10, 23]
11	$[X, -X, 0]$	$[y, -y, \frac{3}{4}]$	[11, 22]
12	$[-X, -X, 0]$	$[-y, -y, \frac{1}{4}]$	[12, 24]
13	$[0, -X, -X]$	$[\frac{3}{4}, -y, -y]$	[25, 42]
14	$[0, X, -X]$	$[\frac{1}{4}, y, -y]$	[26, 44]
15	$[0, -X, X]$	$[\frac{1}{4}, -y, y]$	[27, 41]
16	$[0, X, X]$	$[\frac{3}{4}, y, y]$	[28, 43]
17	$[-X, 0, -X]$	$[-y, \frac{3}{4}, -y]$	[29, 39]
18	$[-X, 0, X]$	$[-y, \frac{1}{4}, y]$	[30, 37]
19	$[X, 0, -X]$	$[y, \frac{1}{4}, -y]$	[31, 40]
20	$[X, 0, X]$	$[y, \frac{3}{4}, y]$	[32, 38]
21	$[-X, -X, 0]$	$[-y, -y, \frac{3}{4}]$	[33, 45]
22	$[X, -X, 0]$	$[y, -y, \frac{1}{4}]$	[34, 47]
23	$[-X, X, 0]$	$[-y, y, \frac{1}{4}]$	[35, 46]
24	$[X, X, 0]$	$[y, y, \frac{3}{4}]$	[36, 48]

Table 33: Wyckoff bond: 192c@96h

No.	vector	center	mapping
1	$[X, Y, Z]$	$[\frac{1}{4}, y, y]$	[1]
2	$[-X, -Y, Z]$	$[\frac{3}{4}, -y, y]$	[2]
3	$[-X, Y, -Z]$	$[\frac{3}{4}, y, -y]$	[3]
4	$[X, -Y, -Z]$	$[\frac{1}{4}, -y, -y]$	[4]
5	$[Z, X, Y]$	$[y, \frac{1}{4}, y]$	[5]
6	$[Z, -X, -Y]$	$[y, \frac{3}{4}, -y]$	[6]
7	$[-Z, -X, Y]$	$[-y, \frac{3}{4}, y]$	[7]
8	$[-Z, X, -Y]$	$[-y, \frac{1}{4}, -y]$	[8]
9	$[Y, Z, X]$	$[y, y, \frac{1}{4}]$	[9]
10	$[-Y, Z, -X]$	$[-y, y, \frac{3}{4}]$	[10]
11	$[Y, -Z, -X]$	$[y, -y, \frac{3}{4}]$	[11]
12	$[-Y, -Z, X]$	$[-y, -y, \frac{1}{4}]$	[12]
13	$[Y, X, -Z]$	$[y, \frac{3}{4}, -y]$	[13]
14	$[-Y, -X, -Z]$	$[-y, \frac{1}{4}, -y]$	[14]
15	$[Y, -X, Z]$	$[y, \frac{1}{4}, y]$	[15]
16	$[-Y, X, Z]$	$[-y, \frac{3}{4}, y]$	[16]
17	$[X, Z, -Y]$	$[\frac{3}{4}, y, -y]$	[17]
18	$[-X, Z, Y]$	$[\frac{1}{4}, y, y]$	[18]
19	$[-X, -Z, -Y]$	$[\frac{1}{4}, -y, -y]$	[19]
20	$[X, -Z, Y]$	$[\frac{3}{4}, -y, y]$	[20]
21	$[Z, Y, -X]$	$[y, y, \frac{1}{4}]$	[21]
22	$[Z, -Y, X]$	$[y, -y, \frac{3}{4}]$	[22]
23	$[-Z, Y, X]$	$[-y, y, \frac{3}{4}]$	[23]
24	$[-Z, -Y, -X]$	$[-y, -y, \frac{1}{4}]$	[24]
25	$[-X, -Y, -Z]$	$[\frac{3}{4}, -y, -y]$	[25]
26	$[X, Y, -Z]$	$[\frac{1}{4}, y, -y]$	[26]
27	$[X, -Y, Z]$	$[\frac{1}{4}, -y, y]$	[27]
28	$[-X, Y, Z]$	$[\frac{3}{4}, y, y]$	[28]
29	$[-Z, -X, -Y]$	$[-y, \frac{3}{4}, -y]$	[29]
30	$[-Z, X, Y]$	$[-y, \frac{1}{4}, y]$	[30]
31	$[Z, X, -Y]$	$[y, \frac{1}{4}, -y]$	[31]
32	$[Z, -X, Y]$	$[y, \frac{3}{4}, y]$	[32]
33	$[-Y, -Z, -X]$	$[-y, -y, \frac{3}{4}]$	[33]
34	$[Y, -Z, X]$	$[y, -y, \frac{1}{4}]$	[34]
35	$[-Y, Z, X]$	$[-y, y, \frac{1}{4}]$	[35]
36	$[Y, Z, -X]$	$[y, y, \frac{3}{4}]$	[36]
37	$[-Y, -X, Z]$	$[-y, \frac{1}{4}, y]$	[37]
38	$[Y, X, Z]$	$[y, \frac{3}{4}, y]$	[38]
39	$[-Y, X, -Z]$	$[-y, \frac{3}{4}, -y]$	[39]
40	$[Y, -X, -Z]$	$[y, \frac{1}{4}, -y]$	[40]
41	$[-X, -Z, Y]$	$[\frac{1}{4}, -y, y]$	[41]
42	$[X, -Z, -Y]$	$[\frac{3}{4}, -y, -y]$	[42]
43	$[X, Z, Y]$	$[\frac{3}{4}, y, y]$	[43]
44	$[-X, Z, -Y]$	$[\frac{1}{4}, y, -y]$	[44]
45	$[-Z, -Y, X]$	$[-y, -y, \frac{3}{4}]$	[45]
46	$[-Z, Y, -X]$	$[-y, y, \frac{1}{4}]$	[46]

*continued ...*

Table 33

No.	vector	center	mapping
47	$[Z, -Y, -X]$	$[y, -y, \frac{1}{4}]$	[47]
48	$[Z, Y, X]$	$[y, y, \frac{3}{4}]$	[48]

\* Wyckoff site: 96i, site symmetry: m..

Table 34: Wyckoff bond: 96a@96i

No.	vector	center	mapping
1	$[0, X, Y]$	$[0, y, z]$	[1,28]
2	$[0, -X, Y]$	$[0, -y, z]$	[2,27]
3	$[0, X, -Y]$	$[0, y, -z]$	[3,26]
4	$[0, -X, -Y]$	$[0, -y, -z]$	[4,25]
5	$[Y, 0, X]$	$[z, 0, y]$	[5,32]
6	$[Y, 0, -X]$	$[z, 0, -y]$	[6,31]
7	$[-Y, 0, X]$	$[-z, 0, y]$	[7,30]
8	$[-Y, 0, -X]$	$[-z, 0, -y]$	[8,29]
9	$[X, Y, 0]$	$[y, z, 0]$	[9,36]
10	$[-X, Y, 0]$	$[-y, z, 0]$	[10,35]
11	$[X, -Y, 0]$	$[y, -z, 0]$	[11,34]
12	$[-X, -Y, 0]$	$[-y, -z, 0]$	[12,33]
13	$[X, 0, -Y]$	$[y + \frac{1}{2}, \frac{1}{2}, \frac{1}{2} - z]$	[13,40]
14	$[-X, 0, -Y]$	$[\frac{1}{2} - y, \frac{1}{2}, \frac{1}{2} - z]$	[14,39]
15	$[X, 0, Y]$	$[y + \frac{1}{2}, \frac{1}{2}, z + \frac{1}{2}]$	[15,38]
16	$[-X, 0, Y]$	$[\frac{1}{2} - y, \frac{1}{2}, z + \frac{1}{2}]$	[16,37]
17	$[0, Y, -X]$	$[\frac{1}{2}, z + \frac{1}{2}, \frac{1}{2} - y]$	[17,44]
18	$[0, Y, X]$	$[\frac{1}{2}, z + \frac{1}{2}, y + \frac{1}{2}]$	[18,43]
19	$[0, -Y, -X]$	$[\frac{1}{2}, \frac{1}{2} - z, \frac{1}{2} - y]$	[19,42]
20	$[0, -Y, X]$	$[\frac{1}{2}, \frac{1}{2} - z, y + \frac{1}{2}]$	[20,41]
21	$[Y, X, 0]$	$[z + \frac{1}{2}, y + \frac{1}{2}, \frac{1}{2}]$	[21,48]
22	$[Y, -X, 0]$	$[z + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{2}]$	[22,47]
23	$[-Y, X, 0]$	$[\frac{1}{2} - z, y + \frac{1}{2}, \frac{1}{2}]$	[23,46]
24	$[-Y, -X, 0]$	$[\frac{1}{2} - z, \frac{1}{2} - y, \frac{1}{2}]$	[24,45]

Table 35: Wyckoff bond: 96b@96i

No.	vector	center	mapping
1	$[X, 0, 0]$	$[0, y, z]$	[1,-28]
2	$[-X, 0, 0]$	$[0, -y, z]$	[2,-27]
3	$[-X, 0, 0]$	$[0, y, -z]$	[3,-26]
4	$[X, 0, 0]$	$[0, -y, -z]$	[4,-25]
5	$[0, X, 0]$	$[z, 0, y]$	[5,-32]
6	$[0, -X, 0]$	$[z, 0, -y]$	[6,-31]

*continued ...*

Table 35

No.	vector	center	mapping
7	[0, -X, 0]	[-z, 0, y]	[7, -30]
8	[0, X, 0]	[-z, 0, -y]	[8, -29]
9	[0, 0, X]	[y, z, 0]	[9, -36]
10	[0, 0, -X]	[-y, z, 0]	[10, -35]
11	[0, 0, -X]	[y, -z, 0]	[11, -34]
12	[0, 0, X]	[-y, -z, 0]	[12, -33]
13	[0, X, 0]	[y + 1/2, 1/2, 1/2 - z]	[13, -40]
14	[0, -X, 0]	[\frac{1}{2} - y, \frac{1}{2}, \frac{1}{2} - z]	[14, -39]
15	[0, -X, 0]	[y + 1/2, 1/2, z + 1/2]	[15, -38]
16	[0, X, 0]	[\frac{1}{2} - y, \frac{1}{2}, z + 1/2]	[16, -37]
17	[X, 0, 0]	[\frac{1}{2}, z + 1/2, \frac{1}{2} - y]	[17, -44]
18	[-X, 0, 0]	[\frac{1}{2}, z + 1/2, y + 1/2]	[18, -43]
19	[-X, 0, 0]	[\frac{1}{2}, \frac{1}{2} - z, \frac{1}{2} - y]	[19, -42]
20	[X, 0, 0]	[\frac{1}{2}, \frac{1}{2} - z, y + 1/2]	[20, -41]
21	[0, 0, -X]	[z + 1/2, y + 1/2, 1/2]	[21, -48]
22	[0, 0, X]	[z + 1/2, 1/2 - y, 1/2]	[22, -47]
23	[0, 0, X]	[\frac{1}{2} - z, y + 1/2, 1/2]	[23, -46]
24	[0, 0, -X]	[\frac{1}{2} - z, \frac{1}{2} - y, 1/2]	[24, -45]

Table 36: Wyckoff bond: 192c@96i

No.	vector	center	mapping
1	[X, Y, Z]	[0, y, z]	[1]
2	[-X, -Y, Z]	[0, -y, z]	[2]
3	[-X, Y, -Z]	[0, y, -z]	[3]
4	[X, -Y, -Z]	[0, -y, -z]	[4]
5	[Z, X, Y]	[z, 0, y]	[5]
6	[Z, -X, -Y]	[z, 0, -y]	[6]
7	[-Z, -X, Y]	[-z, 0, y]	[7]
8	[-Z, X, -Y]	[-z, 0, -y]	[8]
9	[Y, Z, X]	[y, z, 0]	[9]
10	[-Y, Z, -X]	[-y, z, 0]	[10]
11	[Y, -Z, -X]	[y, -z, 0]	[11]
12	[-Y, -Z, X]	[-y, -z, 0]	[12]
13	[Y, X, -Z]	[y + 1/2, 1/2, 1/2 - z]	[13]
14	[-Y, -X, -Z]	[\frac{1}{2} - y, \frac{1}{2}, \frac{1}{2} - z]	[14]
15	[Y, -X, Z]	[y + 1/2, 1/2, z + 1/2]	[15]
16	[-Y, X, Z]	[\frac{1}{2} - y, \frac{1}{2}, z + 1/2]	[16]
17	[X, Z, -Y]	[\frac{1}{2}, z + 1/2, \frac{1}{2} - y]	[17]
18	[-X, Z, Y]	[\frac{1}{2}, z + 1/2, y + 1/2]	[18]
19	[-X, -Z, -Y]	[\frac{1}{2}, \frac{1}{2} - z, \frac{1}{2} - y]	[19]
20	[X, -Z, Y]	[\frac{1}{2}, \frac{1}{2} - z, y + 1/2]	[20]
21	[Z, Y, -X]	[z + 1/2, y + 1/2, 1/2]	[21]
22	[Z, -Y, X]	[z + 1/2, \frac{1}{2} - y, 1/2]	[22]

continued ...

Table 36

No.	vector	center	mapping
23	$[-Z, Y, X]$	$[\frac{1}{2} - z, y + \frac{1}{2}, \frac{1}{2}]$	[23]
24	$[-Z, -Y, -X]$	$[\frac{1}{2} - z, \frac{1}{2} - y, \frac{1}{2}]$	[24]
25	$[-X, -Y, -Z]$	$[0, -y, -z]$	[25]
26	$[X, Y, -Z]$	$[0, y, -z]$	[26]
27	$[X, -Y, Z]$	$[0, -y, z]$	[27]
28	$[-X, Y, Z]$	$[0, y, z]$	[28]
29	$[-Z, -X, -Y]$	$[-z, 0, -y]$	[29]
30	$[-Z, X, Y]$	$[-z, 0, y]$	[30]
31	$[Z, X, -Y]$	$[z, 0, -y]$	[31]
32	$[Z, -X, Y]$	$[z, 0, y]$	[32]
33	$[-Y, -Z, -X]$	$[-y, -z, 0]$	[33]
34	$[Y, -Z, X]$	$[y, -z, 0]$	[34]
35	$[-Y, Z, X]$	$[-y, z, 0]$	[35]
36	$[Y, Z, -X]$	$[y, z, 0]$	[36]
37	$[-Y, -X, Z]$	$[\frac{1}{2} - y, \frac{1}{2}, z + \frac{1}{2}]$	[37]
38	$[Y, X, Z]$	$[y + \frac{1}{2}, \frac{1}{2}, z + \frac{1}{2}]$	[38]
39	$[-Y, X, -Z]$	$[\frac{1}{2} - y, \frac{1}{2}, \frac{1}{2} - z]$	[39]
40	$[Y, -X, -Z]$	$[y + \frac{1}{2}, \frac{1}{2}, \frac{1}{2} - z]$	[40]
41	$[-X, -Z, Y]$	$[\frac{1}{2}, \frac{1}{2} - z, y + \frac{1}{2}]$	[41]
42	$[X, -Z, -Y]$	$[\frac{1}{2}, \frac{1}{2} - z, \frac{1}{2} - y]$	[42]
43	$[X, Z, Y]$	$[\frac{1}{2}, z + \frac{1}{2}, y + \frac{1}{2}]$	[43]
44	$[-X, Z, -Y]$	$[\frac{1}{2}, z + \frac{1}{2}, \frac{1}{2} - y]$	[44]
45	$[-Z, -Y, X]$	$[\frac{1}{2} - z, \frac{1}{2} - y, \frac{1}{2}]$	[45]
46	$[-Z, Y, -X]$	$[\frac{1}{2} - z, y + \frac{1}{2}, \frac{1}{2}]$	[46]
47	$[Z, -Y, -X]$	$[z + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{2}]$	[47]
48	$[Z, Y, X]$	$[z + \frac{1}{2}, y + \frac{1}{2}, \frac{1}{2}]$	[48]

\* Wyckoff site: 192j, site symmetry: 1

Table 37: Wyckoff bond: 192a@192j

No.	vector	center	mapping
1	$[X, Y, Z]$	$[x, y, z]$	[1]
2	$[-X, -Y, Z]$	$[-x, -y, z]$	[2]
3	$[-X, Y, -Z]$	$[-x, y, -z]$	[3]
4	$[X, -Y, -Z]$	$[x, -y, -z]$	[4]
5	$[Z, X, Y]$	$[z, x, y]$	[5]
6	$[Z, -X, -Y]$	$[z, -x, -y]$	[6]
7	$[-Z, -X, Y]$	$[-z, -x, y]$	[7]
8	$[-Z, X, -Y]$	$[-z, x, -y]$	[8]
9	$[Y, Z, X]$	$[y, z, x]$	[9]
10	$[-Y, Z, -X]$	$[-y, z, -x]$	[10]
11	$[Y, -Z, -X]$	$[y, -z, -x]$	[11]
12	$[-Y, -Z, X]$	$[-y, -z, x]$	[12]
13	$[Y, X, -Z]$	$[y + \frac{1}{2}, x + \frac{1}{2}, \frac{1}{2} - z]$	[13]

continued ...

Table 37

No.	vector	center	mapping
14	$[-Y, -X, -Z]$	$[\frac{1}{2} - y, \frac{1}{2} - x, \frac{1}{2} - z]$	[14]
15	$[Y, -X, Z]$	$[y + \frac{1}{2}, \frac{1}{2} - x, z + \frac{1}{2}]$	[15]
16	$[-Y, X, Z]$	$[\frac{1}{2} - y, x + \frac{1}{2}, z + \frac{1}{2}]$	[16]
17	$[X, Z, -Y]$	$[x + \frac{1}{2}, z + \frac{1}{2}, \frac{1}{2} - y]$	[17]
18	$[-X, Z, Y]$	$[\frac{1}{2} - x, z + \frac{1}{2}, y + \frac{1}{2}]$	[18]
19	$[-X, -Z, -Y]$	$[\frac{1}{2} - x, \frac{1}{2} - z, \frac{1}{2} - y]$	[19]
20	$[X, -Z, Y]$	$[x + \frac{1}{2}, \frac{1}{2} - z, y + \frac{1}{2}]$	[20]
21	$[Z, Y, -X]$	$[z + \frac{1}{2}, y + \frac{1}{2}, \frac{1}{2} - x]$	[21]
22	$[Z, -Y, X]$	$[z + \frac{1}{2}, \frac{1}{2} - y, x + \frac{1}{2}]$	[22]
23	$[-Z, Y, X]$	$[\frac{1}{2} - z, y + \frac{1}{2}, x + \frac{1}{2}]$	[23]
24	$[-Z, -Y, -X]$	$[\frac{1}{2} - z, \frac{1}{2} - y, \frac{1}{2} - x]$	[24]
25	$[-X, -Y, -Z]$	$[-x, -y, -z]$	[25]
26	$[X, Y, -Z]$	$[x, y, -z]$	[26]
27	$[X, -Y, Z]$	$[x, -y, z]$	[27]
28	$[-X, Y, Z]$	$[-x, y, z]$	[28]
29	$[-Z, -X, -Y]$	$[-z, -x, -y]$	[29]
30	$[-Z, X, Y]$	$[-z, x, y]$	[30]
31	$[Z, X, -Y]$	$[z, x, -y]$	[31]
32	$[Z, -X, Y]$	$[z, -x, y]$	[32]
33	$[-Y, -Z, -X]$	$[-y, -z, -x]$	[33]
34	$[Y, -Z, X]$	$[y, -z, x]$	[34]
35	$[-Y, Z, X]$	$[-y, z, x]$	[35]
36	$[Y, Z, -X]$	$[y, z, -x]$	[36]
37	$[-Y, -X, Z]$	$[\frac{1}{2} - y, \frac{1}{2} - x, z + \frac{1}{2}]$	[37]
38	$[Y, X, Z]$	$[y + \frac{1}{2}, x + \frac{1}{2}, z + \frac{1}{2}]$	[38]
39	$[-Y, X, -Z]$	$[\frac{1}{2} - y, x + \frac{1}{2}, \frac{1}{2} - z]$	[39]
40	$[Y, -X, -Z]$	$[y + \frac{1}{2}, \frac{1}{2} - x, \frac{1}{2} - z]$	[40]
41	$[-X, -Z, Y]$	$[\frac{1}{2} - x, \frac{1}{2} - z, y + \frac{1}{2}]$	[41]
42	$[X, -Z, -Y]$	$[x + \frac{1}{2}, \frac{1}{2} - z, \frac{1}{2} - y]$	[42]
43	$[X, Z, Y]$	$[x + \frac{1}{2}, z + \frac{1}{2}, y + \frac{1}{2}]$	[43]
44	$[-X, Z, -Y]$	$[\frac{1}{2} - x, z + \frac{1}{2}, \frac{1}{2} - y]$	[44]
45	$[-Z, -Y, X]$	$[\frac{1}{2} - z, \frac{1}{2} - y, x + \frac{1}{2}]$	[45]
46	$[-Z, Y, -X]$	$[\frac{1}{2} - z, y + \frac{1}{2}, \frac{1}{2} - x]$	[46]
47	$[Z, -Y, -X]$	$[z + \frac{1}{2}, \frac{1}{2} - y, \frac{1}{2} - x]$	[47]
48	$[Z, Y, X]$	$[z + \frac{1}{2}, y + \frac{1}{2}, x + \frac{1}{2}]$	[48]