MSG No. 178.160 P_c6_122 [Type IV, hexagonal]

Table 1: Wyckoff site: 6a, site symmetry: 2'22'

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

Table 2: Wyckoff site: 6b, site symmetry: 2'2'2

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

Table 3: Wyckoff site: 6c, site symmetry: 2'22'

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

Table 4: Wyckoff site: 6d, site symmetry: 2'2'2

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

Table 5: Wyckoff site: `12e`, site symmetry: `2'..`

No.	position	mapping
1	$[0,\ 0,\ z]$	`[1,16]`
2	$\left[0,\ 0,\ z+\frac{1}{6}\right]$	`[2,17]`
3	$\left[0,\ 0,\ z+\frac{1}{3}\right]$	`[3,18]`
4	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[4,13]`
5	$\left[0,\ 0,\ z+\frac{2}{3}\right]$	`[5,14]`
6	$\left[0,\ 0,\ z+\frac{5}{6}\right]$	`[6,15]`
7	$[0,\ 0,\ -z]$	`[7,23]`
8	$\left[0,\ 0,\ \frac{1}{3}-z\right]$	`[8,24]`
9	$\left[0,\ 0,\ \frac{2}{3}-z\right]$	`[9,22]`
10	$\left[0,\ 0,\ \frac{1}{6}-z\right]$	`[10,21]`
11	$\left[0,\ 0,\ \frac{1}{2}-z\right]$	`[11,19]`
12	$\left[0,\ 0,\ \frac{5}{6}-z\right]$	`[12,20]`

Table 6: Wyckoff site: `12f`, site symmetry: `2'..`

No.	position	mapping
1	$\left[\frac{1}{2},\ 0,\ z\right]$	`[1,16]`
2	$\left[\frac{1}{2},\ \frac{1}{2},\ z+\frac{1}{6}\right]$	`[2,17]`
3	$\left[0,\ \frac{1}{2},\ z+\frac{1}{3}\right]$	`[3,18]`
4	$\left[\frac{1}{2},\ 0,\ z+\frac{1}{2}\right]$	`[4,13]`
5	$\left[\frac{1}{2},\ \frac{1}{2},\ z+\frac{2}{3}\right]$	`[5,14]`
6	$\left[0,\ \frac{1}{2},\ z+\frac{5}{6}\right]$	`[6,15]`
7	$\left[\frac{1}{2},\ 0,\ -z\right]$	`[7,23]`
8	$\left[0,\ \frac{1}{2},\ \frac{1}{3}-z\right]$	`[8,24]`
9	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{2}{3}-z\right]$	`[9,22]`
10	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{6}-z\right]$	`[10,21]`
11	$\left[\frac{1}{2},\ 0,\ \frac{1}{2}-z\right]$	`[11,19]`
12	$\left[0,\ \frac{1}{2},\ \frac{5}{6}-z\right]$	`[12,20]`

Table 7: Wyckoff site: `12g`, site symmetry: `.2.`

No.	position	mapping
1	$[x,\ 0,\ 0]$	`[1,7]`
2	$\left[x,\ x,\ \frac{1}{6}\right]$	`[2,10]`
3	$\left[0,\ x,\ \frac{1}{3}\right]$	`[3,8]`
4	$\left[-x,\ 0,\ \frac{1}{2}\right]$	`[4,11]`
5	$\left[-x,\ -x,\ \frac{2}{3}\right]$	`[5,9]`
6	$\left[0,\ -x,\ \frac{5}{6}\right]$	`[6,12]`
7	$\left[x,\ 0,\ \frac{1}{2}\right]$	`[13,19]`
8	$\left[x,\ x,\ \frac{2}{3}\right]$	`[14,22]`
9	$\left[0,\ x,\ \frac{5}{6}\right]$	`[15,20]`

continued ...

Table 7

No.	position	mapping
10	$[-x,\ 0,\ 0]$	`[16,23]`
11	$\left[-x,\ -x,\ \frac{1}{6}\right]$	`[17,21]`
12	$\left[0,\ -x,\ \frac{1}{3}\right]$	`[18,24]`

Table 8: Wyckoff site: `12h`, site symmetry: `.2'.`

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

Table 9: Wyckoff site: `12i`, site symmetry: `..2'`

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

Table 10: Wyckoff site: `12j`, site symmetry: `..2`

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

Table 11: Wyckoff site: `24k`, site symmetry: `1`

No.	position	mapping
1	$[x,\ y,\ z]$	`[1]`
2	$\left[x-y,\ x,\ z+\frac{1}{6}\right]$	`[2]`
3	$\left[-y,\ x-y,\ z+\frac{1}{3}\right]$	`[3]`
4	$\left[-x,\ -y,\ z+\frac{1}{2}\right]$	`[4]`
5	$\left[-x+y,\ -x,\ z+\frac{2}{3}\right]$	`[5]`
6	$\left[y,\ -x+y,\ z+\frac{5}{6}\right]$	`[6]`
7	$[x-y,\ -y,\ -z]$	`[7]`
8	$\left[y,\ x,\ \frac{1}{3}-z\right]$	`[8]`
9	$\left[-x,\ -x+y,\ \frac{2}{3}-z\right]$	`[9]`
10	$\left[x,\ x-y,\ \frac{1}{6}-z\right]$	`[10]`
11	$\left[-x+y,\ y,\ \frac{1}{2}-z\right]$	`[11]`
12	$\left[-y,\ -x,\ \frac{5}{6}-z\right]$	`[12]`
13	$\left[x,\ y,\ z+\frac{1}{2}\right]$	`[13]`
14	$\left[x-y,\ x,\ z+\frac{2}{3}\right]$	`[14]`
15	$\left[-y,\ x-y,\ z+\frac{5}{6}\right]$	`[15]`
16	$[-x,\ -y,\ z]$	`[16]`
17	$\left[-x+y,\ -x,\ z+\frac{1}{6}\right]$	`[17]`
18	$\left[y,\ -x+y,\ z+\frac{1}{3}\right]$	`[18]`
19	$\left[x-y,\ -y,\ \frac{1}{2}-z\right]$	`[19]`
20	$\left[y,\ x,\ \frac{5}{6}-z\right]$	`[20]`
21	$\left[-x,\ -x+y,\ \frac{1}{6}-z\right]$	`[21]`
22	$\left[x,\ x-y,\ \frac{2}{3}-z\right]$	`[22]`
23	$[-x+y,\ y,\ -z]$	`[23]`
24	$\left[-y,\ -x,\ \frac{1}{3}-z\right]$	`[24]`