MSG No. 194.270 $P6_3/mm'c'$ [Type III, hexagonal]

Table 1: Wyckoff site: 2a, site symmetry: -3m'.

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

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

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

Table 3: Wyckoff site: 2c, site symmetry: -6m'2'

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

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

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

Table 5: Wyckoff site: 4e, site symmetry: 3m'.

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

Table 6: Wyckoff site: `4f`, site symmetry: `3m'.`

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

Table 7: Wyckoff site: `6g`, site symmetry: `.2'/m'.`

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

Table 8: Wyckoff site: `6h`, site symmetry: `mm'2'`

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

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

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

continued ...

Table 9

No.	position	mapping
12	$\left[0,\, x,\, \frac{1}{2}\right]$	[12,24]

Table 10: Wyckoff site: 12j, site symmetry: m..

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

Table 11: Wyckoff site: 12k, site symmetry: .m'.

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

Table 12: Wyckoff site: 24l, site symmetry: 1

No.	position	mapping
1	$[x,\, y,\, z]$	[1]
2	$\left[x-y,\, x,\, z+\frac{1}{2}\right]$	[2]

continued ...

Table 12

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