MSG No. 194.266 $P6_3'/mm'c$ [Type III, hexagonal]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

continued ...

Table 9

No.	position	mapping
12	$[x,\, x,\, 0]$	`[21,24]`

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

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

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

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

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

No.	position	mapping
1	$[x,\, y,\, z]$	`[1]`
2	$[-y,\, x-y,\, z]$	`[2]`

continued ...

Table 12

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