MSG No. 192.244 $P6/mcc1'$ [Type II, hexagonal]

Table 1: Wyckoff site: 2a, site symmetry: 6221'

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

Table 2: Wyckoff site: 2b, site symmetry: 6/m..1'

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

Table 3: Wyckoff site: 4c, site symmetry: 3.21'

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

Table 4: Wyckoff site: 4d, site symmetry: -6..1'

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

Table 5: Wyckoff site: 4e, site symmetry: 6..1'

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

Table 6: Wyckoff site: `6f`, site symmetry: `2221'`

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

Table 7: Wyckoff site: `6g`, site symmetry: `2/m..1'`

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

Table 8: Wyckoff site: `8h`, site symmetry: `3..1'`

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

Table 9: Wyckoff site: `12i`, site symmetry: `2..1'`

No.	position	mapping
1	$\left[\frac{1}{2}, 0, z\right]$	`[1,4,25,28]`
2	$\left[\frac{1}{2}, \frac{1}{2}, z\right]$	`[2,5,26,29]`
3	$\left[0, \frac{1}{2}, z\right]$	`[3,6,27,30]`
4	$\left[\frac{1}{2}, 0, \frac{1}{2} - z\right]$	`[7,11,31,35]`
5	$\left[0, \frac{1}{2}, \frac{1}{2} - z\right]$	`[8,12,32,36]`
6	$\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - z\right]$	`[9,10,33,34]`
7	$\left[\frac{1}{2}, 0, -z\right]$	`[13,16,37,40]`

continued ...

Table 9

No.	position	mapping
8	$\left[\frac{1}{2},\ \frac{1}{2},\ -z\right]$	[14,17,38,41]
9	$\left[0,\ \frac{1}{2},\ -z\right]$	[15,18,39,42]
10	$\left[\frac{1}{2},\ 0,\ z+\frac{1}{2}\right]$	[19,23,43,47]
11	$\left[0,\ \frac{1}{2},\ z+\frac{1}{2}\right]$	[20,24,44,48]
12	$\left[\frac{1}{2},\ \frac{1}{2},\ z+\frac{1}{2}\right]$	[21,22,45,46]

Table 10: Wyckoff site: 12j, site symmetry: .2.1'

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

Table 11: Wyckoff site: 12k, site symmetry: ..21'

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

Table 12: Wyckoff site: `12l`, site symmetry: `m..1'`

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

Table 13: Wyckoff site: `24m`, site symmetry: `11'`

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