MSG No. 175.142 P_c6/m [Type IV, hexagonal]

Table 1: Wyckoff site: `2a`, site symmetry: `6/m..`

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

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

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

Table 3: Wyckoff site: `4c`, site symmetry: `-6..`

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

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

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

Table 5: Wyckoff site: `4e`, site symmetry: `6..`

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

Table 6: Wyckoff site: `6f`, site symmetry: `2/m..`

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

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

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

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

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

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

No.	position	mapping
1	$\left[\frac{1}{2}, 0, z\right]$	`[1,4]`
2	$\left[\frac{1}{2}, \frac{1}{2}, z\right]$	`[2,5]`
3	$\left[0, \frac{1}{2}, z\right]$	`[3,6]`
4	$\left[\frac{1}{2}, 0, -z\right]$	`[7,10]`
5	$\left[\frac{1}{2}, \frac{1}{2}, -z\right]$	`[8,11]`
6	$\left[0, \frac{1}{2}, -z\right]$	`[9,12]`
7	$\left[\frac{1}{2}, 0, z+\frac{1}{2}\right]$	`[13,16]`

continued ...

Table 9

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

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

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

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

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

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

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