MSG No. 175.140 $P6/m'$ [Type III, hexagonal]

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

No.	position	mapping
1	[0, 0, 0]	`[1,2,3,4,5,6,7,8,9,10,11,12]`

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

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

Table 3: Wyckoff site: `2c`, 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]`

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

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

Table 5: Wyckoff site: `2e`, 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]`

Table 6: Wyckoff site: `3f`, 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]`

Table 7: Wyckoff site: `3g`, site symmetry: `2/m'..`

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

Table 8: Wyckoff site: `4h`, 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]`

Table 9: Wyckoff site: `6i`, 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]`

Table 10: Wyckoff site: `6j`, 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]`

Table 11: Wyckoff site: `6k`, site symmetry: `m'..`

No.	position	mapping
1	$\left[x, y, \frac{1}{2}\right]$	`[1,10]`

continued ...

Table 11

No.	position	mapping
2	$\left[x-y,\, x,\, \frac{1}{2}\right]$	[2,11]
3	$\left[-y,\, x-y,\, \frac{1}{2}\right]$	[3,12]
4	$\left[-x,\, -y,\, \frac{1}{2}\right]$	[4,7]
5	$\left[-x+y,\, -x,\, \frac{1}{2}\right]$	[5,8]
6	$\left[y,\, -x+y,\, \frac{1}{2}\right]$	[6,9]

Table 12: Wyckoff site: 12l, 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]