MSG No. 175.141 $P6'/m'$ [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	$\left[\frac{1}{3}, \frac{2}{3}, 0\right]$	`[1,2,3,10,11,12]`
2	$\left[\frac{2}{3}, \frac{1}{3}, 0\right]$	`[4,5,6,7,8,9]`

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

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

Table 5: Wyckoff site: `2e`, site symmetry: `6'..`

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

Table 6: Wyckoff site: `3f`, site symmetry: `2'/m'..`

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

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

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

Table 8: Wyckoff site: `4h`, site symmetry: `3..`

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

Table 9: Wyckoff site: `6i`, site symmetry: `2'..`

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

Table 10: Wyckoff site: `6j`, site symmetry: `m'..`

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

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

No.	position	mapping
1	$\left[x, y, \frac{1}{2}\right]$	`[1,11]`

continued ...

Table 11

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

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

No.	position	mapping
1	$[x,\, y,\, z]$	[1]
2	$[-y,\, x-y,\, z]$	[2]
3	$[-x+y,\, -x,\, z]$	[3]
4	$[-x,\, -y,\, -z]$	[4]
5	$[y,\, -x+y,\, -z]$	[5]
6	$[x-y,\, x,\, -z]$	[6]
7	$[x-y,\, x,\, z]$	[7]
8	$[-x,\, -y,\, z]$	[8]
9	$[y,\, -x+y,\, z]$	[9]
10	$[-x+y,\, -x,\, -z]$	[10]
11	$[x,\, y,\, -z]$	[11]
12	$[-y,\, x-y,\, -z]$	[12]