MSG No. 175.138 $P6/m1'$ [Type II, hexagonal]

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

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

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

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

Table 3: Wyckoff site: `2c`, site symmetry: `-6..1'`

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

Table 4: Wyckoff site: `2d`, site symmetry: `-6..1'`

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

Table 5: Wyckoff site: `2e`, site symmetry: `6..1'`

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

Table 6: Wyckoff site: `3f`, site symmetry: `2/m..1'`

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

Table 7: Wyckoff site: `3g`, site symmetry: `2/m..1'`

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

Table 8: Wyckoff site: `4h`, site symmetry: `3..1'`

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

Table 9: Wyckoff site: `6i`, site symmetry: `2..1'`

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

Table 10: Wyckoff site: `6j`, site symmetry: `m..1'`

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

Table 11: Wyckoff site: `6k`, site symmetry: `m..1'`

No.	position	mapping
1	$\left[x, y, \frac{1}{2}\right]$	`[1,10,13,22]`

continued ...

Table 11

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

Table 12: Wyckoff site: 12l, site symmetry: 11'

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