MSG No. 189.222 $P\bar{6}2m1'$ [Type II, hexagonal]

Table 1: Wyckoff site: `1a`, site symmetry: `-62m1'`

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: `-62m1'`

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	$\left[\frac{1}{3}, \frac{2}{3}, 0\right]$	`[1,2,3,7,8,9,13,14,15,19,20,21]`
2	$\left[\frac{2}{3}, \frac{1}{3}, 0\right]$	`[4,5,6,10,11,12,16,17,18,22,23,24]`

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

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

Table 5: Wyckoff site: `2e`, site symmetry: `3.m1'`

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

Table 6: Wyckoff site: `3f`, site symmetry: `m2m1'`

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

Table 7: Wyckoff site: `3g`, site symmetry: `m2m1'`

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

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

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

Table 9: Wyckoff site: `6i`, site symmetry: `..m1'`

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

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

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

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

No.	position	mapping
1	$\left[x,\ y,\ \frac{1}{2}\right]$	`[1,8,13,20]`

continued ...

Table 11

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

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

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