MSG No. 182.181 $P6_3'2'2$ [Type III, hexagonal]

Table 1: Wyckoff site: 2a, site symmetry: 32'.

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

Table 2: Wyckoff site: 2b, site symmetry: 3.2

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

Table 3: Wyckoff site: 2c, site symmetry: 3.2

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

Table 4: Wyckoff site: 2d, site symmetry: 3.2

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

Table 5: Wyckoff site: 4e, site symmetry: 3..

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

Table 6: Wyckoff site: `4f`, site symmetry: `3..`

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

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

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

Table 8: Wyckoff site: `6h`, site symmetry: `..2`

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

Table 9: Wyckoff site: `12i`, site symmetry: `1`

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

continued ...

Table 9

No.	position	mapping
12	$[-x,\ -x+y,\ -z]$	[12]