MSG No. 90.99 $P4'2'_12$ [Type III, tetragonal]

Table 1: Wyckoff site: `2a`, site symmetry: `2.22`

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

Table 2: Wyckoff site: `2b`, site symmetry: `2.22`

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

Table 3: Wyckoff site: `2c`, site symmetry: `4'..`

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

Table 4: Wyckoff site: `4d`, site symmetry: `2..`

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

Table 5: Wyckoff site: `4e`, site symmetry: `..2`

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

Table 6: Wyckoff site: `4f`, site symmetry: `..2`

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

Table 7: Wyckoff site: `8g`, site symmetry: `1`

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