MSG No. 136.502 $P4'_2/m'nm'$ [Type III, tetragonal]

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

No.	position	mapping
1	$[0,\ 0,\ 0]$	[1,2,3,4,13,14,15,16]
2	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2}\right]$	[5,6,7,8,9,10,11,12]

Table 2: Wyckoff site: 2b, site symmetry: m'.m'm'

No.	position	mapping
1	$\left[0,\ 0,\ \frac{1}{2}\right]$	[1,2,3,4,13,14,15,16]
2	$\left[\frac{1}{2},\ \frac{1}{2},\ 0\right]$	[5,6,7,8,9,10,11,12]

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

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ 0\right]$	[1,2,13,14]
2	$\left[\frac{1}{2},\ 0,\ 0\right]$	[3,4,15,16]
3	$\left[0,\ \frac{1}{2},\ \frac{1}{2}\right]$	[5,6,9,10]
4	$\left[\frac{1}{2},\ 0,\ \frac{1}{2}\right]$	[7,8,11,12]

Table 4: Wyckoff site: 4d, site symmetry: -4..

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ \frac{1}{4}\right]$	[1,2,5,6]
2	$\left[\frac{1}{2},\ 0,\ \frac{3}{4}\right]$	[3,4,7,8]
3	$\left[0,\ \frac{1}{2},\ \frac{3}{4}\right]$	[9,10,13,14]
4	$\left[\frac{1}{2},\ 0,\ \frac{1}{4}\right]$	[11,12,15,16]

Table 5: Wyckoff site: 4e, site symmetry: 2.m'm'

No.	position	mapping
1	$[0,\ 0,\ z]$	[1,2,15,16]
2	$[0,\ 0,\ -z]$	[3,4,13,14]
3	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2}-z\right]$	[5,6,11,12]
4	$\left[\frac{1}{2},\ \frac{1}{2},\ z+\frac{1}{2}\right]$	[7,8,9,10]

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

No.	position	mapping
1	$[x,\ x,\ 0]$	`[1,3,14,16]`
2	$[-x,\ -x,\ 0]$	`[2,4,13,15]`
3	$\left[x+\frac{1}{2},\ \frac{1}{2}-x,\ \frac{1}{2}\right]$	`[5,8,10,11]`
4	$\left[\frac{1}{2}-x,\ x+\frac{1}{2},\ \frac{1}{2}\right]$	`[6,7,9,12]`

Table 7: Wyckoff site: `4g`, site symmetry: `m'.m'2`

No.	position	mapping
1	$[x,\ -x,\ 0]$	`[1,4,14,15]`
2	$[-x,\ x,\ 0]$	`[2,3,13,16]`
3	$\left[\frac{1}{2}-x,\ \frac{1}{2}-x,\ \frac{1}{2}\right]$	`[5,7,10,12]`
4	$\left[x+\frac{1}{2},\ x+\frac{1}{2},\ \frac{1}{2}\right]$	`[6,8,9,11]`

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

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ z\right]$	`[1,2]`
2	$\left[\frac{1}{2},\ 0,\ -z\right]$	`[3,4]`
3	$\left[0,\ \frac{1}{2},\ \frac{1}{2}-z\right]$	`[5,6]`
4	$\left[\frac{1}{2},\ 0,\ z+\frac{1}{2}\right]$	`[7,8]`
5	$\left[0,\ \frac{1}{2},\ z+\frac{1}{2}\right]$	`[9,10]`
6	$\left[\frac{1}{2},\ 0,\ \frac{1}{2}-z\right]$	`[11,12]`
7	$\left[0,\ \frac{1}{2},\ -z\right]$	`[13,14]`
8	$\left[\frac{1}{2},\ 0,\ z\right]$	`[15,16]`

Table 9: Wyckoff site: `8i`, site symmetry: `m'..`

No.	position	mapping
1	$[x,\ y,\ 0]$	`[1,14]`
2	$[-x,\ -y,\ 0]$	`[2,13]`
3	$[y,\ x,\ 0]$	`[3,16]`
4	$[-y,\ -x,\ 0]$	`[4,15]`
5	$\left[y+\frac{1}{2},\ \frac{1}{2}-x,\ \frac{1}{2}\right]$	`[5,10]`
6	$\left[\frac{1}{2}-y,\ x+\frac{1}{2},\ \frac{1}{2}\right]$	`[6,9]`
7	$\left[\frac{1}{2}-x,\ y+\frac{1}{2},\ \frac{1}{2}\right]$	`[7,12]`
8	$\left[x+\frac{1}{2},\ \frac{1}{2}-y,\ \frac{1}{2}\right]$	`[8,11]`

Table 10: Wyckoff site: `8j`, site symmetry: `..m'`

No.	position	mapping
1	$[x,\ x,\ z]$	`[1,16]`
2	$[-x,\ -x,\ z]$	`[2,15]`
3	$[x,\ x,\ -z]$	`[3,14]`
4	$[-x,\ -x,\ -z]$	`[4,13]`
5	$\left[x+\frac{1}{2},\ \frac{1}{2}-x,\ \frac{1}{2}-z\right]$	`[5,11]`
6	$\left[\frac{1}{2}-x,\ x+\frac{1}{2},\ \frac{1}{2}-z\right]$	`[6,12]`
7	$\left[\frac{1}{2}-x,\ x+\frac{1}{2},\ z+\frac{1}{2}\right]$	`[7,9]`
8	$\left[x+\frac{1}{2},\ \frac{1}{2}-x,\ z+\frac{1}{2}\right]$	`[8,10]`

Table 11: Wyckoff site: `16k`, 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	$\left[y+\frac{1}{2},\ \frac{1}{2}-x,\ \frac{1}{2}-z\right]$	`[5]`
6	$\left[\frac{1}{2}-y,\ x+\frac{1}{2},\ \frac{1}{2}-z\right]$	`[6]`
7	$\left[\frac{1}{2}-x,\ y+\frac{1}{2},\ z+\frac{1}{2}\right]$	`[7]`
8	$\left[x+\frac{1}{2},\ \frac{1}{2}-y,\ z+\frac{1}{2}\right]$	`[8]`
9	$\left[\frac{1}{2}-y,\ x+\frac{1}{2},\ z+\frac{1}{2}\right]$	`[9]`
10	$\left[y+\frac{1}{2},\ \frac{1}{2}-x,\ z+\frac{1}{2}\right]$	`[10]`
11	$\left[x+\frac{1}{2},\ \frac{1}{2}-y,\ \frac{1}{2}-z\right]$	`[11]`
12	$\left[\frac{1}{2}-x,\ y+\frac{1}{2},\ \frac{1}{2}-z\right]$	`[12]`
13	$[-x,\ -y,\ -z]$	`[13]`
14	$[x,\ y,\ -z]$	`[14]`
15	$[-y,\ -x,\ z]$	`[15]`
16	$[y,\ x,\ z]$	`[16]`