MSG No. 124.358 $P4'/m'cc'$ [Type III, tetragonal]

Table 1: Wyckoff site: `2a`, site symmetry: `4'2'2`

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

Table 2: Wyckoff site: `2b`, site symmetry: `4'/m'..`

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

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

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

Table 4: Wyckoff site: `2d`, site symmetry: `4'/m'..`

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

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

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

Table 6: Wyckoff site: `4f`, site symmetry: `22'2'`.

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

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

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

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

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

Table 9: Wyckoff site: `8i`, site symmetry: `2..`

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

Table 10: Wyckoff site: `8j`, site symmetry: `..2`

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

Table 11: Wyckoff site: `8k`, site symmetry: `.2'.`

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

Table 12: Wyckoff site: `8l`, site symmetry: `.2'.`

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

Table 13: Wyckoff site: `8m`, site symmetry: `m'..`

No.	position	mapping
1	$[x,\ y,\ 0]$	`[1,14]`
2	$[-x,\ -y,\ 0]$	`[2,13]`
3	$\left[y,\ x,\ \frac{1}{2}\right]$	`[3,16]`

continued ...

Table 13

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

Table 14: Wyckoff site: 16n, site symmetry: 1

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