MSG No. 135.484 $P4_2/mbc1'$ [Type II, tetragonal]

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

No.	position	mapping
1	$[0,\ 0,\ 0]$	`[1,6,9,14,17,22,25,30]`
2	$\left[0,\ 0,\ \frac{1}{2}\right]$	`[2,3,10,11,18,19,26,27]`
3	$\left[\frac{1}{2},\ \frac{1}{2},\ 0\right]$	`[4,5,12,13,20,21,28,29]`
4	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2}\right]$	`[7,8,15,16,23,24,31,32]`

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

No.	position	mapping
1	$\left[0,\ 0,\ \frac{1}{4}\right]$	`[1,6,10,11,17,22,26,27]`
2	$\left[0,\ 0,\ \frac{3}{4}\right]$	`[2,3,9,14,18,19,25,30]`
3	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{3}{4}\right]$	`[4,5,15,16,20,21,31,32]`
4	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{4}\right]$	`[7,8,12,13,23,24,28,29]`

Table 3: Wyckoff site: `4c`, site symmetry: `2/m..1'`

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ 0\right]$	`[1,6,9,14,17,22,25,30]`
2	$\left[\frac{1}{2},\ 0,\ \frac{1}{2}\right]$	`[2,3,10,11,18,19,26,27]`
3	$\left[\frac{1}{2},\ 0,\ 0\right]$	`[4,5,12,13,20,21,28,29]`
4	$\left[0,\ \frac{1}{2},\ \frac{1}{2}\right]$	`[7,8,15,16,23,24,31,32]`

Table 4: Wyckoff site: `4d`, site symmetry: `2.221'`

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ \frac{1}{4}\right]$	`[1,6,7,8,17,22,23,24]`
2	$\left[\frac{1}{2},\ 0,\ \frac{3}{4}\right]$	`[2,3,4,5,18,19,20,21]`
3	$\left[0,\ \frac{1}{2},\ \frac{3}{4}\right]$	`[9,14,15,16,25,30,31,32]`
4	$\left[\frac{1}{2},\ 0,\ \frac{1}{4}\right]$	`[10,11,12,13,26,27,28,29]`

Table 5: Wyckoff site: `8e`, site symmetry: `2..1'`

No.	position	mapping
1	$[0,\ 0,\ z]$	`[1,6,17,22]`
2	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[2,3,18,19]`

continued ...

Table 5

No.	position	mapping
3	$\left[\frac{1}{2}, \frac{1}{2}, -z\right]$	[4,5,20,21]
4	$\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2} - z\right]$	[7,8,23,24]
5	$[0, 0, -z]$	[9,14,25,30]
6	$\left[0, 0, \frac{1}{2} - z\right]$	[10,11,26,27]
7	$\left[\frac{1}{2}, \frac{1}{2}, z\right]$	[12,13,28,29]
8	$\left[\frac{1}{2}, \frac{1}{2}, z + \frac{1}{2}\right]$	[15,16,31,32]

Table 6: Wyckoff site: 8f, site symmetry: 2..1'

No.	position	mapping
1	$\left[0, \frac{1}{2}, z\right]$	[1,6,17,22]
2	$\left[\frac{1}{2}, 0, z + \frac{1}{2}\right]$	[2,3,18,19]
3	$\left[\frac{1}{2}, 0, -z\right]$	[4,5,20,21]
4	$\left[0, \frac{1}{2}, \frac{1}{2} - z\right]$	[7,8,23,24]
5	$\left[0, \frac{1}{2}, -z\right]$	[9,14,25,30]
6	$\left[\frac{1}{2}, 0, \frac{1}{2} - z\right]$	[10,11,26,27]
7	$\left[\frac{1}{2}, 0, z\right]$	[12,13,28,29]
8	$\left[0, \frac{1}{2}, z + \frac{1}{2}\right]$	[15,16,31,32]

Table 7: Wyckoff site: 8g, site symmetry: ..21'

No.	position	mapping
1	$\left[x, x + \frac{1}{2}, \frac{1}{4}\right]$	[1,7,17,23]
2	$\left[\frac{1}{2} - x, x, \frac{3}{4}\right]$	[2,5,18,21]
3	$\left[x + \frac{1}{2}, -x, \frac{3}{4}\right]$	[3,4,19,20]
4	$\left[-x, \frac{1}{2} - x, \frac{1}{4}\right]$	[6,8,22,24]
5	$\left[-x, \frac{1}{2} - x, \frac{3}{4}\right]$	[9,15,25,31]
6	$\left[x + \frac{1}{2}, -x, \frac{1}{4}\right]$	[10,13,26,29]
7	$\left[\frac{1}{2} - x, x, \frac{1}{4}\right]$	[11,12,27,28]
8	$\left[x, x + \frac{1}{2}, \frac{3}{4}\right]$	[14,16,30,32]

Table 8: Wyckoff site: 8h, site symmetry: m..1'

No.	position	mapping
1	$[x, y, 0]$	[1,14,17,30]
2	$\left[-y, x, \frac{1}{2}\right]$	[2,11,18,27]
3	$\left[y, -x, \frac{1}{2}\right]$	[3,10,19,26]
4	$\left[x + \frac{1}{2}, \frac{1}{2} - y, 0\right]$	[4,13,20,29]
5	$\left[\frac{1}{2} - x, y + \frac{1}{2}, 0\right]$	[5,12,21,28]

continued ...

Table 8

No.	position	mapping
6	$[-x,\ -y,\ 0]$	`[6,9,22,25]`
7	$\left[y+\frac{1}{2},\ x+\frac{1}{2},\ \frac{1}{2}\right]$	`[7,16,23,32]`
8	$\left[\frac{1}{2}-y,\ \frac{1}{2}-x,\ \frac{1}{2}\right]$	`[8,15,24,31]`

Table 9: Wyckoff site: `16i`, site symmetry: `11'`

No.	position	mapping
1	$[x,\ y,\ z]$	`[1,17]`
2	$\left[-y,\ x,\ z+\frac{1}{2}\right]$	`[2,18]`
3	$\left[y,\ -x,\ z+\frac{1}{2}\right]$	`[3,19]`
4	$\left[x+\frac{1}{2},\ \frac{1}{2}-y,\ -z\right]$	`[4,20]`
5	$\left[\frac{1}{2}-x,\ y+\frac{1}{2},\ -z\right]$	`[5,21]`
6	$[-x,\ -y,\ z]$	`[6,22]`
7	$\left[y+\frac{1}{2},\ x+\frac{1}{2},\ \frac{1}{2}-z\right]$	`[7,23]`
8	$\left[\frac{1}{2}-y,\ \frac{1}{2}-x,\ \frac{1}{2}-z\right]$	`[8,24]`
9	$[-x,\ -y,\ -z]$	`[9,25]`
10	$\left[y,\ -x,\ \frac{1}{2}-z\right]$	`[10,26]`
11	$\left[-y,\ x,\ \frac{1}{2}-z\right]$	`[11,27]`
12	$\left[\frac{1}{2}-x,\ y+\frac{1}{2},\ z\right]$	`[12,28]`
13	$\left[x+\frac{1}{2},\ \frac{1}{2}-y,\ z\right]$	`[13,29]`
14	$[x,\ y,\ -z]$	`[14,30]`
15	$\left[\frac{1}{2}-y,\ \frac{1}{2}-x,\ z+\frac{1}{2}\right]$	`[15,31]`
16	$\left[y+\frac{1}{2},\ x+\frac{1}{2},\ z+\frac{1}{2}\right]$	`[16,32]`