MSG No. 136.496 $P4_2/mnm1'$ [Type II, tetragonal]

Table 1: Wyckoff site: `2a`, site symmetry: `m.mm1'`

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

Table 2: Wyckoff site: `2b`, site symmetry: `m.mm1'`

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

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	$\left[0, \frac{1}{2}, \frac{1}{2}\right]$	`[2,3,10,11,18,19,26,27]`
3	$\left[\frac{1}{2}, 0, \frac{1}{2}\right]$	`[4,5,12,13,20,21,28,29]`
4	$\left[\frac{1}{2}, 0, 0\right]$	`[7,8,15,16,23,24,31,32]`

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

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

Table 5: Wyckoff site: `4e`, site symmetry: `2.mm1'`

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

Table 6: Wyckoff site: `4f`, site symmetry: `m.2m1'`

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

Table 7: Wyckoff site: `4g`, site symmetry: `m.m21'`

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

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

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

Table 9: Wyckoff site: `8i`, site symmetry: `m..1'`

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

Table 10: Wyckoff site: `8j`, site symmetry: `..m1'`

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

Table 11: Wyckoff site: `16k`, site symmetry: `11'`

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