MSG No. 213.65 $P4'_132'$ [Type III, cubic]

Table 1: Wyckoff site: `4a`, site symmetry: `.32'`

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

Table 2: Wyckoff site: `4b`, site symmetry: `.32'`

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

Table 3: Wyckoff site: `8c`, site symmetry: `.3.`

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

Table 4: Wyckoff site: `12d`, site symmetry: `..2'`

No.	position	mapping
1	$\left[\frac{1}{8}, y, y+\frac{1}{4}\right]$	`[1,21]`
2	$\left[\frac{5}{8}, \frac{1}{2}-y, \frac{3}{4}-y\right]$	`[2,22]`
3	$\left[\frac{7}{8}, y+\frac{1}{2}, \frac{1}{4}-y\right]$	`[3,14]`
4	$\left[\frac{3}{8}, -y, y+\frac{3}{4}\right]$	`[4,13]`
5	$\left[y+\frac{1}{4}, \frac{1}{8}, y\right]$	`[5,18]`
6	$\left[y, y+\frac{1}{4}, \frac{1}{8}\right]$	`[6,15]`
7	$\left[-y, y+\frac{3}{4}, \frac{3}{8}\right]$	`[7,16]`
8	$\left[\frac{1}{4}-y, \frac{7}{8}, y+\frac{1}{2}\right]$	`[8,17]`
9	$\left[\frac{1}{2}-y, \frac{3}{4}-y, \frac{5}{8}\right]$	`[9,24]`

continued ...

Table 4

No.	position	mapping
10	$\left[y+\frac{3}{4},\ \frac{3}{8},\ -y\right]$	[10,19]
11	$\left[y+\frac{1}{2},\ \frac{1}{4}-y,\ \frac{7}{8}\right]$	[11,23]
12	$\left[\frac{3}{4}-y,\ \frac{5}{8},\ \frac{1}{2}-y\right]$	[12,20]

Table 5: Wyckoff site: 24e, site symmetry: 1

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