MSG No. 213.64 $P4_1321'$ [Type II, cubic]

Table 1: Wyckoff site: `4a`, site symmetry: `.321'`

No.	position	mapping
1	$\left[\frac{3}{8}, \frac{3}{8}, \frac{3}{8}\right]$	`[1,12,14,16,17,18,25,36,38,40,41,42]`
2	$\left[\frac{5}{8}, \frac{7}{8}, \frac{1}{8}\right]$	`[2,7,9,15,19,24,26,31,33,39,43,48]`
3	$\left[\frac{1}{8}, \frac{5}{8}, \frac{7}{8}\right]$	`[3,4,10,11,20,21,27,28,34,35,44,45]`
4	$\left[\frac{7}{8}, \frac{1}{8}, \frac{5}{8}\right]$	`[5,6,8,13,22,23,29,30,32,37,46,47]`

Table 2: Wyckoff site: `4b`, site symmetry: `.321'`

No.	position	mapping
1	$\left[\frac{7}{8}, \frac{7}{8}, \frac{7}{8}\right]$	`[1,12,14,16,17,18,25,36,38,40,41,42]`
2	$\left[\frac{1}{8}, \frac{3}{8}, \frac{5}{8}\right]$	`[2,7,9,15,19,24,26,31,33,39,43,48]`
3	$\left[\frac{5}{8}, \frac{1}{8}, \frac{3}{8}\right]$	`[3,4,10,11,20,21,27,28,34,35,44,45]`
4	$\left[\frac{3}{8}, \frac{5}{8}, \frac{1}{8}\right]$	`[5,6,8,13,22,23,29,30,32,37,46,47]`

Table 3: Wyckoff site: `8c`, site symmetry: `.3.1'`

No.	position	mapping
1	$[x, x, x]$	`[1,17,18,25,41,42]`
2	$\left[x+\frac{1}{4}, \frac{1}{4}-x, x+\frac{3}{4}\right]$	`[2,7,15,26,31,39]`
3	$\left[x+\frac{3}{4}, x+\frac{1}{4}, \frac{1}{4}-x\right]$	`[3,4,11,27,28,35]`
4	$\left[\frac{1}{4}-x, x+\frac{3}{4}, x+\frac{1}{4}\right]$	`[5,6,13,29,30,37]`
5	$\left[x+\frac{1}{2}, \frac{1}{2}-x, -x\right]$	`[8,22,23,32,46,47]`
6	$\left[-x, x+\frac{1}{2}, \frac{1}{2}-x\right]$	`[9,19,24,33,43,48]`
7	$\left[\frac{1}{2}-x, -x, x+\frac{1}{2}\right]$	`[10,20,21,34,44,45]`
8	$\left[\frac{3}{4}-x, \frac{3}{4}-x, \frac{3}{4}-x\right]$	`[12,14,16,36,38,40]`

Table 4: Wyckoff site: `12d`, site symmetry: `..21'`

No.	position	mapping
1	$\left[\frac{1}{8}, y, y+\frac{1}{4}\right]$	`[1,13,25,37]`
2	$\left[\frac{3}{8}, -y, y+\frac{3}{4}\right]$	`[2,10,26,34]`
3	$\left[\frac{7}{8}, y+\frac{1}{2}, \frac{1}{4}-y\right]$	`[3,9,27,33]`
4	$\left[y, y+\frac{1}{4}, \frac{1}{8}\right]$	`[4,18,28,42]`
5	$\left[-y, y+\frac{3}{4}, \frac{3}{8}\right]$	`[5,19,29,43]`
6	$\left[\frac{1}{4}-y, \frac{7}{8}, y+\frac{1}{2}\right]$	`[6,20,30,44]`
7	$\left[y+\frac{1}{4}, \frac{1}{8}, y\right]$	`[7,17,31,41]`
8	$\left[\frac{5}{8}, \frac{1}{2}-y, \frac{3}{4}-y\right]$	`[8,14,32,38]`
9	$\left[y+\frac{3}{4}, \frac{3}{8}, -y\right]$	`[11,22,35,46]`

continued ...

Table 4

No.	position	mapping
10	$\left[\frac{3}{4}-y,\ \frac{5}{8},\ \frac{1}{2}-y\right]$	[12,24,36,48]
11	$\left[y+\frac{1}{2},\ \frac{1}{4}-y,\ \frac{7}{8}\right]$	[15,23,39,47]
12	$\left[\frac{1}{2}-y,\ \frac{3}{4}-y,\ \frac{5}{8}\right]$	[16,21,40,45]

Table 5: Wyckoff site: 24e, site symmetry: 11'

No.	position	mapping
1	$[x,\ y,\ z]$	[1,25]
2	$\left[x+\frac{1}{4},\ \frac{1}{4}-z,\ y+\frac{3}{4}\right]$	[2,26]
3	$\left[x+\frac{3}{4},\ z+\frac{1}{4},\ \frac{1}{4}-y\right]$	[3,27]
4	$\left[z+\frac{3}{4},\ y+\frac{1}{4},\ \frac{1}{4}-x\right]$	[4,28]
5	$\left[\frac{1}{4}-z,\ y+\frac{3}{4},\ x+\frac{1}{4}\right]$	[5,29]
6	$\left[\frac{1}{4}-y,\ x+\frac{3}{4},\ z+\frac{1}{4}\right]$	[6,30]
7	$\left[y+\frac{1}{4},\ \frac{1}{4}-x,\ z+\frac{3}{4}\right]$	[7,31]
8	$\left[x+\frac{1}{2},\ \frac{1}{2}-y,\ -z\right]$	[8,32]
9	$\left[-x,\ y+\frac{1}{2},\ \frac{1}{2}-z\right]$	[9,33]
10	$\left[\frac{1}{2}-x,\ -y,\ z+\frac{1}{2}\right]$	[10,34]
11	$\left[y+\frac{3}{4},\ x+\frac{1}{4},\ \frac{1}{4}-z\right]$	[11,35]
12	$\left[\frac{3}{4}-y,\ \frac{3}{4}-x,\ \frac{3}{4}-z\right]$	[12,36]
13	$\left[\frac{1}{4}-x,\ z+\frac{3}{4},\ y+\frac{1}{4}\right]$	[13,37]
14	$\left[\frac{3}{4}-x,\ \frac{3}{4}-z,\ \frac{3}{4}-y\right]$	[14,38]
15	$\left[z+\frac{1}{4},\ \frac{1}{4}-y,\ x+\frac{3}{4}\right]$	[15,39]
16	$\left[\frac{3}{4}-z,\ \frac{3}{4}-y,\ \frac{3}{4}-x\right]$	[16,40]
17	$[z,\ x,\ y]$	[17,41]
18	$[y,\ z,\ x]$	[18,42]
19	$\left[-y,\ z+\frac{1}{2},\ \frac{1}{2}-x\right]$	[19,43]
20	$\left[\frac{1}{2}-z,\ -x,\ y+\frac{1}{2}\right]$	[20,44]
21	$\left[\frac{1}{2}-y,\ -z,\ x+\frac{1}{2}\right]$	[21,45]
22	$\left[z+\frac{1}{2},\ \frac{1}{2}-x,\ -y\right]$	[22,46]
23	$\left[y+\frac{1}{2},\ \frac{1}{2}-z,\ -x\right]$	[23,47]
24	$\left[-z,\ x+\frac{1}{2},\ \frac{1}{2}-y\right]$	[24,48]