

MSG No. 86.69 $P4'_2/n$ [Type III, tetragonal]

Table 1: Wyckoff site: 2a, site symmetry: $-4'..$

No.	position	mapping
1	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{4}]$	[1,2,7,8]
2	$[\frac{3}{4}, \frac{3}{4}, \frac{3}{4}]$	[3,4,5,6]

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

No.	position	mapping
1	$[\frac{1}{4}, \frac{1}{4}, \frac{3}{4}]$	[1,2,7,8]
2	$[\frac{3}{4}, \frac{3}{4}, \frac{1}{4}]$	[3,4,5,6]

Table 3: Wyckoff site: 4c, site symmetry: -1

No.	position	mapping
1	[0, 0, 0]	[1,3]
2	$[\frac{1}{2}, \frac{1}{2}, 0]$	[2,4]
3	$[0, \frac{1}{2}, \frac{1}{2}]$	[5,7]
4	$[\frac{1}{2}, 0, \frac{1}{2}]$	[6,8]

Table 4: Wyckoff site: 4d, site symmetry: -1

No.	position	mapping
1	$[0, 0, \frac{1}{2}]$	[1,3]
2	$[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}]$	[2,4]
3	$[0, \frac{1}{2}, 0]$	[5,7]
4	$[\frac{1}{2}, 0, 0]$	[6,8]

Table 5: Wyckoff site: 4e, site symmetry: $2..$

No.	position	mapping
1	$[\frac{3}{4}, \frac{1}{4}, z]$	[1,2]
2	$[\frac{1}{4}, \frac{3}{4}, -z]$	[3,4]
3	$[\frac{3}{4}, \frac{1}{4}, z + \frac{1}{2}]$	[5,6]
4	$[\frac{1}{4}, \frac{3}{4}, \frac{1}{2} - z]$	[7,8]

Table 6: Wyckoff site: $4f$, site symmetry: $2..$

No.	position	mapping
1	$[\frac{1}{4}, \frac{1}{4}, z]$	[1, 2]
2	$[\frac{3}{4}, \frac{3}{4}, -z]$	[3, 4]
3	$[\frac{3}{4}, \frac{3}{4}, z + \frac{1}{2}]$	[5, 6]
4	$[\frac{1}{4}, \frac{1}{4}, \frac{1}{2} - z]$	[7, 8]

Table 7: Wyckoff site: $8g$, site symmetry: 1

No.	position	mapping
1	$[x, y, z]$	[1]
2	$[\frac{1}{2} - x, \frac{1}{2} - y, z]$	[2]
3	$[-x, -y, -z]$	[3]
4	$[x + \frac{1}{2}, y + \frac{1}{2}, -z]$	[4]
5	$[-y, x + \frac{1}{2}, z + \frac{1}{2}]$	[5]
6	$[y + \frac{1}{2}, -x, z + \frac{1}{2}]$	[6]
7	$[y, \frac{1}{2} - x, \frac{1}{2} - z]$	[7]
8	$[\frac{1}{2} - y, x, \frac{1}{2} - z]$	[8]