

MSG No. 99.164 $P4mm1'$ [Type II, tetragonal]

Table 1: Wyckoff site: 1a, site symmetry: $4mm1'$

No.	position	mapping
1	$[0, 0, z]$	$[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16]$

Table 2: Wyckoff site: 1b, site symmetry: $4mm1'$

No.	position	mapping
1	$[\frac{1}{2}, \frac{1}{2}, z]$	$[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16]$

Table 3: Wyckoff site: 2c, site symmetry: $2mm.1'$

No.	position	mapping
1	$[\frac{1}{2}, 0, z]$	$[1, 4, 5, 6, 9, 12, 13, 14]$
2	$[0, \frac{1}{2}, z]$	$[2, 3, 7, 8, 10, 11, 15, 16]$

Table 4: Wyckoff site: 4d, site symmetry: $.m1'$

No.	position	mapping
1	$[x, x, z]$	$[1, 8, 9, 16]$
2	$[-x, x, z]$	$[2, 5, 10, 13]$
3	$[x, -x, z]$	$[3, 6, 11, 14]$
4	$[-x, -x, z]$	$[4, 7, 12, 15]$

Table 5: Wyckoff site: 4e, site symmetry: $.m.1'$

No.	position	mapping
1	$[x, 0, z]$	$[1, 6, 9, 14]$
2	$[0, x, z]$	$[2, 8, 10, 16]$
3	$[0, -x, z]$	$[3, 7, 11, 15]$
4	$[-x, 0, z]$	$[4, 5, 12, 13]$

Table 6: Wyckoff site: $4f$, site symmetry: $\bar{4}2m$

No.	position	mapping
1	$[x, \frac{1}{2}, z]$	$[1, 6, 9, 14]$
2	$[\frac{1}{2}, x, z]$	$[2, 8, 10, 16]$
3	$[\frac{1}{2}, -x, z]$	$[3, 7, 11, 15]$
4	$[-x, \frac{1}{2}, z]$	$[4, 5, 12, 13]$

Table 7: Wyckoff site: $8g$, site symmetry: 23

No.	position	mapping
1	$[x, y, z]$	$[1, 9]$
2	$[-y, x, z]$	$[2, 10]$
3	$[y, -x, z]$	$[3, 11]$
4	$[-x, -y, z]$	$[4, 12]$
5	$[-x, y, z]$	$[5, 13]$
6	$[x, -y, z]$	$[6, 14]$
7	$[-y, -x, z]$	$[7, 15]$
8	$[y, x, z]$	$[8, 16]$