

MSG No. 51.292  $Pmm'a$  [ Type III, orthorhombic ]

Table 1: Wyckoff site: 2a, site symmetry:  $.2/m'$ .

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

Table 2: Wyckoff site: 2b, site symmetry:  $.2/m'$ .

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

Table 3: Wyckoff site: 2c, site symmetry:  $.2/m'$ .

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

Table 4: Wyckoff site: 2d, site symmetry:  $.2/m'$ .

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

Table 5: Wyckoff site: 2e, site symmetry:  $mm'2'$

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

Table 6: Wyckoff site: 2f, site symmetry:  $mm'2'$

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

Table 7: Wyckoff site:  $4g$ , site symmetry:  $.2$ .

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

Table 8: Wyckoff site:  $4h$ , site symmetry:  $.2$ .

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

Table 9: Wyckoff site:  $4i$ , site symmetry:  $.m'$ .

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

Table 10: Wyckoff site:  $4j$ , site symmetry:  $.m'$ .

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

Table 11: Wyckoff site:  $4k$ , site symmetry:  $m..$ 

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

Table 12: Wyckoff site:  $81$ , site symmetry:  $1$ 

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