

MSG No. 162.75 $P\bar{3}'1m$ [Type III, trigonal]

Table 1: Wyckoff site: 1a, site symmetry: $-3' .m$

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

Table 2: Wyckoff site: 1b, site symmetry: $-3' .m$

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

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

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

Table 4: Wyckoff site: 2d, site symmetry: $3 .2'$

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

Table 5: Wyckoff site: 2e, site symmetry: $3 .m$

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

Table 6: Wyckoff site: 3f, site symmetry: $. . 2' /m$

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

Table 7: Wyckoff site: 3g, site symmetry: $\dots 2'/m$

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

Table 8: Wyckoff site: 4h, site symmetry: $3..$

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

Table 9: Wyckoff site: 6i, site symmetry: $\dots 2'$

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

Table 10: Wyckoff site: 6j, site symmetry: $\dots 2'$

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

Table 11: Wyckoff site: 6k, site symmetry: $\dots m$

No.	position	mapping
1	$[x, 0, z]$	[1,5]

continued ...

Table 11

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

Table 12: Wyckoff site: 121, site symmetry: 1

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