

MSG No. 128.399  $P4/mnc$  [ Type I, tetragonal ]

Table 1: Wyckoff site: 2a, site symmetry: 4/m..

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

Table 2: Wyckoff site: 2b, site symmetry: 4/m..

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

Table 3: Wyckoff site: 4c, site symmetry: 2/m..

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

Table 4: Wyckoff site: 4d, site symmetry: 2.22

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

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

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

Table 6: Wyckoff site: 8f, site symmetry: 2..

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

Table 7: Wyckoff site: 8g, site symmetry: ..2

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

Table 8: Wyckoff site: 8h, site symmetry: m..

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

Table 9: Wyckoff site: 16i, site symmetry: 1

No.	position	mapping
1	$[x, y, z]$	[1]
2	$[-y, x, z]$	[2]
3	$[y, -x, z]$	[3]

continued ...

Table 9

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