

MSG No. 130.429  $P4/nc'c'$  [ Type III, tetragonal ]

Table 1: Wyckoff site: 4a, site symmetry: 2.2'2'

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

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

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

Table 3: Wyckoff site: 4c, site symmetry: 4..

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

Table 4: Wyckoff site: 8d, site symmetry: -1

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

Table 5: Wyckoff site: 8e, site symmetry: 2..

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

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

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

Table 7: Wyckoff site: 16g, site symmetry: 1

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