

MSG No. 126.382 $P4'/n'nc'$ [Type III, tetragonal]

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

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

Table 2: Wyckoff site: 2b, site symmetry: 4'2'2

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

Table 3: Wyckoff site: 4c, site symmetry: 22'2' .

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

Table 4: Wyckoff site: 4d, site symmetry: -4..

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

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

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

Table 6: Wyckoff site: 8f, site symmetry: -1'.

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

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

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

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

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

Table 9: Wyckoff site: 8i, site symmetry: .2'.

No.	position	mapping
1	[x, \frac{1}{4}, \frac{1}{4}]	[1, 11]
2	[\frac{1}{2} - x, \frac{1}{4}, \frac{1}{4}]	[2, 12]
3	[\frac{1}{4}, x, \frac{1}{4}]	[3, 9]

continued ...

Table 9

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

Table 10: Wyckoff site: 8j, site symmetry: .2'.

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

Table 11: Wyckoff site: 16k, site symmetry: 1

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