

MSG No. 61.439  $P_C bca$  [ Type IV, orthorhombic ]

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

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

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

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

Table 3: Wyckoff site: 8c, site symmetry:  $-1'$

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

Table 4: Wyckoff site: 8d, site symmetry:  $2'..$

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

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

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

Table 6: Wyckoff site:  $8f$ , site symmetry:  $m'$ .

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

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

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