

MSG No. 61.440  $P_l bca$  [ Type IV, orthorhombic ]

Table 1: Wyckoff site: **8a**, site symmetry:  $-1'$

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

Table 2: Wyckoff site: **8b**, site symmetry:  $-1$

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

Table 3: Wyckoff site: **8c**, site symmetry:  $2'..$

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

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

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

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

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

Table 6: Wyckoff site: 16f, 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	$[x + \frac{1}{2}, y + \frac{1}{2}, z + \frac{1}{2}]$	$[9]$
10	$[x, -y, \frac{1}{2} - z]$	$[10]$
11	$[\frac{1}{2} - x, y, -z]$	$[11]$
12	$[-x, \frac{1}{2} - y, z]$	$[12]$
13	$[\frac{1}{2} - x, \frac{1}{2} - y, \frac{1}{2} - z]$	$[13]$
14	$[-x, y, z + \frac{1}{2}]$	$[14]$
15	$[x + \frac{1}{2}, -y, z]$	$[15]$
16	$[x, y + \frac{1}{2}, -z]$	$[16]$