

SG No. 163 D_{3d}^2 $P\bar{3}1c$ [trigonal]

* plus set: $+ [0, 0, 0]$

Table 1: Wyckoff site: 2a, site symmetry: 3.2

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

Table 2: Wyckoff site: 2b, site symmetry: $-3..$

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

Table 3: Wyckoff site: 2c, site symmetry: 3.2

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

Table 4: Wyckoff site: 2d, site symmetry: 3.2

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

Table 5: Wyckoff site: 4e, site symmetry: $3..$

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

Table 6: Wyckoff site: **4f**, site symmetry: $\bar{3}$.

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

Table 7: Wyckoff site: **6g**, site symmetry: $\bar{1}$

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

Table 8: Wyckoff site: **6h**, site symmetry: $\bar{1}2$

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

Table 9: Wyckoff site: **12i**, site symmetry: $\bar{1}$

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

continued ...

Table 9

No.	position	mapping
12	$[-x, -x + y, z + \frac{1}{2}]$	[12]