SG No. 162 D^1_{3d} $P\bar{3}1m$ [trigonal]

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

Table 1: Wyckoff site: `1a`, site symmetry: `-3.m`

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

Table 2: Wyckoff site: `1b`, site symmetry: `-3.m`

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

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

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

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

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

Table 5: Wyckoff site: `2e`, site symmetry: `3.m`

No.	position	mapping
1	$[0, 0, z]$	`[1,2,3,10,11,12]`
2	$[0, 0, -z]$	`[4,5,6,7,8,9]`

Table 6: Wyckoff site: `3f`, site symmetry: `..2/m`

No.	position	mapping
1	$\left[\frac{1}{2}, 0, 0\right]$	`[1,5,7,11]`
2	$\left[0, \frac{1}{2}, 0\right]$	`[2,4,8,10]`

3	$\left[\frac{1}{2},\ \frac{1}{2},\ 0\right]$	`[3,6,9,12]`

Table 7: Wyckoff site: `3g`, site symmetry: `..2/m`

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

Table 8: Wyckoff site: `4h`, site symmetry: `3..`

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

Table 9: Wyckoff site: `6i`, site symmetry: `..2`

No.	position	mapping
1	$[x,\ -x,\ 0]$	`[1,4]`
2	$[x,\ 2x,\ 0]$	`[2,6]`
3	$[-2x,\ -x,\ 0]$	`[3,5]`
4	$[-x,\ x,\ 0]$	`[7,10]`
5	$[-x,\ -2x,\ 0]$	`[8,12]`
6	$[2x,\ x,\ 0]$	`[9,11]`

Table 10: Wyckoff site: `6j`, site symmetry: `..2`

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

Table 11: Wyckoff site: `6k`, site symmetry: `..m`

No.	position	mapping
1	$[x, 0, z]$	`[1,11]`
2	$[0, x, z]$	`[2,10]`
3	$[-x, -x, z]$	`[3,12]`
4	$[0, -x, -z]$	`[4,8]`
5	$[-x, 0, -z]$	`[5,7]`
6	$[x, x, -z]$	`[6,9]`

Table 12: Wyckoff site: `12l`, site symmetry: `1`

No.	position	mapping
1	$[x, y, z]$	`[1]`
2	$[-y, x-y, z]$	`[2]`
3	$[-x+y, -x, z]$	`[3]`
4	$[-y, -x, -z]$	`[4]`
5	$[-x+y, y, -z]$	`[5]`
6	$[x, x-y, -z]$	`[6]`
7	$[-x, -y, -z]$	`[7]`
8	$[y, -x+y, -z]$	`[8]`
9	$[x-y, x, -z]$	`[9]`
10	$[y, x, z]$	`[10]`
11	$[x-y, -y, z]$	`[11]`
12	$[-x, -x+y, z]$	`[12]`