SG No. 184 C_{6v}^{2} $P6cc$ [hexagonal]

* plus set: $+[0,\ 0,\ 0]$
* Wyckoff site: `2a`, site symmetry: `6..`

Table 1: Wyckoff bond: `2a@2a`

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

Table 2: Wyckoff bond: `6b@2a`

No.	vector	center	mapping
1	$[X,\ Y,\ 0]$	$[0,\ 0,\ z]$	`[1,-4]`
2	$[-Y,\ X-Y,\ 0]$	$[0,\ 0,\ z]$	`[2,-5]`
3	$[-X+Y,\ -X,\ 0]$	$[0,\ 0,\ z]$	`[3,-6]`
4	$[-Y,\ -X,\ 0]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[7,-10]`
5	$[-X+Y,\ Y,\ 0]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[8,-11]`
6	$[X,\ X-Y,\ 0]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[9,-12]`

Table 3: Wyckoff bond: `12c@2a`

No.	vector	center	mapping
1	$[X,\ Y,\ Z]$	$[0,\ 0,\ z]$	`[1]`
2	$[-Y,\ X-Y,\ Z]$	$[0,\ 0,\ z]$	`[2]`
3	$[-X+Y,\ -X,\ Z]$	$[0,\ 0,\ z]$	`[3]`
4	$[-X,\ -Y,\ Z]$	$[0,\ 0,\ z]$	`[4]`
5	$[Y,\ -X+Y,\ Z]$	$[0,\ 0,\ z]$	`[5]`
6	$[X-Y,\ X,\ Z]$	$[0,\ 0,\ z]$	`[6]`
7	$[-Y,\ -X,\ Z]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[7]`
8	$[-X+Y,\ Y,\ Z]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[8]`
9	$[X,\ X-Y,\ Z]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[9]`
10	$[Y,\ X,\ Z]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[10]`
11	$[X-Y,\ -Y,\ Z]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[11]`
12	$[-X,\ -X+Y,\ Z]$	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[12]`

* Wyckoff site: `4b`, site symmetry: `3..`

Table 4: Wyckoff bond: `4a@4b`

No.	vector	center	mapping
1	$[0,\ 0,\ Z]$	$\left[\frac{1}{3},\ \frac{2}{3},\ z\right]$	`[1,2,3]`

continued ...

Table 4

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

Table 5: Wyckoff bond: `12b@4b`

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

* Wyckoff site: `6c`, site symmetry: `2..`

Table 6: Wyckoff bond: `6a@6c`

No.	vector	center	mapping
1	$[X,\ Y,\ 0]$	$\left[\frac{1}{2},\ 0,\ z\right]$	`[1,-4]`
2	$[-Y,\ X-Y,\ 0]$	$\left[0,\ \frac{1}{2},\ z\right]$	`[2,-5]`
3	$[-X+Y,\ -X,\ 0]$	$\left[\frac{1}{2},\ \frac{1}{2},\ z\right]$	`[3,-6]`
4	$[-Y,\ -X,\ 0]$	$\left[0,\ \frac{1}{2},\ z+\frac{1}{2}\right]$	`[7,-10]`
5	$[-X+Y,\ Y,\ 0]$	$\left[\frac{1}{2},\ 0,\ z+\frac{1}{2}\right]$	`[8,-11]`
6	$[X,\ X-Y,\ 0]$	$\left[\frac{1}{2},\ \frac{1}{2},\ z+\frac{1}{2}\right]$	`[9,-12]`

Table 7: Wyckoff bond: `6b@6c`

No.	vector	center	mapping
1	$[0,\ 0,\ Z]$	$\left[\frac{1}{2},\ 0,\ z\right]$	`[1,4]`
2	$[0,\ 0,\ Z]$	$\left[0,\ \frac{1}{2},\ z\right]$	`[2,5]`
3	$[0,\ 0,\ Z]$	$\left[\frac{1}{2},\ \frac{1}{2},\ z\right]$	`[3,6]`
4	$[0,\ 0,\ Z]$	$\left[0,\ \frac{1}{2},\ z+\frac{1}{2}\right]$	`[7,10]`
5	$[0,\ 0,\ Z]$	$\left[\frac{1}{2},\ 0,\ z+\frac{1}{2}\right]$	`[8,11]`

continued ...

Table 7

No.	vector	center	mapping
6	$[0,\, 0,\, Z]$	$\left[\frac{1}{2},\, \frac{1}{2},\, z+\frac{1}{2}\right]$	[9,12]

Table 8: Wyckoff bond: 12c@6c

No.	vector	center	mapping
1	$[X,\, Y,\, Z]$	$\left[\frac{1}{2},\, 0,\, z\right]$	[1]
2	$[-Y,\, X-Y,\, Z]$	$\left[0,\, \frac{1}{2},\, z\right]$	[2]
3	$[-X+Y,\, -X,\, Z]$	$\left[\frac{1}{2},\, \frac{1}{2},\, z\right]$	[3]
4	$[-X,\, -Y,\, Z]$	$\left[\frac{1}{2},\, 0,\, z\right]$	[4]
5	$[Y,\, -X+Y,\, Z]$	$\left[0,\, \frac{1}{2},\, z\right]$	[5]
6	$[X-Y,\, X,\, Z]$	$\left[\frac{1}{2},\, \frac{1}{2},\, z\right]$	[6]
7	$[-Y,\, -X,\, Z]$	$\left[0,\, \frac{1}{2},\, z+\frac{1}{2}\right]$	[7]
8	$[-X+Y,\, Y,\, Z]$	$\left[\frac{1}{2},\, 0,\, z+\frac{1}{2}\right]$	[8]
9	$[X,\, X-Y,\, Z]$	$\left[\frac{1}{2},\, \frac{1}{2},\, z+\frac{1}{2}\right]$	[9]
10	$[Y,\, X,\, Z]$	$\left[0,\, \frac{1}{2},\, z+\frac{1}{2}\right]$	[10]
11	$[X-Y,\, -Y,\, Z]$	$\left[\frac{1}{2},\, 0,\, z+\frac{1}{2}\right]$	[11]
12	$[-X,\, -X+Y,\, Z]$	$\left[\frac{1}{2},\, \frac{1}{2},\, z+\frac{1}{2}\right]$	[12]

* Wyckoff site: 12d, site symmetry: 1

Table 9: Wyckoff bond: 12a@12d

No.	vector	center	mapping
1	$[X,\, Y,\, Z]$	$[x,\, y,\, z]$	[1]
2	$[-Y,\, X-Y,\, Z]$	$[-y,\, x-y,\, z]$	[2]
3	$[-X+Y,\, -X,\, Z]$	$[-x+y,\, -x,\, z]$	[3]
4	$[-X,\, -Y,\, Z]$	$[-x,\, -y,\, z]$	[4]
5	$[Y,\, -X+Y,\, Z]$	$[y,\, -x+y,\, z]$	[5]
6	$[X-Y,\, X,\, Z]$	$[x-y,\, x,\, z]$	[6]
7	$[-Y,\, -X,\, Z]$	$\left[-y,\, -x,\, z+\frac{1}{2}\right]$	[7]
8	$[-X+Y,\, Y,\, Z]$	$\left[-x+y,\, y,\, z+\frac{1}{2}\right]$	[8]
9	$[X,\, X-Y,\, Z]$	$\left[x,\, x-y,\, z+\frac{1}{2}\right]$	[9]
10	$[Y,\, X,\, Z]$	$\left[y,\, x,\, z+\frac{1}{2}\right]$	[10]
11	$[X-Y,\, -Y,\, Z]$	$\left[x-y,\, -y,\, z+\frac{1}{2}\right]$	[11]
12	$[-X,\, -X+Y,\, Z]$	$\left[-x,\, -x+y,\, z+\frac{1}{2}\right]$	[12]