SG No. 178 D_6^2 $P6_122$ [hexagonal]

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

Table 1: Wyckoff bond: `6a@6a`

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

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

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

Table 3: Wyckoff bond: `12c@6a`

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

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

Table 4: Wyckoff bond: `6a@6b`

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

Table 5: Wyckoff bond: `6b@6b`

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

Table 6: Wyckoff bond: `12c@6b`

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

* Wyckoff site: `12c`, site symmetry: `1`

Table 7: Wyckoff bond: `12a@12c`

No.	vector	center	mapping
1	$[X,\ Y,\ Z]$	$[x,\ y,\ z]$	`[1]`

continued ...

Table 7

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