SG No. 150 D_3^2 $P321$ [trigonal]

* plus set: $+[0,\ 0,\ 0]$
* Wyckoff site: `1a`, site symmetry: `32.`

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

No.	vector	center	mapping
1	$[0,\ 0,\ Z]$	$[0,\ 0,\ 0]$	`[1,2,3,-4,-5,-6]`

Table 2: Wyckoff bond: `3b@1a`

No.	vector	center	mapping
1	$[X,\ -X,\ Z]$	$[0,\ 0,\ 0]$	`[1,-4]`
2	$[X,\ 2X,\ Z]$	$[0,\ 0,\ 0]$	`[2,-6]`
3	$[-2X,\ -X,\ Z]$	$[0,\ 0,\ 0]$	`[3,-5]`

Table 3: Wyckoff bond: `3c@1a`

No.	vector	center	mapping
1	$[X,\ 0,\ 0]$	$[0,\ 0,\ 0]$	`[1,5]`
2	$[0,\ X,\ 0]$	$[0,\ 0,\ 0]$	`[2,4]`
3	$[-X,\ -X,\ 0]$	$[0,\ 0,\ 0]$	`[3,6]`

Table 4: Wyckoff bond: `6d@1a`

No.	vector	center	mapping
1	$[X,\ Y,\ Z]$	$[0,\ 0,\ 0]$	`[1]`
2	$[-Y,\ X-Y,\ Z]$	$[0,\ 0,\ 0]$	`[2]`
3	$[-X+Y,\ -X,\ Z]$	$[0,\ 0,\ 0]$	`[3]`
4	$[Y,\ X,\ -Z]$	$[0,\ 0,\ 0]$	`[4]`
5	$[X-Y,\ -Y,\ -Z]$	$[0,\ 0,\ 0]$	`[5]`
6	$[-X,\ -X+Y,\ -Z]$	$[0,\ 0,\ 0]$	`[6]`

* Wyckoff site: `1b`, site symmetry: `32.`

Table 5: Wyckoff bond: `1a@1b`

No.	vector	center	mapping
1	$[0,\ 0,\ Z]$	$\left[0,\ 0,\ \frac{1}{2}\right]$	`[1,2,3,-4,-5,-6]`

Table 6: Wyckoff bond: `3b@1b`

No.	vector	center	mapping
1	$[X, -X, Z]$	$\left[0, 0, \frac{1}{2}\right]$	`[1,-4]`
2	$[X, 2X, Z]$	$\left[0, 0, \frac{1}{2}\right]$	`[2,-6]`
3	$[-2X, -X, Z]$	$\left[0, 0, \frac{1}{2}\right]$	`[3,-5]`

Table 7: Wyckoff bond: `3c@1b`

No.	vector	center	mapping
1	$[X, 0, 0]$	$\left[0, 0, \frac{1}{2}\right]$	`[1,5]`
2	$[0, X, 0]$	$\left[0, 0, \frac{1}{2}\right]$	`[2,4]`
3	$[-X, -X, 0]$	$\left[0, 0, \frac{1}{2}\right]$	`[3,6]`

Table 8: Wyckoff bond: `6d@1b`

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

* Wyckoff site: `2c`, site symmetry: `3..`

Table 9: Wyckoff bond: `2a@2c`

No.	vector	center	mapping
1	$[0, 0, Z]$	$[0, 0, z]$	`[1,2,3]`
2	$[0, 0, -Z]$	$[0, 0, -z]$	`[4,5,6]`

Table 10: Wyckoff bond: `6b@2c`

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	$[Y, X, -Z]$	$[0, 0, -z]$	`[4]`
5	$[X-Y, -Y, -Z]$	$[0, 0, -z]$	`[5]`

continued ...

Table 10

No.	vector	center	mapping
6	$[-X, -X+Y, -Z]$	$[0, 0, -z]$	`[6]`

* Wyckoff site: `2d`, site symmetry: `3..`

Table 11: Wyckoff bond: `2a@2d`

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

Table 12: Wyckoff bond: `6b@2d`

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	$[Y, X, -Z]$	$\left[\frac{2}{3}, \frac{1}{3}, -z\right]$	`[4]`
5	$[X-Y, -Y, -Z]$	$\left[\frac{2}{3}, \frac{1}{3}, -z\right]$	`[5]`
6	$[-X, -X+Y, -Z]$	$\left[\frac{2}{3}, \frac{1}{3}, -z\right]$	`[6]`

* Wyckoff site: `3e`, site symmetry: `.2.`

Table 13: Wyckoff bond: `3a@3e`

No.	vector	center	mapping
1	$[X, 2X, Z]$	$[x, 0, 0]$	`[1,-5]`
2	$[-2X, -X, Z]$	$[0, x, 0]$	`[2,-4]`
3	$[X, -X, Z]$	$[-x, -x, 0]$	`[3,-6]`

Table 14: Wyckoff bond: `3b@3e`

No.	vector	center	mapping
1	$[X, 0, 0]$	$[x, 0, 0]$	`[1,5]`
2	$[0, X, 0]$	$[0, x, 0]$	`[2,4]`
3	$[-X, -X, 0]$	$[-x, -x, 0]$	`[3,6]`

Table 15: Wyckoff bond: `6c@3e`

No.	vector	center	mapping
1	$[X, Y, Z]$	$[x, 0, 0]$	`[1]`
2	$[-Y, X-Y, Z]$	$[0, x, 0]$	`[2]`
3	$[-X+Y, -X, Z]$	$[-x, -x, 0]$	`[3]`
4	$[Y, X, -Z]$	$[0, x, 0]$	`[4]`
5	$[X-Y, -Y, -Z]$	$[x, 0, 0]$	`[5]`
6	$[-X, -X+Y, -Z]$	$[-x, -x, 0]$	`[6]`

* Wyckoff site: `3f`, site symmetry: `.2.`

Table 16: Wyckoff bond: `3a@3f`

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

Table 17: Wyckoff bond: `3b@3f`

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

Table 18: Wyckoff bond: `6c@3f`

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

* Wyckoff site: `6g`, site symmetry: `1`

Table 19: Wyckoff bond: `6a@6g`

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	$[Y,\ X,\ -Z]$	$[y,\ x,\ -z]$	`[4]`
5	$[X-Y,\ -Y,\ -Z]$	$[x-y,\ -y,\ -z]$	`[5]`
6	$[-X,\ -X+Y,\ -Z]$	$[-x,\ -x+y,\ -z]$	`[6]`