SG No. 155 D_3^7 $R32$ [trigonal]

* plus set: $+[0,\ 0,\ 0]$, $+\left[\frac{2}{3},\ \frac{1}{3},\ \frac{1}{3}\right]$, $+\left[\frac{1}{3},\ \frac{2}{3},\ \frac{2}{3}\right]$
* Wyckoff site: `3a`, site symmetry: `32`

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

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

Table 2: Wyckoff bond: `9b@3a`

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: `9c@3a`

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: `18d@3a`

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: `3b`, site symmetry: `32`

Table 5: Wyckoff bond: `3a@3b`

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: `9b@3b`

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: `9c@3b`

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: `18d@3b`

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: `6c`, site symmetry: `3.`

Table 9: Wyckoff bond: `6a@6c`

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: `18b@6c`

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: `9d`, site symmetry: `.2`

Table 11: Wyckoff bond: `9a@9d`

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 12: Wyckoff bond: `9b@9d`

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 13: Wyckoff bond: `18c@9d`

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: `9e`, site symmetry: `.2`

Table 14: Wyckoff bond: `9a@9e`

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 15: Wyckoff bond: `9b@9e`

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 16: Wyckoff bond: `18c@9e`

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: `18f`, site symmetry: `1`

Table 17: Wyckoff bond: `18a@18f`

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]`