SG No. 103 C_{4v}^{5} $P4cc$ [tetragonal]

* plus set: $+[0,\ 0,\ 0]$
* Wyckoff site: `2a`, site symmetry: `4..`

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

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

Table 2: Wyckoff bond: `4b@2a`

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

Table 3: Wyckoff bond: `8c@2a`

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

* Wyckoff site: `2b`, site symmetry: `4..`

Table 4: Wyckoff bond: `2a@2b`

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

Table 5: Wyckoff bond: `4b@2b`

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

Table 6: Wyckoff bond: `8c@2b`

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

* Wyckoff site: `4c`, site symmetry: `2..`

Table 7: Wyckoff bond: `4a@4c`

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

Table 8: Wyckoff bond: `4b@4c`

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

Table 9: Wyckoff bond: `8c@4c`

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

* Wyckoff site: `8d`, site symmetry: `1`

Table 10: Wyckoff bond: `8a@8d`

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