SG No. 132 D_{4h}^{10} $P4_2/mcm$ [tetragonal]

* plus set: + [0, 0, 0]

Table 1: Wyckoff site: 2a, site symmetry: m.mm

No.	position	mapping
1	[0, 0, 0]	[1,2,7,8,9,10,15,16]
2	$\left[0,\ 0,\ \frac{1}{2}\right]$	[3,4,5,6,11,12,13,14]

Table 2: Wyckoff site: 2b, site symmetry: -42m

No.	position	mapping
1	$\left[0,\ 0,\ \frac{1}{4}\right]$	[1,2,5,6,11,12,15,16]
2	$\left[0,\ 0,\ \frac{3}{4}\right]$	[3,4,7,8,9,10,13,14]

Table 3: Wyckoff site: 2c, site symmetry: m.mm

No.	position	mapping
1	$\left[\frac{1}{2},\ \frac{1}{2},\ 0\right]$	[1,2,7,8,9,10,15,16]
2	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2}\right]$	[3,4,5,6,11,12,13,14]

Table 4: Wyckoff site: 2d, site symmetry: -42m

No.	position	mapping
1	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{4}\right]$	[1,2,5,6,11,12,15,16]
2	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{3}{4}\right]$	[3,4,7,8,9,10,13,14]

Table 5: Wyckoff site: 4e, site symmetry: 222.

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ \frac{1}{4}\right]$	[1,2,5,6]
2	$\left[\frac{1}{2},\ 0,\ \frac{3}{4}\right]$	[3,4,7,8]
3	$\left[0,\ \frac{1}{2},\ \frac{3}{4}\right]$	[9,10,13,14]
4	$\left[\frac{1}{2},\ 0,\ \frac{1}{4}\right]$	[11,12,15,16]

Table 6: Wyckoff site: `4f`, site symmetry: `2/m..`

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ 0\right]$	`[1,2,9,10]`
2	$\left[\frac{1}{2},\ 0,\ \frac{1}{2}\right]$	`[3,4,11,12]`
3	$\left[0,\ \frac{1}{2},\ \frac{1}{2}\right]$	`[5,6,13,14]`
4	$\left[\frac{1}{2},\ 0,\ 0\right]$	`[7,8,15,16]`

Table 7: Wyckoff site: `4g`, site symmetry: `2.mm`

No.	position	mapping
1	$[0,\ 0,\ z]$	`[1,2,15,16]`
2	$\left[0,\ 0,\ z+\frac{1}{2}\right]$	`[3,4,13,14]`
3	$\left[0,\ 0,\ \frac{1}{2}-z\right]$	`[5,6,11,12]`
4	$[0,\ 0,\ -z]$	`[7,8,9,10]`

Table 8: Wyckoff site: `4h`, site symmetry: `2.mm`

No.	position	mapping
1	$\left[\frac{1}{2},\ \frac{1}{2},\ z\right]$	`[1,2,15,16]`
2	$\left[\frac{1}{2},\ \frac{1}{2},\ z+\frac{1}{2}\right]$	`[3,4,13,14]`
3	$\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2}-z\right]$	`[5,6,11,12]`
4	$\left[\frac{1}{2},\ \frac{1}{2},\ -z\right]$	`[7,8,9,10]`

Table 9: Wyckoff site: `4i`, site symmetry: `m.2m`

No.	position	mapping
1	$[x,\ x,\ 0]$	`[1,7,10,16]`
2	$[-x,\ -x,\ 0]$	`[2,8,9,15]`
3	$\left[-x,\ x,\ \frac{1}{2}\right]$	`[3,5,12,14]`
4	$\left[x,\ -x,\ \frac{1}{2}\right]$	`[4,6,11,13]`

Table 10: Wyckoff site: `4j`, site symmetry: `m.2m`

No.	position	mapping
1	$\left[x,\ x,\ \frac{1}{2}\right]$	`[1,7,10,16]`
2	$\left[-x,\ -x,\ \frac{1}{2}\right]$	`[2,8,9,15]`
3	$[-x,\ x,\ 0]$	`[3,5,12,14]`
4	$[x,\ -x,\ 0]$	`[4,6,11,13]`

Table 11: Wyckoff site: `8k`, site symmetry: `2..`

No.	position	mapping
1	$\left[0,\ \frac{1}{2},\ z\right]$	`[1,2]`
2	$\left[\frac{1}{2},\ 0,\ z+\frac{1}{2}\right]$	`[3,4]`
3	$\left[0,\ \frac{1}{2},\ \frac{1}{2}-z\right]$	`[5,6]`
4	$\left[\frac{1}{2},\ 0,\ -z\right]$	`[7,8]`
5	$\left[0,\ \frac{1}{2},\ -z\right]$	`[9,10]`
6	$\left[\frac{1}{2},\ 0,\ \frac{1}{2}-z\right]$	`[11,12]`
7	$\left[0,\ \frac{1}{2},\ z+\frac{1}{2}\right]$	`[13,14]`
8	$\left[\frac{1}{2},\ 0,\ z\right]$	`[15,16]`

Table 12: Wyckoff site: `8l`, site symmetry: `.2.`

No.	position	mapping
1	$\left[x,\ 0,\ \frac{1}{4}\right]$	`[1,6]`
2	$\left[-x,\ 0,\ \frac{1}{4}\right]$	`[2,5]`
3	$\left[0,\ x,\ \frac{3}{4}\right]$	`[3,7]`
4	$\left[0,\ -x,\ \frac{3}{4}\right]$	`[4,8]`
5	$\left[-x,\ 0,\ \frac{3}{4}\right]$	`[9,14]`
6	$\left[x,\ 0,\ \frac{3}{4}\right]$	`[10,13]`
7	$\left[0,\ -x,\ \frac{1}{4}\right]$	`[11,15]`
8	$\left[0,\ x,\ \frac{1}{4}\right]$	`[12,16]`

Table 13: Wyckoff site: `8m`, site symmetry: `.2.`

No.	position	mapping
1	$\left[x,\ \frac{1}{2},\ \frac{1}{4}\right]$	`[1,6]`
2	$\left[-x,\ \frac{1}{2},\ \frac{1}{4}\right]$	`[2,5]`
3	$\left[\frac{1}{2},\ x,\ \frac{3}{4}\right]$	`[3,7]`
4	$\left[\frac{1}{2},\ -x,\ \frac{3}{4}\right]$	`[4,8]`
5	$\left[-x,\ \frac{1}{2},\ \frac{3}{4}\right]$	`[9,14]`
6	$\left[x,\ \frac{1}{2},\ \frac{3}{4}\right]$	`[10,13]`
7	$\left[\frac{1}{2},\ -x,\ \frac{1}{4}\right]$	`[11,15]`
8	$\left[\frac{1}{2},\ x,\ \frac{1}{4}\right]$	`[12,16]`

Table 14: Wyckoff site: `8n`, site symmetry: `m..`

No.	position	mapping
1	$[x,\ y,\ 0]$	`[1,10]`
2	$[-x,\ -y,\ 0]$	`[2,9]`
3	$\left[-y,\ x,\ \frac{1}{2}\right]$	`[3,12]`

continued ...

Table 14

No.	position	mapping
4	$\left[y,\, -x,\, \frac{1}{2}\right]$	`[4,11]`
5	$\left[-x,\, y,\, \frac{1}{2}\right]$	`[5,14]`
6	$\left[x,\, -y,\, \frac{1}{2}\right]$	`[6,13]`
7	$[y,\, x,\, 0]$	`[7,16]`
8	$[-y,\, -x,\, 0]$	`[8,15]`

Table 15: Wyckoff site: `8o`, site symmetry: `..m`

No.	position	mapping
1	$[x,\, x,\, z]$	`[1,16]`
2	$[-x,\, -x,\, z]$	`[2,15]`
3	$\left[-x,\, x,\, z+\frac{1}{2}\right]$	`[3,14]`
4	$\left[x,\, -x,\, z+\frac{1}{2}\right]$	`[4,13]`
5	$\left[-x,\, x,\, \frac{1}{2}-z\right]$	`[5,12]`
6	$\left[x,\, -x,\, \frac{1}{2}-z\right]$	`[6,11]`
7	$[x,\, x,\, -z]$	`[7,10]`
8	$[-x,\, -x,\, -z]$	`[8,9]`

Table 16: Wyckoff site: `16p`, site symmetry: `1`

No.	position	mapping
1	$[x,\, y,\, z]$	`[1]`
2	$[-x,\, -y,\, z]$	`[2]`
3	$\left[-y,\, x,\, z+\frac{1}{2}\right]$	`[3]`
4	$\left[y,\, -x,\, z+\frac{1}{2}\right]$	`[4]`
5	$\left[-x,\, y,\, \frac{1}{2}-z\right]$	`[5]`
6	$\left[x,\, -y,\, \frac{1}{2}-z\right]$	`[6]`
7	$[y,\, x,\, -z]$	`[7]`
8	$[-y,\, -x,\, -z]$	`[8]`
9	$[-x,\, -y,\, -z]$	`[9]`
10	$[x,\, y,\, -z]$	`[10]`
11	$\left[y,\, -x,\, \frac{1}{2}-z\right]$	`[11]`
12	$\left[-y,\, x,\, \frac{1}{2}-z\right]$	`[12]`
13	$\left[x,\, -y,\, z+\frac{1}{2}\right]$	`[13]`
14	$\left[-x,\, y,\, z+\frac{1}{2}\right]$	`[14]`
15	$[-y,\, -x,\, z]$	`[15]`
16	$[y,\, x,\, z]$	`[16]`