# MSG No. 11.57 $P_C2_1/m$ [ Type IV, monoclinic ]

Table 1: Wyckoff site: `2a`, site symmetry: `2'/m`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[\frac{3}{4}, \frac{3}{4}, 0\right]$ | `[1,4,6,7]` |
| 2 | $\left[\frac{1}{4}, \frac{1}{4}, 0\right]$ | `[2,3,5,8]` |

Table 2: Wyckoff site: `2b`, site symmetry: `2'/m`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[\frac{3}{4}, \frac{1}{4}, 0\right]$ | `[1,4,6,7]` |
| 2 | $\left[\frac{1}{4}, \frac{3}{4}, 0\right]$ | `[2,3,5,8]` |

Table 3: Wyckoff site: `2c`, site symmetry: `2'/m`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[\frac{3}{4}, \frac{3}{4}, \frac{1}{2}\right]$ | `[1,4,6,7]` |
| 2 | $\left[\frac{1}{4}, \frac{1}{4}, \frac{1}{2}\right]$ | `[2,3,5,8]` |

Table 4: Wyckoff site: `2d`, site symmetry: `2'/m`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[\frac{3}{4}, \frac{1}{4}, \frac{1}{2}\right]$ | `[1,4,6,7]` |
| 2 | $\left[\frac{1}{4}, \frac{3}{4}, \frac{1}{2}\right]$ | `[2,3,5,8]` |

Table 5: Wyckoff site: `4e`, site symmetry: `-1`

| No. | position | mapping |
|---|---|---|
| 1 | $[0, 0, 0]$ | `[1,3]` |
| 2 | $\left[0, \frac{1}{2}, 0\right]$ | `[2,4]` |
| 3 | $\left[\frac{1}{2}, \frac{1}{2}, 0\right]$ | `[5,7]` |
| 4 | $\left[\frac{1}{2}, 0, 0\right]$ | `[6,8]` |

Table 6: Wyckoff site: `4f`, site symmetry: `-1`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[0,\ 0,\ \frac{1}{2}\right]$ | `[1,3]` |
| 2 | $\left[0,\ \frac{1}{2},\ \frac{1}{2}\right]$ | `[2,4]` |
| 3 | $\left[\frac{1}{2},\ \frac{1}{2},\ \frac{1}{2}\right]$ | `[5,7]` |
| 4 | $\left[\frac{1}{2},\ 0,\ \frac{1}{2}\right]$ | `[6,8]` |

Table 7: Wyckoff site: `4g`, site symmetry: `2'`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[\frac{3}{4},\ y,\ 0\right]$ | `[1,6]` |
| 2 | $\left[\frac{1}{4},\ y+\frac{1}{2},\ 0\right]$ | `[2,5]` |
| 3 | $\left[\frac{1}{4},\ -y,\ 0\right]$ | `[3,8]` |
| 4 | $\left[\frac{3}{4},\ \frac{1}{2}-y,\ 0\right]$ | `[4,7]` |

Table 8: Wyckoff site: `4h`, site symmetry: `2'`

| No. | position | mapping |
|---|---|---|
| 1 | $\left[\frac{3}{4},\ y,\ \frac{1}{2}\right]$ | `[1,6]` |
| 2 | $\left[\frac{1}{4},\ y+\frac{1}{2},\ \frac{1}{2}\right]$ | `[2,5]` |
| 3 | $\left[\frac{1}{4},\ -y,\ \frac{1}{2}\right]$ | `[3,8]` |
| 4 | $\left[\frac{3}{4},\ \frac{1}{2}-y,\ \frac{1}{2}\right]$ | `[4,7]` |

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

| No. | position | mapping |
|---|---|---|
| 1 | $\left[x,\ \frac{3}{4},\ z\right]$ | `[1,4]` |
| 2 | $\left[-x,\ \frac{1}{4},\ -z\right]$ | `[2,3]` |
| 3 | $\left[x+\frac{1}{2},\ \frac{1}{4},\ z\right]$ | `[5,8]` |
| 4 | $\left[\frac{1}{2}-x,\ \frac{3}{4},\ -z\right]$ | `[6,7]` |

Table 10: Wyckoff site: `8j`, site symmetry: `1`

| No. | position | mapping |
|---|---|---|
| 1 | $[x,\ y,\ z]$ | `[1]` |
| 2 | $\left[-x,\ y+\frac{1}{2},\ -z\right]$ | `[2]` |
| 3 | $[-x,\ -y,\ -z]$ | `[3]` |
| 4 | $\left[x,\ \frac{1}{2}-y,\ z\right]$ | `[4]` |

*continued ...*

Table 10

| No. | position | mapping |
|---|---|---|
| 5 | $\left[x+\frac{1}{2},\, y+\frac{1}{2},\, z\right]$ | [5] |
| 6 | $\left[\frac{1}{2}-x,\, y,\, -z\right]$ | [6] |
| 7 | $\left[\frac{1}{2}-x,\, \frac{1}{2}-y,\, -z\right]$ | [7] |
| 8 | $\left[x+\frac{1}{2},\, -y,\, z\right]$ | [8] |