

MSG No. 54.338 *Pccal'* [ Type II, orthorhombic ]

Table 1: Wyckoff site: 4a, site symmetry: -11'

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

Table 2: Wyckoff site: 4b, site symmetry: -11'

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

Table 3: Wyckoff site: 4c, site symmetry: .2.1'

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

Table 4: Wyckoff site: 4d, site symmetry: ..21'

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

Table 5: Wyckoff site: 4e, site symmetry: ..21'

| No. | position                                    | mapping     |
|-----|---|-------------|
| 1   | [\frac{1}{4}, \frac{1}{2}, z]               | [1,4,9,12]  |
| 2   | [\frac{3}{4}, \frac{1}{2}, \frac{1}{2} - z] | [2,3,10,11] |

*continued ...*

Table 5

| No. | position                                      | mapping     |
|-----|---|-------------|
| 3   | $[\frac{3}{4}, \frac{1}{2}, -z]$              | [5,8,13,16] |
| 4   | $[\frac{1}{4}, \frac{1}{2}, z + \frac{1}{2}]$ | [6,7,14,15] |

Table 6: Wyckoff site: 8f, site symmetry: 11'

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