MSG No. 148.19 $R\bar{3}'$ [Type III, trigonal]

Table 1: Wyckoff site: `3a`, site symmetry: `-3'..`

No.	position	mapping
1	$[0, 0, 0]$	`[1,2,3,4,5,6]`
2	$\left[\frac{2}{3}, \frac{1}{3}, \frac{1}{3}\right]$	`[7,8,9,10,11,12]`
3	$\left[\frac{1}{3}, \frac{2}{3}, \frac{2}{3}\right]$	`[13,14,15,16,17,18]`

Table 2: Wyckoff site: `3b`, site symmetry: `-3'..`

No.	position	mapping
1	$\left[0, 0, \frac{1}{2}\right]$	`[1,2,3,4,5,6]`
2	$\left[\frac{2}{3}, \frac{1}{3}, \frac{5}{6}\right]$	`[7,8,9,10,11,12]`
3	$\left[\frac{1}{3}, \frac{2}{3}, \frac{1}{6}\right]$	`[13,14,15,16,17,18]`

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

No.	position	mapping
1	$[0, 0, z]$	`[1,2,3]`
2	$[0, 0, -z]$	`[4,5,6]`
3	$\left[\frac{2}{3}, \frac{1}{3}, z + \frac{1}{3}\right]$	`[7,8,9]`
4	$\left[\frac{2}{3}, \frac{1}{3}, \frac{1}{3} - z\right]$	`[10,11,12]`
5	$\left[\frac{1}{3}, \frac{2}{3}, z + \frac{2}{3}\right]$	`[13,14,15]`
6	$\left[\frac{1}{3}, \frac{2}{3}, \frac{2}{3} - z\right]$	`[16,17,18]`

Table 4: Wyckoff site: `9d`, site symmetry: `-1'`

No.	position	mapping
1	$\left[\frac{1}{2}, 0, \frac{1}{2}\right]$	`[1,4]`
2	$\left[0, \frac{1}{2}, \frac{1}{2}\right]$	`[2,5]`
3	$\left[\frac{1}{2}, \frac{1}{2}, \frac{1}{2}\right]$	`[3,6]`
4	$\left[\frac{1}{6}, \frac{1}{3}, \frac{5}{6}\right]$	`[7,10]`
5	$\left[\frac{2}{3}, \frac{5}{6}, \frac{5}{6}\right]$	`[8,11]`
6	$\left[\frac{1}{6}, \frac{5}{6}, \frac{5}{6}\right]$	`[9,12]`
7	$\left[\frac{5}{6}, \frac{2}{3}, \frac{1}{6}\right]$	`[13,16]`
8	$\left[\frac{1}{3}, \frac{1}{6}, \frac{1}{6}\right]$	`[14,17]`
9	$\left[\frac{5}{6}, \frac{1}{6}, \frac{1}{6}\right]$	`[15,18]`

Table 5: Wyckoff site: `9e`, site symmetry: `-1'`

No.	position	mapping
1	$\left[\frac{1}{2}, 0, 0\right]$	`[1,4]`
2	$\left[0, \frac{1}{2}, 0\right]$	`[2,5]`
3	$\left[\frac{1}{2}, \frac{1}{2}, 0\right]$	`[3,6]`
4	$\left[\frac{1}{6}, \frac{1}{3}, \frac{1}{3}\right]$	`[7,10]`
5	$\left[\frac{2}{3}, \frac{5}{6}, \frac{1}{3}\right]$	`[8,11]`
6	$\left[\frac{1}{6}, \frac{5}{6}, \frac{1}{3}\right]$	`[9,12]`
7	$\left[\frac{5}{6}, \frac{2}{3}, \frac{2}{3}\right]$	`[13,16]`
8	$\left[\frac{1}{3}, \frac{1}{6}, \frac{2}{3}\right]$	`[14,17]`
9	$\left[\frac{5}{6}, \frac{1}{6}, \frac{2}{3}\right]$	`[15,18]`

Table 6: Wyckoff site: `18f`, site symmetry: `1`

No.	position	mapping
1	$[x, y, z]$	`[1]`
2	$[-y, x-y, z]$	`[2]`
3	$[-x+y, -x, z]$	`[3]`
4	$[-x, -y, -z]$	`[4]`
5	$[y, -x+y, -z]$	`[5]`
6	$[x-y, x, -z]$	`[6]`
7	$\left[x+\frac{2}{3}, y+\frac{1}{3}, z+\frac{1}{3}\right]$	`[7]`
8	$\left[\frac{2}{3}-y, x-y+\frac{1}{3}, z+\frac{1}{3}\right]$	`[8]`
9	$\left[-x+y+\frac{2}{3}, \frac{1}{3}-x, z+\frac{1}{3}\right]$	`[9]`
10	$\left[\frac{2}{3}-x, \frac{1}{3}-y, \frac{1}{3}-z\right]$	`[10]`
11	$\left[y+\frac{2}{3}, -x+y+\frac{1}{3}, \frac{1}{3}-z\right]$	`[11]`
12	$\left[x-y+\frac{2}{3}, x+\frac{1}{3}, \frac{1}{3}-z\right]$	`[12]`
13	$\left[x+\frac{1}{3}, y+\frac{2}{3}, z+\frac{2}{3}\right]$	`[13]`
14	$\left[\frac{1}{3}-y, x-y+\frac{2}{3}, z+\frac{2}{3}\right]$	`[14]`
15	$\left[-x+y+\frac{1}{3}, \frac{2}{3}-x, z+\frac{2}{3}\right]$	`[15]`
16	$\left[\frac{1}{3}-x, \frac{2}{3}-y, \frac{2}{3}-z\right]$	`[16]`
17	$\left[y+\frac{1}{3}, -x+y+\frac{2}{3}, \frac{2}{3}-z\right]$	`[17]`
18	$\left[x-y+\frac{1}{3}, x+\frac{2}{3}, \frac{2}{3}-z\right]$	`[18]`