

$P\bar{4}$

S_4^1

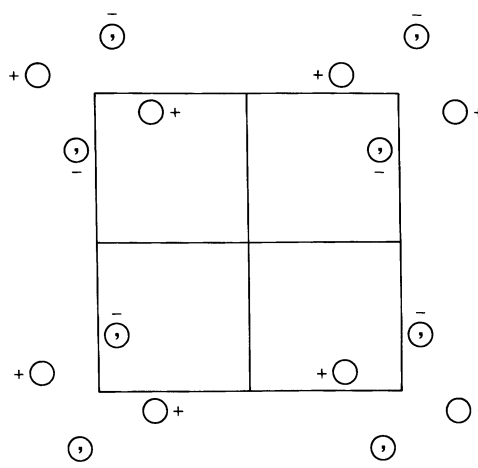
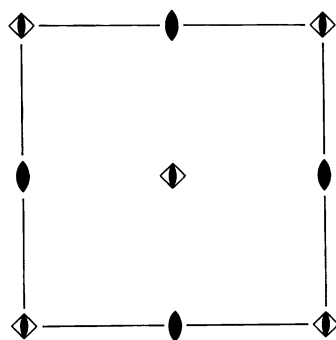
$\bar{4}$

Tetragonal

No. 81

$P\bar{4}$

Patterson symmetry $P4/m$



Origin at $\bar{4}$

Asymmetric unit $0 \leq x \leq \frac{1}{2}; 0 \leq y \leq \frac{1}{2}; 0 \leq z \leq 1$

Symmetry operations

(1) 1 (2) $2_{0,0,z}$ (3) $\bar{4}^+_{0,0,z}; 0,0,0$ (4) $\bar{4}^-_{0,0,z}; 0,0,0$

Generators selected (1); $t(1,0,0); t(0,1,0); t(0,0,1); (2); (3)$

Positions

Multiplicity, Wyckoff letter, Site symmetry	Coordinates	Reflection conditions
4 <i>h</i> 1	(1) x,y,z (2) \bar{x},\bar{y},z (3) y,\bar{x},\bar{z} (4) \bar{y},x,\bar{z}	General: no conditions Special: $hk0: h+k=2n$
2 <i>g</i> 2..	$0, \frac{1}{2}, z$ $\frac{1}{2}, 0, \bar{z}$	no extra conditions
2 <i>f</i> 2..	$\frac{1}{2}, \frac{1}{2}, z$ $\frac{1}{2}, \frac{1}{2}, \bar{z}$	no extra conditions
2 <i>e</i> 2..	$0, 0, z$ $0, 0, \bar{z}$	no extra conditions
1 <i>d</i> $\bar{4}$..	$\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$	no extra conditions
1 <i>c</i> $\bar{4}$..	$\frac{1}{2}, \frac{1}{2}, 0$	no extra conditions
1 <i>b</i> $\bar{4}$..	$0, 0, \frac{1}{2}$	no extra conditions
1 <i>a</i> $\bar{4}$..	$0, 0, 0$	no extra conditions

Symmetry of special projections

Along $[001]$ $p4$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
 Origin at $0, 0, z$

Along $[100]$ $p1m1$
 $\mathbf{a}' = \mathbf{b}$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, 0, 0$

Along $[110]$ $p1m1$
 $\mathbf{a}' = \frac{1}{2}(-\mathbf{a} + \mathbf{b})$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, x, 0$