

Tetragonal

4

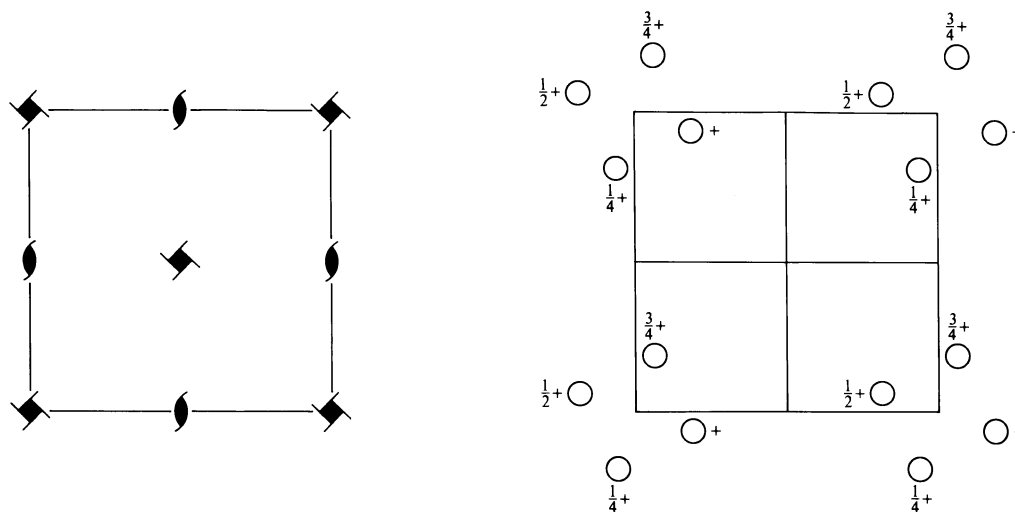
C_4^4

$P4_3$

Patterson symmetry $P4/m$

$P4_3$

No. 78



Origin on 4_3

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

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>a</i> 1	(1) x, y, z (2) $\bar{x}, \bar{y}, z + \frac{1}{2}$ (3) $\bar{y}, x, z + \frac{3}{4}$ (4) $y, \bar{x}, z + \frac{1}{4}$	General: $00l: l = 4n$

Symmetry of special projections

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

Along $[100]$ $p1g1$
 $\mathbf{a}' = \mathbf{b}$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, 0, 0$

Along $[110]$ $p1g1$
 $\mathbf{a}' = \frac{1}{2}(-\mathbf{a} + \mathbf{b})$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, x, 0$