

Orthorhombic

222

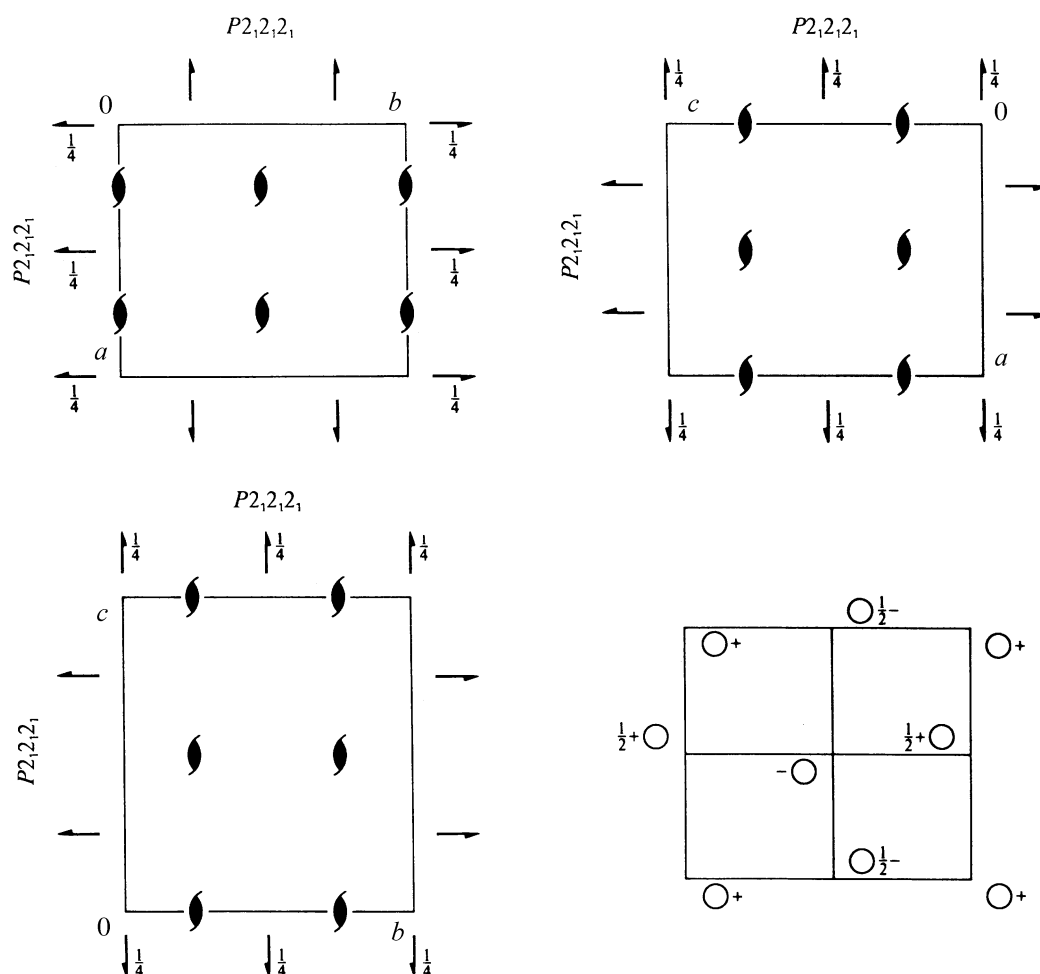
D_2^4

$P2_12_12_1$

Patterson symmetry $Pmmm$

$P2_12_12_1$

No. 19



Origin at midpoint of three non-intersecting pairs of parallel 2_1 axes

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) $2(0, 0, \frac{1}{2}) \frac{1}{4}, 0, z$ (3) $2(0, \frac{1}{2}, 0) 0, y, \frac{1}{4}$ (4) $2(\frac{1}{2}, 0, 0) x, \frac{1}{4}, 0$

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 a 1

(1) x, y, z

(2) $\bar{x} + \frac{1}{2}, \bar{y}, z + \frac{1}{2}$

(3) $\bar{x}, y + \frac{1}{2}, \bar{z} + \frac{1}{2}$

(4) $x + \frac{1}{2}, \bar{y} + \frac{1}{2}, \bar{z}$

General:

$h00: h = 2n$

$0k0: k = 2n$

$00l: l = 2n$

Symmetry of special projections

Along $[001]$ $p2gg$

$\mathbf{a}' = \mathbf{a} \quad \mathbf{b}' = \mathbf{b}$

Origin at $\frac{1}{4}, 0, z$

Along $[100]$ $p2gg$

$\mathbf{a}' = \mathbf{b} \quad \mathbf{b}' = \mathbf{c}$

Origin at $x, \frac{1}{4}, 0$

Along $[010]$ $p2gg$

$\mathbf{a}' = \mathbf{c} \quad \mathbf{b}' = \mathbf{a}$

Origin at $0, y, \frac{1}{4}$