

$pb2_1a$

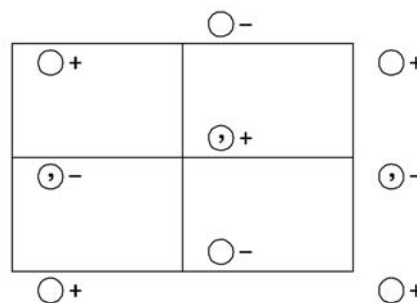
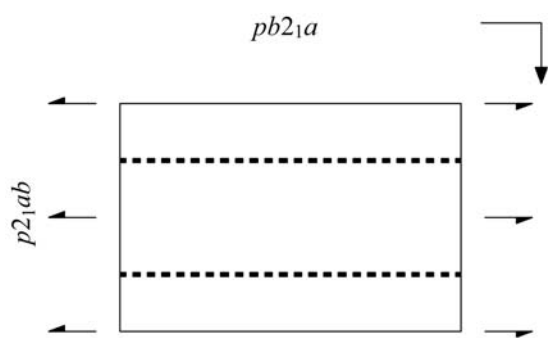
$m2m$

Orthorhombic/Rectangular

No. 33

$pb2_1a$

Patterson symmetry $pmmm$



Origin on 12_1a

Asymmetric unit $0 \leq x \leq \frac{1}{4}; 0 \leq y \leq 1$

Symmetry operations

- (1) 1 (2) $2(0, \frac{1}{2}, 0) \quad 0, y, 0$ (3) $a \quad x, y, 0$ (4) $b \quad \frac{1}{4}, y, z$
 (1|0, 0, 0) (2_y|0, $\frac{1}{2}$, 0) (m_z | $\frac{1}{2}$, 0, 0) (m_x | $\frac{1}{2}$, $\frac{1}{2}$, 0)

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

Positions

Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
					General:
4 a 1	(1) x, y, z	(2) $\bar{x}, y + \frac{1}{2}, \bar{z}$	(3) $x + \frac{1}{2}, y, \bar{z}$	(4) $\bar{x} + \frac{1}{2}, y + \frac{1}{2}, z$	$hk: h = 2n$ $h0: h = 2n$ $0k: k = 2n$

Symmetry of special projections

Along [001] $p1g1$
 $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
 Origin at 0, 0, z

Along [100] $\cancel{p1m}$
 $\mathbf{a}' = \frac{1}{2}\mathbf{b}$
 Origin at $x, 0, 0$

Along [010] $\cancel{p2mg}$
 $\mathbf{a}' = \mathbf{a}$
 Origin at 0, $y, 0$

Maximal non-isotypic subgroups

I [2] $pb11(12)$ 1; 4
 [2] $p12_11(p2_111, 9)$ 1; 2
 [2] $p11a(5)$ 1; 3

IIa none

IIb none

Maximal isotypic subgroups of lowest index

IIc [3] $pb2_1a(\mathbf{a}' = 3\mathbf{a})(33)$; [3] $pb2_1a(\mathbf{b}' = 3\mathbf{b})(33)$

Minimal non-isotypic supergroups

I [2] $pbaa(43)$; [2] $pbma(45)$

II [2] $cm2e(36)$; [2] $p2_1am(\mathbf{a}' = \frac{1}{2}\mathbf{a})(pb2_1m, 29)$; [2] $pm2a(\mathbf{b}' = \frac{1}{2}\mathbf{b})(31)$