

$pm2_1b$

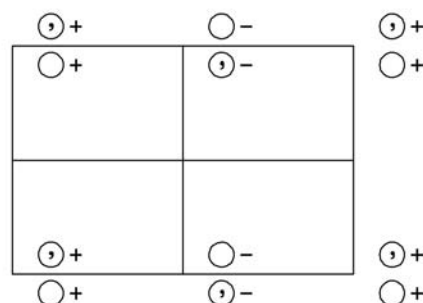
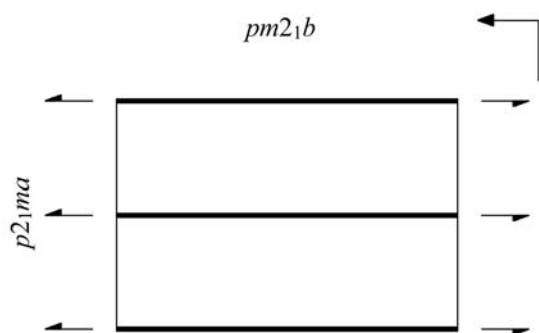
$m2m$

Orthorhombic/Rectangular

No. 28

$pm2_1b$

Patterson symmetry  $pmmm$



Origin on  $m2_1b$

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

Symmetry operations

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

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

**Positions**

Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
4 c 1	(1) $x, y, z$	(2) $\bar{x}, y + \frac{1}{2}, \bar{z}$	(3) $x, y + \frac{1}{2}, \bar{z}$	(4) $\bar{x}, y, z$	General: $hk: k = 2n$ $0k: k = 2n$ Special: no extra conditions
2 b $m..$	$\frac{1}{2}, y, z$	$\frac{1}{2}, y + \frac{1}{2}, \bar{z}$			
2 a $m..$	$0, y, z$	$0, y + \frac{1}{2}, \bar{z}$			

**Symmetry of special projections**

Along [001]  $p1m1$   
 $\mathbf{a}' = \mathbf{a}$   $\mathbf{b}' = \frac{1}{2}\mathbf{b}$   
 Origin at  $0, 0, z$

Along [100]  $\not{p}11g$   
 $\mathbf{a}' = \mathbf{b}$   
 Origin at  $x, 0, 0$

Along [010]  $\not{p}2mm$   
 $\mathbf{a}' = \mathbf{a}$   
 Origin at  $0, y, 0$

**Maximal non-isotypic subgroups**

**I** [2]  $pm11$  (11) 1; 4  
 [2]  $p12_11$  ( $p2_111, 9$ ) 1; 2  
 [2]  $p11b$  ( $p11a, 5$ ) 1; 3

**IIa** none

**IIb** [2]  $pm2_1n$  ( $\mathbf{a}' = 2\mathbf{a}$ ) (32)

**Maximal isotypic subgroups of lowest index**

**IIc** [2]  $pm2_1b$  ( $\mathbf{a}' = 2\mathbf{a}$ ) (28); [3]  $pm2_1b$  ( $\mathbf{b}' = 3\mathbf{b}$ ) (28)

**Minimal non-isotypic supergroups**

**I** [2]  $pmma$  (41); [2]  $pbma$  (45)

**II** [2]  $cm2m$  (35); [2]  $cm2e$  (36); [2]  $pm2m$  ( $\mathbf{b}' = \frac{1}{2}\mathbf{b}$ ) (27)