

$pb2_1m$

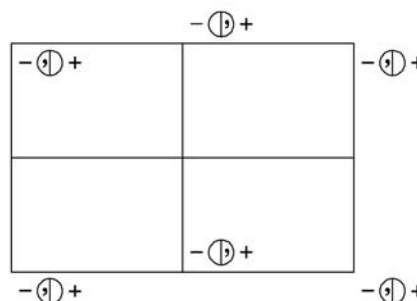
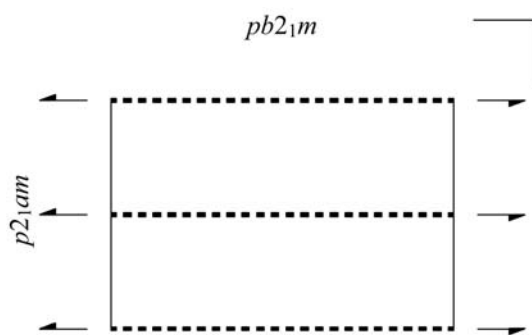
$m2m$

Orthorhombic/Rectangular

No. 29

$pb2_1m$

Patterson symmetry  $pmmm$



Origin on  $b2_1m$

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

Symmetry operations

- |             |  |  |                           |
|-------------|--|--|---------------------------|
| (1) 1       | (2) $2(0, \frac{1}{2}, 0) \quad 0, y, 0$ | (3) $b \quad 0, y, z$                  | (4) $m \quad x, y, 0$     |
| (1 0, 0, 0) | (2 <sub>y</sub>  0, $\frac{1}{2}$ , 0)   | (m <sub>x</sub>  0, $\frac{1}{2}$ , 0) | (m <sub>z</sub>  0, 0, 0) |

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

**Positions**

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

Reflection conditions

4  $b$  1 (1)  $x, y, z$  (2)  $\bar{x}, y + \frac{1}{2}, \bar{z}$  (3)  $\bar{x}, y + \frac{1}{2}, z$  (4)  $x, y, \bar{z}$

General:

$0k: k = 2n$

Special: no extra conditions

2  $a$   $\dots m$   $x, y, 0$   $\bar{x}, y + \frac{1}{2}, 0$

**Symmetry of special projections**

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

Along [100]  $\cancel{p11m}$   
 $\mathbf{a}' = \frac{1}{2}\mathbf{b}$   
Origin at  $x, 0, 0$

Along [010]  $\cancel{p2mm}$   
 $\mathbf{a}' = \mathbf{a}$   
Origin at  $0, y, 0$

**Maximal non-isotypic subgroups**

**I** [2]  $pb11$  (12) 1; 3  
[2]  $p12_11$  ( $p2_111, 9$ ) 1; 2  
[2]  $p11m$  (4) 1; 4

**IIa** none

**IIb** [2]  $pb2_1a$  ( $\mathbf{a}' = 2\mathbf{a}$ ) (33)

**Maximal isotypic subgroups of lowest index**

**IIc** [2]  $pb2_1m$  ( $\mathbf{a}' = 2\mathbf{a}$ ) (29); [3]  $pb2_1m$  ( $\mathbf{b}' = 3\mathbf{b}$ ) (29)

**Minimal non-isotypic supergroups**

**I** [2]  $pmam$  (40); [2]  $pbam$  (44)

**II** [2]  $pm2m$  ( $\mathbf{b}' = \frac{1}{2}\mathbf{b}$ ) (27)