

$pm2m$

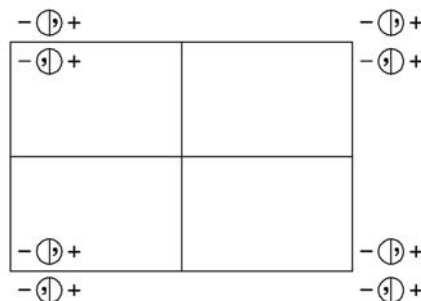
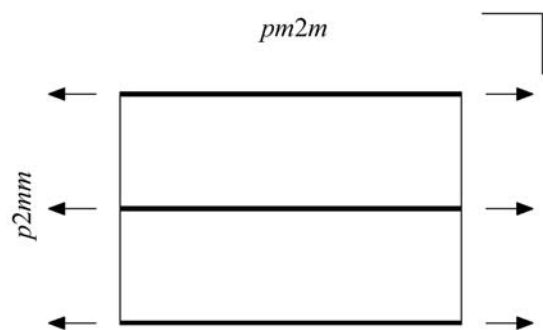
$m2m$

Orthorhombic/Rectangular

No. 27

$pm2m$

Patterson symmetry  $pmmm$



Origin on  $m2m$

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

Symmetry operations

- |             |                           |                           |                           |
|-------------|---------------------------|---------------------------|---------------------------|
| (1) 1       | (2) $2 \ 0, y, 0$         | (3) $m \ 0, y, z$         | (4) $m \ x, y, 0$         |
| (1 0, 0, 0) | (2 <sub>y</sub>  0, 0, 0) | (m <sub>x</sub>  0, 0, 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	$f$ 1	(1) $x, y, z$	(2) $\bar{x}, y, \bar{z}$	(3) $\bar{x}, y, z$	(4) $x, y, \bar{z}$	General: no conditions  Special: no extra conditions
2	$e$ $\dots m$	$x, y, 0$	$\bar{x}, y, 0$			
2	$d$ $m \dots$	$\frac{1}{2}, y, z$	$\frac{1}{2}, y, \bar{z}$			
2	$c$ $m \dots$	$0, y, z$	$0, y, \bar{z}$			
1	$b$ $m 2 m$	$\frac{1}{2}, y, 0$				
1	$a$ $m 2 m$	$0, y, 0$				

**Symmetry of special projections**

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

Along [100]  $\neq 11m$   
 $\mathbf{a}' = \mathbf{b}$   
 Origin at  $x, 0, 0$

Along [010]  $\neq 2mm$   
 $\mathbf{a}' = \mathbf{a}$   
 Origin at  $0, y, 0$

**Maximal non-isotypic subgroups**

**I** [2]  $pm11$  (11) 1; 3  
 [2]  $p121$  ( $p211$ , 8) 1; 2  
 [2]  $p11m$  (4) 1; 4

**IIa** none

**IIb** [2]  $cm2e$  ( $\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}$ ) (36); [2]  $cm2m$  ( $\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}$ ) (35); [2]  $pm2a$  ( $\mathbf{a}' = 2\mathbf{a}$ ) (31); [2]  $pb2b$  ( $\mathbf{b}' = 2\mathbf{b}$ ) (30);  
 [2]  $pb2, m$  ( $\mathbf{b}' = 2\mathbf{b}$ ) (29); [2]  $pm2, b$  ( $\mathbf{b}' = 2\mathbf{b}$ ) (28)

**Maximal isotypic subgroups of lowest index**

**IIc** [2]  $pm2m$  ( $\mathbf{a}' = 2\mathbf{a}$ ) (27); [2]  $pm2m$  ( $\mathbf{b}' = 2\mathbf{b}$ ) (27)

**Minimal non-isotypic supergroups**

**I** [2]  $pmmm$  (37); [2]  $pmam$  (40); [3]  $p\bar{6}m2$  (78); [3]  $p\bar{6}2m$  (79)

**II** [2]  $cm2m$  (35)