

$pm\bar{m}2$

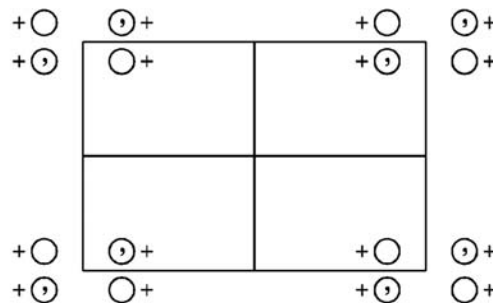
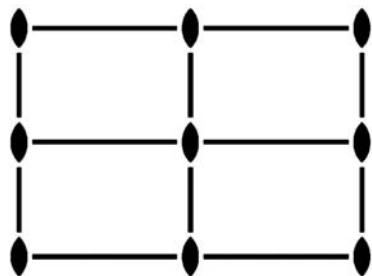
$mm2$

Orthorhombic/Rectangular

No. 23

$pm\bar{m}2$

Patterson symmetry $pmmm$



Origin on $mm2$

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

Symmetry operations

- | | | | |
|-------------|---------------------------|---------------------------|---------------------------|
| (1) 1 | (2) 2 $0, 0, z$ | (3) m $x, 0, z$ | (4) m $0, y, z$ |
| (1 0, 0, 0) | (2 _z 0, 0, 0) | (m _y 0, 0, 0) | (m _x 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
					General:
4 <i>i</i> 1	(1) x, y, z	(2) \bar{x}, \bar{y}, z	(3) x, \bar{y}, z	(4) \bar{x}, y, z	no conditions Special: no extra conditions
2 <i>h</i> $m..$	$\frac{1}{2}, y, z$	$\frac{1}{2}, \bar{y}, z$			
2 <i>g</i> $m..$	$0, y, z$	$0, \bar{y}, z$			
2 <i>f</i> $.m.$	$x, \frac{1}{2}, z$	$\bar{x}, \frac{1}{2}, z$			
2 <i>e</i> $.m.$	$x, 0, z$	$\bar{x}, 0, z$			
1 <i>d</i> $mm2$	$\frac{1}{2}, \frac{1}{2}, z$				
1 <i>c</i> $mm2$	$\frac{1}{2}, 0, z$				
1 <i>b</i> $mm2$	$0, \frac{1}{2}, z$				
1 <i>a</i> $mm2$	$0, 0, z$				

Symmetry of special projections

Along [001] $p2mm$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
 Origin at $0, 0, z$

Along [100] $\neq 1m1$
 $\mathbf{a}' = \mathbf{b}$
 Origin at $x, 0, 0$

Along [010] $\neq 1m1$
 $\mathbf{a}' = \mathbf{a}$
 Origin at $0, y, 0$

Maximal non-isotypic subgroups

I [2] $p1m1$ ($pm11, 11$) 1; 3
 [2] $pm11$ (11) 1; 4
 [2] $p112$ (3) 1; 2

IIa none

IIb [2] $cmm2$ ($\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}$) (26); [2] $pma2$ ($\mathbf{a}' = 2\mathbf{a}$) (24); [2] $pbm2$ ($\mathbf{b}' = 2\mathbf{b}$) ($pma2, 24$)

Maximal isotypic subgroups of lowest index

IIc [2] $pmm2$ ($\mathbf{a}' = 2\mathbf{a}$ or $\mathbf{b}' = 2\mathbf{b}$) (23)

Minimal non-isotypic supergroups

I [2] $pmmm$ (37); [2] $pmma$ (41); [2] $pmmn$ (46); [2] $p4mm$ (55); [2] $p\bar{4}m2$ (59)

II [2] $cmm2$ (26)