

$cm2m$

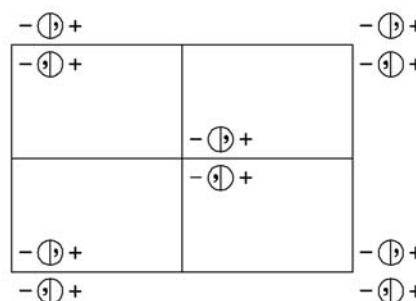
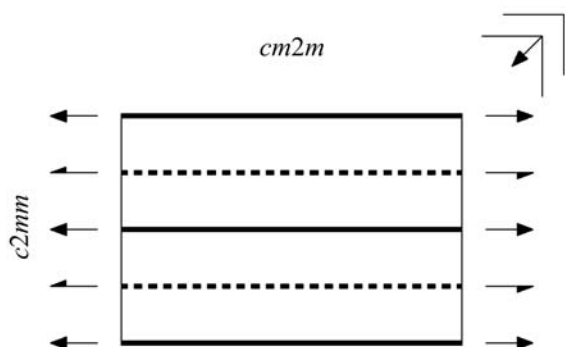
$m2m$

Orthorhombic/Rectangular

No. 35

$cm2m$

Patterson symmetry $cmmm$



Origin on $m2m$

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

Symmetry operations

For $(0,0,0)+$ set

- (1) 1 (2) $2 \ 0,y,0$ (3) $m \ 0,y,z$ (4) $m \ x,y,0$

For $(\frac{1}{2},\frac{1}{2},0)+$ set

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

Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(\frac{1}{2}, \frac{1}{2}, 0)$; (2); (3)

Positions

Multiplicity, Wyckoff letter, Site symmetry		Coordinates				Reflection conditions
		$(0,0,0)+$	$(\frac{1}{2}, \frac{1}{2}, 0)+$			General:
8	d 1	(1) x, y, z	(2) \bar{x}, y, \bar{z}	(3) \bar{x}, y, z	(4) x, y, \bar{z}	$hk: h+k=2n$ $h0: h=2n$ $0k: k=2n$
Special: no extra conditions						
4	c . . m	$x, y, 0$	$\bar{x}, y, 0$			
4	b m . .	$0, y, z$	$0, y, \bar{z}$			
2	a m $2m$	$0, y, 0$				

Symmetry of special projections

Along [001] $c1m1$ $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$ Origin at $0, 0, z$	Along [100] $\cancel{c}11m$ $\mathbf{a}' = \frac{1}{2}\mathbf{b}$ Origin at $x, 0, 0$	Along [010] $\cancel{c}2mm$ $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ Origin at $0, y, 0$
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Maximal non-isotypic subgroups

I	[2] $cm11$ (13)	(1; 3)+
	[2] $c121$ ($c211$, 10)	(1; 2)+
	[2] $c11m$ ($p11m$, 4)	(1; 4)+
IIa	[2] $pb2n$ (34)	1; 2; (3; 4) + $(\frac{1}{2}, \frac{1}{2}, 0)$
	[2] $pm2_1n$ (32)	1; 3; (2; 4) + $(\frac{1}{2}, \frac{1}{2}, 0)$
	[2] $pb2_1m$ (29)	1; 4; (2; 3) + $(\frac{1}{2}, \frac{1}{2}, 0)$
	[2] $pm2m$ (27)	1; 2; 3; 4
IIb	none	

Maximal isotypic subgroups of lowest index

IIc [3] $cm2m$ ($\mathbf{a}' = 3\mathbf{a}$) (35); [3] $cm2m$ ($\mathbf{b}' = 3\mathbf{b}$) (35)

Minimal non-isotypic supergroups

I	[2] $cmmm$ (47)
II	[2] $pm2m$ ($\mathbf{a}' = \frac{1}{2}\mathbf{a}, \mathbf{b}' = \frac{1}{2}\mathbf{b}$) (27)