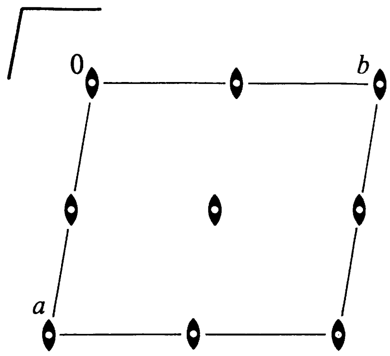
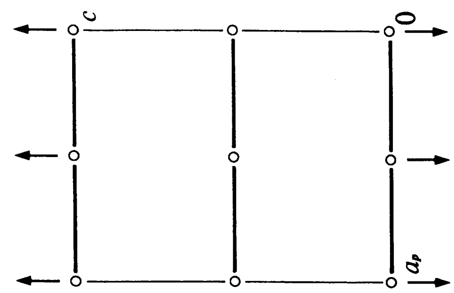
International Tables for Crystallography (2006). Vol. A, Space group 10, pp. 162–163.

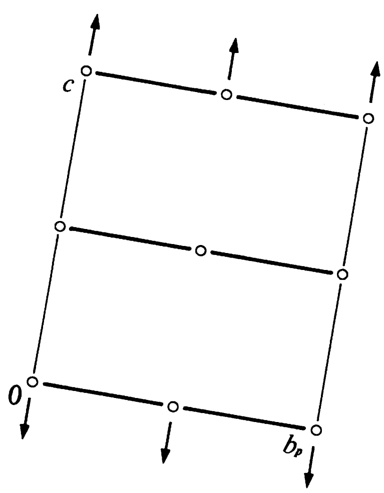
$P2/m$ $\quad C_{2h}^1$ $\quad 2/m$ $\quad$ Monoclinic

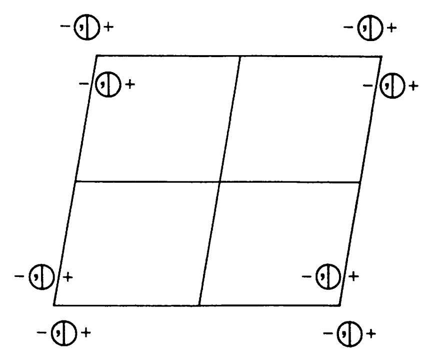
No. 10 $\quad P112/m$ $\quad$ Patterson symmetry $P112/m$

UNIQUE AXIS *c*









Origin at centre ($2/m$)

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

Symmetry operations

(1) 1 $\qquad$ (2) 2 $\;0,0,z$ $\qquad$ (3) $\bar{1}$ $\;0,0,0$ $\qquad$ (4) m $\;x,y,0$

Maximal isomorphic subgroups of lowest index

IIc $\quad$ [2] $P112/m$ ($\mathbf{c}' = 2\mathbf{c}$) ($P2/m$, 10); [2] $P112/m$ ($\mathbf{a}' = 2\mathbf{a}$ or $\mathbf{b}' = 2\mathbf{b}$ or $\mathbf{a}' = \mathbf{a} - \mathbf{b}, \mathbf{b}' = \mathbf{a} + \mathbf{b}$) ($P2/m$, 10)

Minimal non-isomorphic supergroups

I $\quad$ [2] $Pmmm$ (47); [2] $Pccm$ (49); [2] $Pmma$ (51); [2] $Pmna$ (53); [2] $Pbam$ (55); [2] $Pnnm$ (58); [2] $Cmmm$ (65); [2] $Cccm$ (66); [2] $P4/m$ (83); [2] $P4_2/m$ (84); [3] $P6/m$ (175)

II $\quad$ [2] $A112/m$ ($C2/m$, 12); [2] $B112/m$ ($C2/m$, 12); [2] $I112/m$ ($C2/m$, 12)

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

Positions

Multiplicity, Wyckoff letter, Site symmetry			Coordinates				Reflection conditions
							General:
4	*o*	1	(1) x,y,z	(2) $\bar{x},\bar{y},z$	(3) $\bar{x},\bar{y},\bar{z}$	(4) $x,y,\bar{z}$	no conditions
							Special: no extra conditions
2	*n*	*m*	$x,y,\frac{1}{2}$	$\bar{x},\bar{y},\frac{1}{2}$			
2	*m*	*m*	$x,y,0$	$\bar{x},\bar{y},0$			
2	*l*	2	$\frac{1}{2},\frac{1}{2},z$	$\frac{1}{2},\frac{1}{2},\bar{z}$			
2	*k*	2	$\frac{1}{2},0,z$	$\frac{1}{2},0,\bar{z}$			
2	*j*	2	$0,\frac{1}{2},z$	$0,\frac{1}{2},\bar{z}$			
2	*i*	2	$0,0,z$	$0,0,\bar{z}$			
1	*h*	$2/m$	$\frac{1}{2},\frac{1}{2},\frac{1}{2}$				
1	*g*	$2/m$	$\frac{1}{2},\frac{1}{2},0$				
1	*f*	$2/m$	$\frac{1}{2},0,\frac{1}{2}$				
1	*e*	$2/m$	$0,\frac{1}{2},\frac{1}{2}$				
1	*d*	$2/m$	$0,\frac{1}{2},0$				
1	*c*	$2/m$	$\frac{1}{2},0,0$				
1	*b*	$2/m$	$0,0,\frac{1}{2}$				
1	*a*	$2/m$	$0,0,0$				

Symmetry of special projections

Along [001] $p2$
$\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
Origin at $0,0,z$

Along [100] $p2mm$
$\mathbf{a}' = \mathbf{b}_p$ $\mathbf{b}' = \mathbf{c}$
Origin at $x,0,0$

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

Maximal non-isomorphic subgroups

I [2] $P11m$ (Pm, 6) 1; 4
[2] $P112$ ($P2$, 3) 1; 2
[2] $P\bar{1}$ (2) 1; 3

IIa none

IIb [2] $P112_1/m$ ($\mathbf{c}' = 2\mathbf{c}$) ($P2_1/m$, 11); [2] $P112/a$ ($\mathbf{a}' = 2\mathbf{a}$) ($P2/c$, 13); [2] $P112/b$ ($\mathbf{b}' = 2\mathbf{b}$) ($P2/c$, 13); [2] $C112/e$ ($\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}$) ($P2/c$, 13); [2] $A112/m$ ($\mathbf{b}' = 2\mathbf{b}, \mathbf{c}' = 2\mathbf{c}$) ($C2/m$, 12); [2] $B112/m$ ($\mathbf{a}' = 2\mathbf{a}, \mathbf{c}' = 2\mathbf{c}$) ($C2/m$, 12); [2] $F112/m$ ($\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}, \mathbf{c}' = 2\mathbf{c}$) ($C2/m$, 12)

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