

$Pnc2$

C_{2v}^6

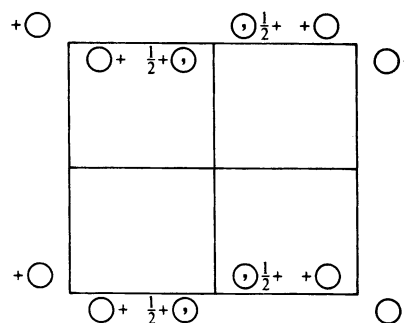
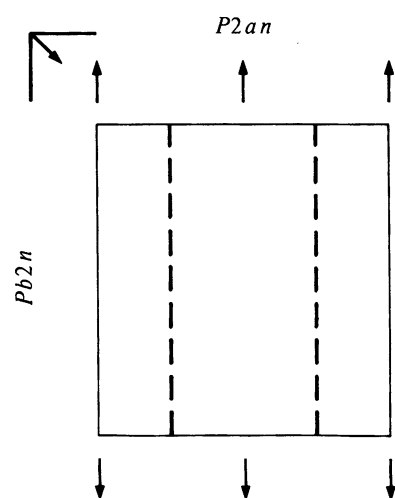
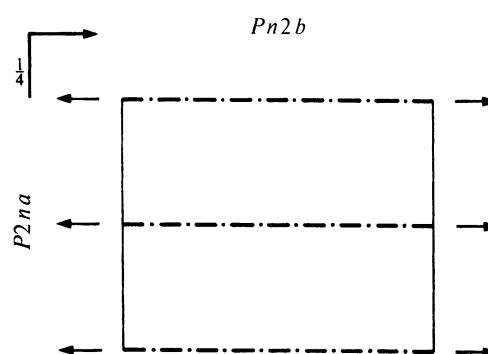
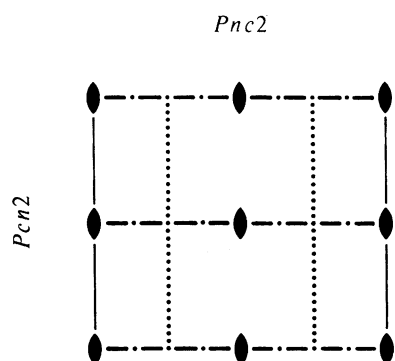
$mm2$

Orthorhombic

No. 30

$Pnc2$

Patterson symmetry $Pmmm$



Origin on $n12$

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

Symmetry operations

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

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
4 <i>c</i> 1	(1) x,y,z	(2) \bar{x},\bar{y},z	(3) $x,\bar{y}+\frac{1}{2},z+\frac{1}{2}$	(4) $\bar{x},y+\frac{1}{2},z+\frac{1}{2}$	General: $0kl : k+l=2n$ $h0l : l=2n$ $0k0 : k=2n$ $00l : l=2n$ Special: as above, plus $hkl : k+l=2n$ $hkl : k+l=2n$
2 <i>b</i> .. 2	$\frac{1}{2},0,z$	$\frac{1}{2},\frac{1}{2},z+\frac{1}{2}$			$hkl : k+l=2n$
2 <i>a</i> .. 2	$0,0,z$	$0,\frac{1}{2},z+\frac{1}{2}$			$hkl : k+l=2n$

Symmetry of special projections

Along [001] $p2gm$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
 Origin at 0,0,z

Along [100] $c1m1$
 $\mathbf{a}' = \mathbf{b}$ $\mathbf{b}' = \mathbf{c}$
 Origin at x,0,0

Along [010] $p11m$
 $\mathbf{a}' = \frac{1}{2}\mathbf{c}$ $\mathbf{b}' = \mathbf{a}$
 Origin at 0,y,0

Maximal non-isomorphic subgroups

I [2] $P1c1$ (Pc , 7) 1; 3
 [2] $Pn11$ (Pc , 7) 1; 4
 [2] $P112$ ($P2$, 3) 1; 2

IIa none

IIb [2] $Pnn2$ ($\mathbf{a}' = 2\mathbf{a}$) (34)

Maximal isomorphic subgroups of lowest index

IIc [2] $Pnc2$ ($\mathbf{a}' = 2\mathbf{a}$) (30); [3] $Pnc2$ ($\mathbf{b}' = 3\mathbf{b}$) (30); [3] $Pnc2$ ($\mathbf{c}' = 3\mathbf{c}$) (30)

Minimal non-isomorphic supergroups

I [2] $Pban$ (50); [2] $Pnna$ (52); [2] $Pmna$ (53); [2] $Pbcn$ (60)

II [2] $Ccc2$ (37); [2] $Amm2$ (38); [2] $Bbe2$ ($Aea2$, 41); [2] $Ima2$ (46); [2] $Pcc2$ ($\mathbf{b}' = \frac{1}{2}\mathbf{b}$) (27); [2] $Pbm2$ ($\mathbf{c}' = \frac{1}{2}\mathbf{c}$) ($Pma2$, 28)