

$Pma2$

C_{2v}^4

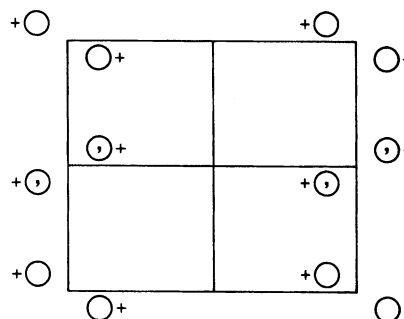
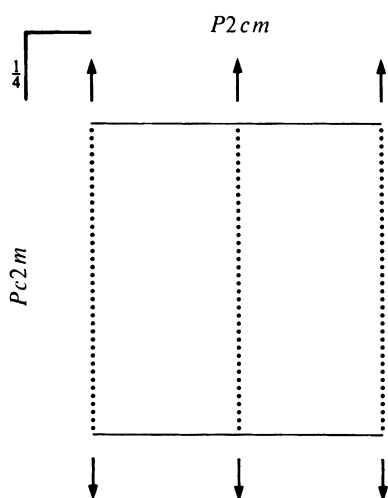
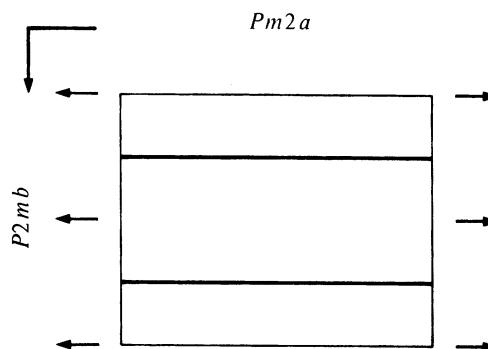
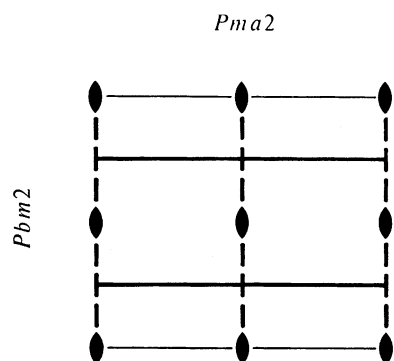
$mm2$

Orthorhombic

No. 28

$Pma2$

Patterson symmetry $Pmmm$



Origin on $1a2$

Asymmetric unit $0 \leq x \leq \frac{1}{4}; 0 \leq y \leq 1; 0 \leq z \leq 1$

Symmetry operations

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

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>d</i> 1	(1) x,y,z	(2) \bar{x},\bar{y},z	(3) $x+\frac{1}{2},\bar{y},z$	(4) $\bar{x}+\frac{1}{2},y,z$	General: $h0l : h = 2n$ $h00 : h = 2n$ Special: as above, plus no extra conditions
2 <i>c</i> $m..$	$\frac{1}{4},y,z$	$\frac{3}{4},\bar{y},z$			$hkl : h = 2n$
2 <i>b</i> $..2$	$0,\frac{1}{2},z$	$\frac{1}{2},\frac{1}{2},z$			$hkl : h = 2n$
2 <i>a</i> $..2$	$0,0,z$	$\frac{1}{2},0,z$			$hkl : h = 2n$

Symmetry of special projections

Along [001] $p2mg$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
Origin at 0,0,z

Along [100] $p1m1$
 $\mathbf{a}' = \mathbf{b}$ $\mathbf{b}' = \mathbf{c}$
Origin at $x,0,0$

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

Maximal non-isomorphic subgroups

I [2] $P1a1$ (Pc , 7) 1; 3
[2] $Pm11$ (Pm , 6) 1; 4
[2] $P112$ ($P2$, 3) 1; 2

IIa none

IIb [2] $Pba2$ ($\mathbf{b}' = 2\mathbf{b}$) (32); [2] $Pmn2_1$ ($\mathbf{c}' = 2\mathbf{c}$) (31); [2] $Pcn2$ ($\mathbf{c}' = 2\mathbf{c}$) ($Pnc2$, 30); [2] $Pca2_1$ ($\mathbf{c}' = 2\mathbf{c}$) (29);
[2] $Aea2$ ($\mathbf{b}' = 2\mathbf{b}, \mathbf{c}' = 2\mathbf{c}$) (41); [2] $Ama2$ ($\mathbf{b}' = 2\mathbf{b}, \mathbf{c}' = 2\mathbf{c}$) (40)

Maximal isomorphic subgroups of lowest index

IIc [2] $Pma2$ ($\mathbf{b}' = 2\mathbf{b}$) (28); [2] $Pma2$ ($\mathbf{c}' = 2\mathbf{c}$) (28); [3] $Pma2$ ($\mathbf{a}' = 3\mathbf{a}$) (28)

Minimal non-isomorphic supergroups

I [2] $Pccm$ (49); [2] $Pmma$ (51); [2] $Pmna$ (53); [2] $Pbcm$ (57)

II [2] $Cmm2$ (35); [2] $Bme2$ ($Aem2$, 39); [2] $Ama2$ (40); [2] $Ima2$ (46); [2] $Pmm2$ ($\mathbf{a}' = \frac{1}{2}\mathbf{a}$) (25)