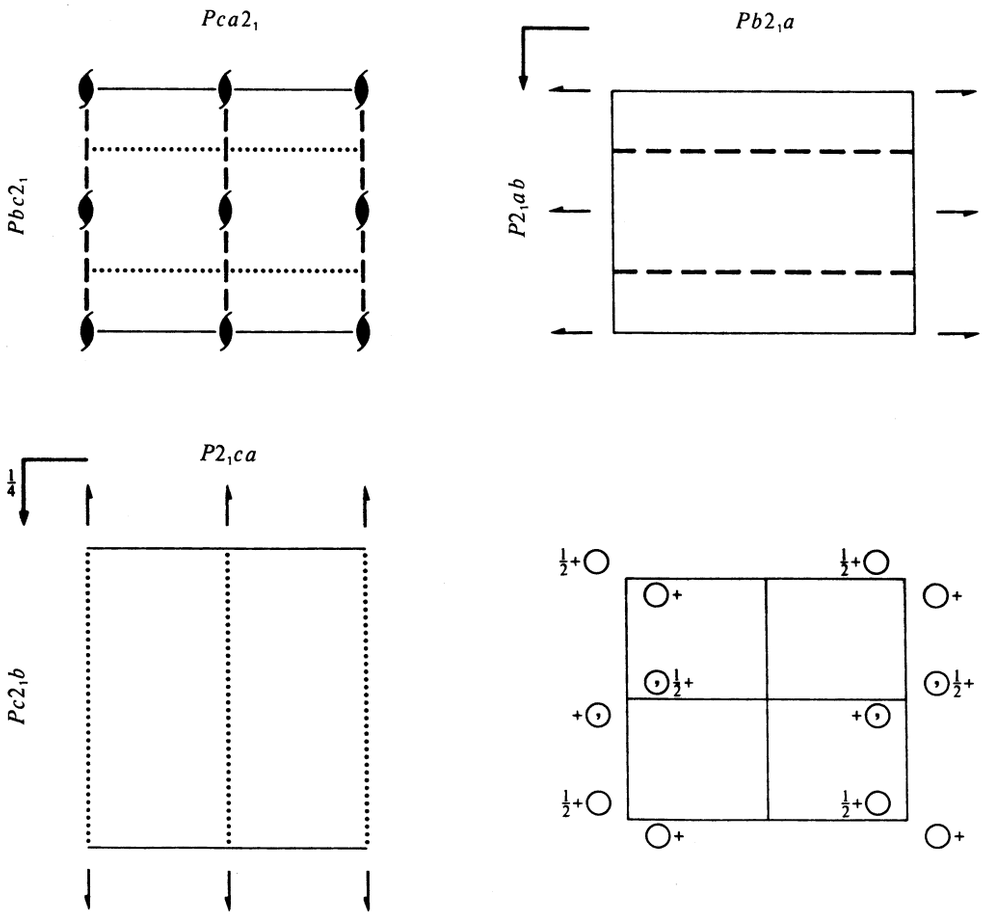
$Pca2_1$ C_{2v}^5 $mm2$ Orthorhombic

No. 29 $Pca2_1$ Patterson symmetry $Pmmm$



Origin on $1\,a\,2_1$

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

Symmetry operations

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

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
					General:
4 a 1	(1) x,y,z	(2) $\bar{x},\bar{y},z+\frac{1}{2}$	(3) $x+\frac{1}{2},\bar{y},z$	(4) $\bar{x}+\frac{1}{2},y,z+\frac{1}{2}$	$0kl$: $l=2n$ $h0l$: $h=2n$ $h00$: $h=2n$ $00l$: $l=2n$

Symmetry of special projections

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

Along [100] $p1m1$
$\mathbf{a}'=\mathbf{b}$ $\mathbf{b}'=\frac{1}{2}\mathbf{c}$
Origin at $x,0,0$

Along [010] $p11g$
$\mathbf{a}'=\mathbf{c}$ $\mathbf{b}'=\frac{1}{2}\mathbf{a}$
Origin at $0,y,0$

Maximal non-isomorphic subgroups

I [2] $P1a1$ (Pc, 7) 1; 3
[2] $Pc11$ (Pc, 7) 1; 4
[2] $P112_1$ ($P2_1$, 4) 1; 2

IIa none

IIb [2] $Pna2_1$ ($\mathbf{b}'=2\mathbf{b}$) (33)

Maximal isomorphic subgroups of lowest index

IIc [2] $Pca2_1$ ($\mathbf{b}'=2\mathbf{b}$) (29); [3] $Pca2_1$ ($\mathbf{a}'=3\mathbf{a}$) (29); [3] $Pca2_1$ ($\mathbf{c}'=3\mathbf{c}$) (29)

Minimal non-isomorphic supergroups

I [2] $Pcca$ (54); [2] $Pbcm$ (57); [2] $Pbcn$ (60); [2] $Pbca$ (61)

II [2] $Ccm2_1$ ($Cmc2_1$, 36); [2] $Bme2$ ($Aem2$, 39); [2] $Aea2$ (41); [2] $Iba2$ (45); [2] $Pcm2_1$ ($\mathbf{a}'=\frac{1}{2}\mathbf{a}$) ($Pmc2_1$, 26); [2] $Pma2$ ($\mathbf{c}'=\frac{1}{2}\mathbf{c}$) (28)