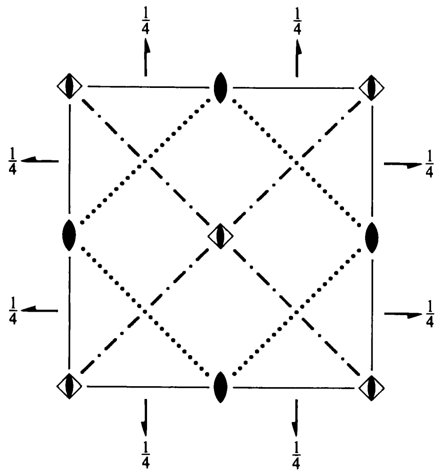
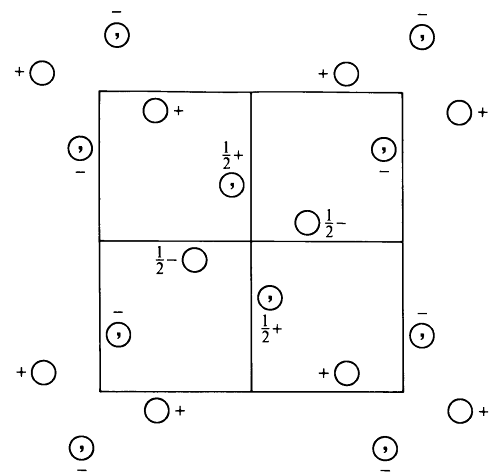
$P\bar{4}2_1c$ $\quad D_{2d}^4$ $\quad \bar{4}2m$ $\quad$ Tetragonal

No. 114 $\quad P\bar{4}2_1c$ $\quad$ Patterson symmetry $P4/mmm$





Origin at $\bar{4}1n$

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

Symmetry operations

(1) 1	(2) $2 \quad 0,0,z$	(3) $\bar{4}^+ \quad 0,0,z;\ 0,0,0$	(4) $\bar{4}^- \quad 0,0,z;\ 0,0,0$
(5) $2(0,\frac{1}{2},0) \quad \frac{1}{4},y,\frac{1}{4}$	(6) $2(\frac{1}{2},0,0) \quad x,\frac{1}{4},\frac{1}{4}$	(7) $c \quad x+\frac{1}{2},\bar{x},z$	(8) $n(\frac{1}{2},\frac{1}{2},\frac{1}{2}) \quad x,x,z$

Generators selected $\quad (1);\ t(1,0,0);\ t(0,1,0);\ t(0,0,1);\ (2);\ (3);\ (5)$

Positions

Multiplicity, Wyckoff letter, Site symmetry			Coordinates				Reflection conditions
							General:
8	*e*	1	(1) x,y,z	(2) $\bar{x},\bar{y},z$	(3) $y,\bar{x},\bar{z}$	(4) $\bar{y},x,\bar{z}$	hhl: $l=2n$
			(5) $\bar{x}+\frac{1}{2},y+\frac{1}{2},\bar{z}+\frac{1}{2}$	(6) $x+\frac{1}{2},\bar{y}+\frac{1}{2},\bar{z}+\frac{1}{2}$	(7) $\bar{y}+\frac{1}{2},\bar{x}+\frac{1}{2},z+\frac{1}{2}$	(8) $y+\frac{1}{2},x+\frac{1}{2},z+\frac{1}{2}$	$00l$: $l=2n$
							$h00$: $h=2n$
							Special: as above, plus
4	*d*	$2\,.\,.$	$0,\frac{1}{2},z$	$\frac{1}{2},0,\bar{z}$	$\frac{1}{2},0,\bar{z}+\frac{1}{2}$	$0,\frac{1}{2},z+\frac{1}{2}$	hkl: $l=2n$
							$hk0$: $h+k=2n$
4	*c*	$2\,.\,.$	$0,0,z$	$0,0,\bar{z}$	$\frac{1}{2},\frac{1}{2},\bar{z}+\frac{1}{2}$	$\frac{1}{2},\frac{1}{2},z+\frac{1}{2}$	hkl: $h+k+l=2n$
2	*b*	$\bar{4}\,.\,.$	$0,0,\frac{1}{2}$	$\frac{1}{2},\frac{1}{2},0$			hkl: $h+k+l=2n$
2	*a*	$\bar{4}\,.\,.$	$0,0,0$	$\frac{1}{2},\frac{1}{2},\frac{1}{2}$			hkl: $h+k+l=2n$

Symmetry of special projections

Along [001] $p4gm$
$\mathbf{a}' = \mathbf{a} \qquad \mathbf{b}' = \mathbf{b}$
Origin at $0,0,z$

Along [100] $p2mg$
$\mathbf{a}' = \mathbf{b} \qquad \mathbf{b}' = \mathbf{c}$
Origin at $x,\frac{1}{4},\frac{1}{4}$

Along [110] $p1m1$
$\mathbf{a}' = \frac{1}{2}(-\mathbf{a}+\mathbf{b}) \qquad \mathbf{b}' = \frac{1}{2}\mathbf{c}$
Origin at $x,x,0$

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