

$p2_12_12$

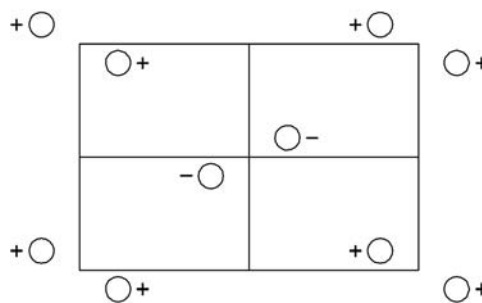
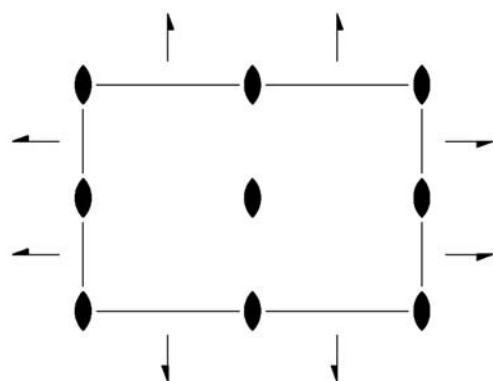
222

Orthorhombic/Rectangular

No. 21

$p2_12_12$

Patterson symmetry $pmmm$



Origin at intersection of 2 with perpendicular plane containing 2_1 axes

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

Symmetry operations

- | | | | |
|--------------------|--|--|--|
| (1) 1
(1 0,0,0) | (2) 2 0,0,z
(2 _z 0,0,0) | (3) 2(0, $\frac{1}{2}$, 0) $\frac{1}{4}$,y,0
(2 _y $\frac{1}{2}$, $\frac{1}{2}$, 0) | (4) 2($\frac{1}{2}$, 0, 0) x , $\frac{1}{4}$, 0
(2 _x $\frac{1}{2}$, $\frac{1}{2}$, 0) |
|--------------------|--|--|--|

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

Positions

	Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
						General:
4	c 1	(1) x, y, z	(2) \bar{x}, \bar{y}, z	(3) $\bar{x} + \frac{1}{2}, y + \frac{1}{2}, \bar{z}$	(4) $x + \frac{1}{2}, \bar{y} + \frac{1}{2}, \bar{z}$	$h0: h = 2n$ $0k: k = 2n$ Special: as above, plus
2	b .. 2	$0, \frac{1}{2}, z$	$\frac{1}{2}, 0, \bar{z}$			$hk: h + k = 2n$
2	a .. 2	$0, 0, z$	$\frac{1}{2}, \frac{1}{2}, \bar{z}$			$hk: h + k = 2n$

Symmetry of special projections

Along [001] $p2gg$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
 Origin at $0, 0, z$

Along [100] $\cancel{p}2mg$
 $\mathbf{a}' = \mathbf{b}$
 Origin at $x, \frac{1}{4}, 0$

Along [010] $\cancel{p}2mg$
 $\mathbf{a}' = \mathbf{a}$
 Origin at $\frac{1}{4}, y, 0$

Maximal non-isotypic subgroups

I [2] $p12_11$ ($p2_111, 9$) 1; 3
 [2] $p2_111$ (9) 1; 4
 [2] $p112$ (3) 1; 2

IIa none

IIb none

Maximal isotypic subgroups of lowest index

IIc [3] $p2_12_12$ ($\mathbf{a}' = 3\mathbf{a}$ or $\mathbf{b}' = 3\mathbf{b}$) (21)

Minimal non-isotypic supergroups

I [2] $pbam$ (44); [2] $pmmn$ (46); [2] $p42_12$ (54); [2] $p\bar{4}2_1m$ (58)
II [2] $c222$ (22); [2] $p22_12$ ($\mathbf{a}' = \frac{1}{2}\mathbf{a}$) ($p2_122, 20$)