

$\bar{4}2/m$

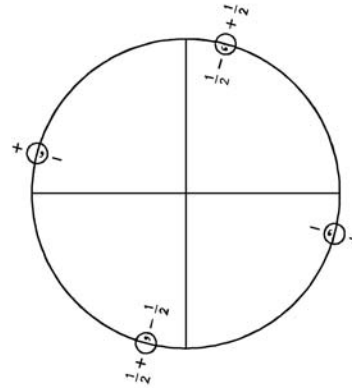
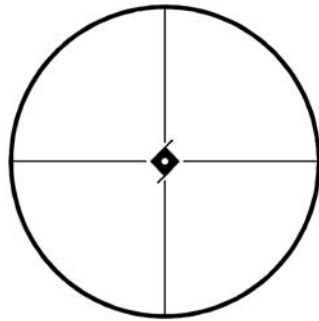
$4/m$

Tetragonal

No. 29

$\bar{4}2/m$

Patterson symmetry $\bar{4}2/m$



Origin at centre $(2/m)$ on 4_2

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

Symmetry operations

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

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

Positions

	Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
						General:
8	e 1	(1) x, y, z (5) $\bar{x}, \bar{y}, \bar{z}$	(2) \bar{x}, \bar{y}, z (6) x, y, \bar{z}	(3) $\bar{y}, x, z + \frac{1}{2}$ (7) $y, \bar{x}, \bar{z} + \frac{1}{2}$	(4) $y, \bar{x}, z + \frac{1}{2}$ (8) $\bar{y}, x, \bar{z} + \frac{1}{2}$	$l : l = 2n$
4	d $m..$	$x, y, 0$	$\bar{x}, \bar{y}, 0$	$\bar{y}, x, \frac{1}{2}$	$y, \bar{x}, \frac{1}{2}$	Special: no extra conditions
4	c $2..$	$0, 0, z$	$0, 0, z + \frac{1}{2}$	$0, 0, \bar{z}$	$0, 0, \bar{z} + \frac{1}{2}$	
2	b $\bar{4}..$	$0, 0, \frac{1}{4}$	$0, 0, \frac{3}{4}$			
2	a $2/m..$	$0, 0, 0$	$0, 0, \frac{1}{2}$			

Symmetry of special projections

Along [001] 4

Along [100] $\bar{4}2mm$

Along [110] $\bar{4}2mm$

Origin at $0, 0, z$

$\mathbf{a}' = \mathbf{c}$

$\mathbf{a}' = \mathbf{c}$

Origin at $x, 0, 0$

Origin at $x, x, 0$

Maximal non-isotypic non-enantiomorphic subgroups

I	$[2]\bar{4}$ (27)	1; 2; 7; 8
	$[2]\bar{4}_2$ (25)	1; 2; 3; 4
	$[2]\bar{4}112/m$ (11)	1; 2; 5; 6

IIa none

IIb none

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc $[3]\bar{4}_2/m$ ($\mathbf{c}' = 3\mathbf{c}$) (29)

Minimal non-isotypic non-enantiomorphic supergroups

I $[2]\bar{4}_2/mmc$ (41)

II $[2]\bar{4}/m$ ($\mathbf{c}' = \frac{1}{2}\mathbf{c}$) (28)