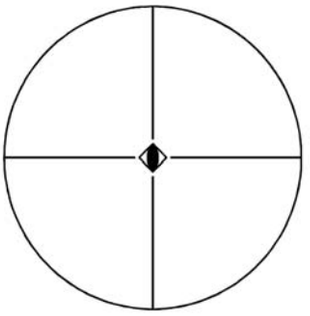
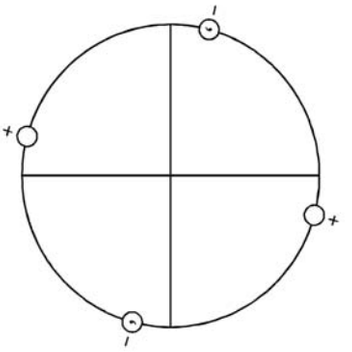
$p\bar{4}$ $\bar{4}$ Tetragonal

No. 27 $p\bar{4}$ Patterson symmetry $p4/m$





Origin at $\bar{4}$

Asymmetric unit $0 \le x; \quad 0 \le y; \quad 0 \le z \le 1$

Symmetry operations

(1) 1 $(1|0,0,0)$

(2) 2 $0,0,z$ $(2_z|0,0,0)$

(3) $\bar{4}^+$ $0,0,z;\ 0,0,0$ $(\bar{4}_z|0,0,0)$

(4) $\bar{4}^-$ $0,0,z;\ 0,0,0$ $(\bar{4}_z^{-1}|0,0,0)$

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

Positions

Multiplicity, Wyckoff letter, Site symmetry			Coordinates				Reflection conditions
							General:
4	d	1	(1) x,y,z	(2) $\bar{x},\bar{y},z$	(3) $y,\bar{x},\bar{z}$	(4) $\bar{y},x,\bar{z}$	no conditions
							Special: no extra conditions
2	c	2 . .	$0,0,z$	$0,0,\bar{z}$			
1	b	$\bar{4}$ . .	$0,0,\frac{1}{2}$				
1	a	$\bar{4}$ . .	$0,0,0$				

Symmetry of special projections

Along [001] 4
Origin at $0,0,z$

Along [100] $\not p 1\,1\,m$
$\mathbf{a}' = \mathbf{c}$
Origin at $x,0,0$

Along [110] $\not p 1\,1\,m$
$\mathbf{a}' = \mathbf{c}$
Origin at $x,x,0$

Maximal non-isotypic non-enantiomorphic subgroups

I [2] $\not p 1\,1\,2$ (8) 1; 2

IIa none

IIb none

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc [2] $\not p\bar{4}$ ($\mathbf{c}' = 2\mathbf{c}$) (27)

Minimal non-isotypic non-enantiomorphic supergroups

I [2] $\not p 4/m$ (28); [2] $\not p 4_2/m$ (29); [2] $\not p\bar{4}\,2\,m$ (37); [2] $\not p\bar{4}\,2\,c$ (38)

II none