

$\bar{4}32$

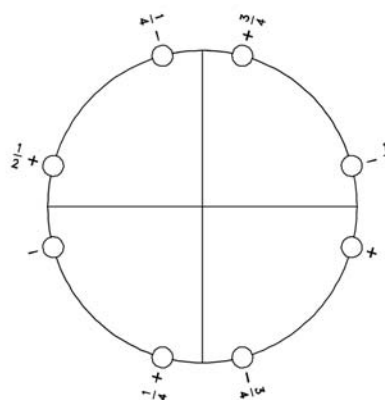
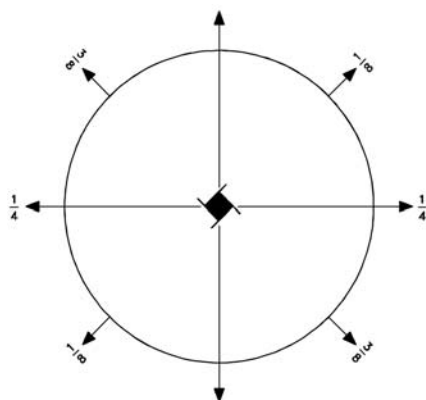
422

Tetragonal

No. 33

$\bar{4}32$

Patterson symmetry  $\bar{4}/mmm$



**Origin** on  $2[100]$  at  $4_3(2,1)1$

**Asymmetric unit**  $0 \leq z \leq \frac{1}{8}$

**Symmetry operations**

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

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

**Positions**

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

**Symmetry of special projections**

Along [001] $4mm$	Along [100] $\bar{4}2mg$	Along [110] $\bar{4}2mg$
Origin at 0, 0, z	$\mathbf{a}' = \mathbf{c}$ Origin at $x, 0, 0$	$\mathbf{a}' = \mathbf{c}$ Origin at $x, x, \frac{3}{8}$

**Maximal non-isotypic non-enantiomorphic subgroups**

<b>I</b>	$[2]\bar{4}_3 11 (\bar{4}_3, 26)$	1; 2; 3; 4
	$[2]\bar{4}_2 21 (\bar{4}222_1, 14)$	1; 2; 5; 6
	$[2]\bar{4}_2 12 (\bar{4}222_1, 14)$	1; 2; 7; 8

**IIa** none

**IIb** none

**Maximal isotypic subgroups and enantiomorphic subgroups of lowest index**

**IIc**  $[3]\bar{4}_1 22 (\mathbf{c}' = 3\mathbf{c}) (31)$ ;  $[5]\bar{4}_3 22 (\mathbf{c}' = 5\mathbf{c}) (33)$

**Minimal non-isotypic non-enantiomorphic supergroups**

**I** none

**II**  $[2]\bar{4}_2 22 (\mathbf{c}' = \frac{1}{2}\mathbf{c}) (32)$