

$\bar{4}2$

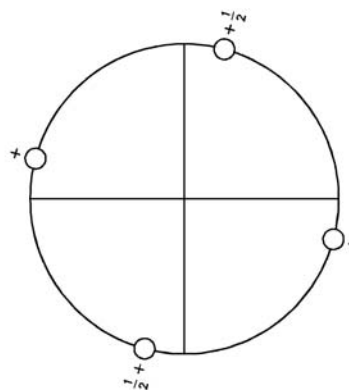
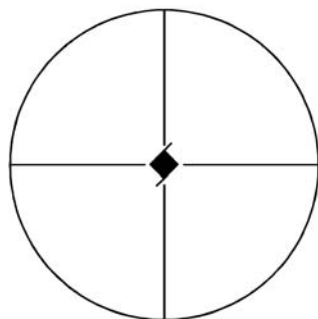
4

Tetragonal

No. 25

$\bar{4}2$

Patterson symmetry  $\bar{4}/m$



Origin on 2 on  $4_2$

Asymmetric unit  $0 \leq x; 0 \leq y; 0 \leq z \leq 1$

Symmetry operations

- |           |                         |  |  |
|-----------|-------------------------|--|--|
| (1) 1     | (2) $2_{0,0,z}$         | (3) $4^+(\frac{1}{2})_{0,0,z}$                     | (4) $4^-(\frac{1}{2})_{0,0,z}$                     |
| (1 0,0,0) | (2 <sub>z</sub>  0,0,0) | (4 <sub>z</sub> <sup>+</sup>  0,0, $\frac{1}{2}$ ) | (4 <sub>z</sub> <sup>-</sup>  0,0, $\frac{1}{2}$ ) |

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

**Positions**

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

Reflection conditions

4 *b* 1 (1)  $x, y, z$  (2)  $\bar{x}, \bar{y}, z$  (3)  $\bar{y}, x, z + \frac{1}{2}$  (4)  $y, \bar{x}, z + \frac{1}{2}$

General:

$l : l = 2n$

Special: no extra conditions

2 *a* 2..  $0, 0, z$   $0, 0, z + \frac{1}{2}$

**Symmetry of special projections**

Along [001] 4

Along [100]  $\not\propto 11m$

Along [110]  $\not\propto 11m$

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

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

Origin at  $0, 0, z$

Origin at  $x, 0, 0$

Origin at  $x, x, 0$

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

**I**  $[2] \not\propto 112$  (8) 1; 2

**IIa** none

**IIb**  $[2] \not\propto 4_3$  ( $\mathbf{c}' = 2\mathbf{c}$ ) (26);  $[2] \not\propto 4_1$  ( $\mathbf{c}' = 2\mathbf{c}$ ) (24)

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

**IIc**  $[3] \not\propto 4_2$  ( $\mathbf{c}' = 3\mathbf{c}$ ) (25)

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

**I**  $[2] \not\propto 4_2/m$  (29);  $[2] \not\propto 4_2 22$  (32);  $[2] \not\propto 4_2 cm$  (35)

**II**  $[2] \not\propto 4$  ( $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ ) (23)