

$P\bar{4}2_1c$

No. 114

 $P\bar{4}2_1c$
 D_{2d}^4
Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; (2); (3); (5)

General position

 Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

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

I Maximal translationengleiche subgroups

[2] $P\bar{4}11$ (81, $P\bar{4}$)	1; 2; 3; 4		
[2] $P21c$ (37, $Ccc2$)	1; 2; 7; 8	$\mathbf{a} - \mathbf{b}, \mathbf{a} + \mathbf{b}, \mathbf{c}$	0, 1/2, 0
[2] $P22_11$ (18, $P2_12_12$)	1; 2; 5; 6		0, 0, 1/4

II Maximal klassengleiche subgroups

• Enlarged unit cell

[3] $\mathbf{c}' = 3\mathbf{c}$			
$\left\{ \begin{array}{l} P\bar{4}2_1c \text{ (114)} \\ P\bar{4}2_1c \text{ (114)} \\ P\bar{4}2_1c \text{ (114)} \end{array} \right.$	$\langle 2; 3; 5 + (0, 0, 1) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	
	$\langle 2; 3 + (0, 0, 2); 5 + (0, 0, 3) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	0, 0, 1
	$\langle 2; 3 + (0, 0, 4); 5 + (0, 0, 5) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	0, 0, 2

• Series of maximal isomorphic subgroups

[p] $\mathbf{c}' = p\mathbf{c}$			
$P\bar{4}2_1c$ (114)	$\langle 2; 3 + (0, 0, 2u); 5 + (0, 0, \frac{p}{2} - \frac{1}{2} + 2u) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	$\mathbf{a}, \mathbf{b}, p\mathbf{c}$	0, 0, u
[p^2] $\mathbf{a}' = p\mathbf{a}, \mathbf{b}' = p\mathbf{b}$			
$P\bar{4}2_1c$ (114)	$\langle 2 + (2u, 2v, 0); 3 + (u - v, u + v, 0); 5 + (\frac{p}{2} - \frac{1}{2} + 2u, \frac{p}{2} - \frac{1}{2}, 0) \rangle$ $p > 2; 0 \leq u < p; 0 \leq v < p$ p^2 conjugate subgroups for the prime p	$p\mathbf{a}, p\mathbf{b}, \mathbf{c}$	$u, v, 0$

I Minimal translationengleiche supergroups

 [2] $P4/mnc$ (128); [2] $P4/ncc$ (130); [2] $P4_2/mbc$ (135); [2] $P4_2/nmc$ (137)

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

 [2] $C\bar{4}2c$ (116, $P\bar{4}c2$); [2] $I\bar{4}2m$ (121)

• Decreased unit cell

 [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ $P\bar{4}2_1m$ (113)