

$I\bar{4}c2$

No. 120

 $I\bar{4}c2$
 D_{2d}^{10}
Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; $t(\frac{1}{2},\frac{1}{2},\frac{1}{2})$; (2); (3); (5)

General position

 Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

16	<i>i</i>	1	(0,0,0)+	$(\frac{1}{2},\frac{1}{2},\frac{1}{2})+$			
			(1) x,y,z	(2) \bar{x},\bar{y},z	(3) y,\bar{x},\bar{z}	(4) \bar{y},x,\bar{z}	
			(5) $x,\bar{y},z+\frac{1}{2}$	(6) $\bar{x},y,z+\frac{1}{2}$	(7) $y,x,\bar{z}+\frac{1}{2}$	(8) $\bar{y},\bar{x},\bar{z}+\frac{1}{2}$	

I Maximal translationengleiche subgroups

[2] $I\bar{4}11$ (82, $I\bar{4}$)	(1; 2; 3; 4)+		
[2] $I2c1$ (45, $Iba2$)	(1; 2; 5; 6)+		
[2] $I212$ (22, $F222$)	(1; 2; 7; 8)+	$\mathbf{a}-\mathbf{b}, \mathbf{a}+\mathbf{b}, \mathbf{c}$	0, 0, 1/4

II Maximal klassengleiche subgroups

• Loss of centring translations

[2] $P\bar{4}b2$ (117)	1; 2; 3; 4; (5; 6; 7; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		
[2] $P\bar{4}b2$ (117)	1; 2; 7; 8; (3; 4; 5; 6) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		0, 1/2, 1/4
[2] $P\bar{4}c2$ (116)	1; 2; 3; 4; 5; 6; 7; 8		
[2] $P\bar{4}c2$ (116)	1; 2; 5; 6; (3; 4; 7; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		0, 1/2, 1/4

• Enlarged unit cell

[3] $\mathbf{c}' = 3\mathbf{c}$			
$I\bar{4}c2$ (120)	$\langle 2; 3; 5 + (0,0,1) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	
$I\bar{4}c2$ (120)	$\langle 2; 3 + (0,0,2); 5 + (0,0,1) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	0, 0, 1
$I\bar{4}c2$ (120)	$\langle 2; 3 + (0,0,4); 5 + (0,0,1) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	0, 0, 2

• Series of maximal isomorphic subgroups

[p] $\mathbf{c}' = p\mathbf{c}$			
$I\bar{4}c2$ (120)	$\langle 2; 3 + (0,0,2u); 5 + (0,0,\frac{p}{2} - \frac{1}{2}) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	$\mathbf{a}, \mathbf{b}, p\mathbf{c}$	0, 0, u
[p^2] $\mathbf{a}' = p\mathbf{a}, \mathbf{b}' = p\mathbf{b}$			
$I\bar{4}c2$ (120)	$\langle 2 + (2u, 2v, 0); 3 + (u-v, u+v, 0); 5 + (0, 2v, 0) \rangle$ $p > 2; 0 \leq u < p; 0 \leq v < p$ p^2 conjugate subgroups for the prime p	$p\mathbf{a}, p\mathbf{b}, \mathbf{c}$	$u, v, 0$

I Minimal translationengleiche supergroups

 [2] $I4/mcm$ (140); [2] $I4_1/acd$ (142); [3] $F\bar{4}3c$ (219)

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

none

• Decreased unit cell

 [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ $C\bar{4}m2$ (111, $P\bar{4}2m$)