

$I\bar{4}c2$ 

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

	(0,0,0)+	$(\frac{1}{2},\frac{1}{2},\frac{1}{2})+$		
16 <i>i</i> 1	(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)+	$\mathbf{a-b, a+b, c}$	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)	$\langle 2; 3; 5 + (0,0,1) \rangle$	$\mathbf{a, b, 3c}$	
$I\bar{4}c2$ (120)	$\langle 2; 3 + (0,0,2); 5 + (0,0,1) \rangle$	$\mathbf{a, b, 3c}$	0,0,1
$I\bar{4}c2$ (120)	$\langle 2; 3 + (0,0,4); 5 + (0,0,1) \rangle$	$\mathbf{a, b, 3c}$	0,0,2

## • Series of maximal isomorphic subgroups

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

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,  $P\bar{4}2m$ )