$P4bm$ No. 100 $P4bm$ C_{4v}^2

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

I Maximal *translationengleiche* subgroups

[2] $P411$ (75, $P4$)	1; 2; 3; 4		
[2] $P21m$ (35, $Cmm2$)	1; 2; 7; 8	$\mathbf{a}-\mathbf{b},\mathbf{a}+\mathbf{b},\mathbf{c}$	$0,1/2,0$
[2] $P2b1$ (32, $Pba2$)	1; 2; 5; 6		

II Maximal *klassengleiche* subgroups

- **Enlarged unit cell**

[2] $\mathbf{c}' = 2\mathbf{c}$

$P4_2bc$ (106)	$\langle 2;\ 5;\ 3+(0,0,1)\rangle$	$\mathbf{a},\mathbf{b},2\mathbf{c}$	
$P4nc$ (104)	$\langle 2;\ 3;\ 5+(0,0,1)\rangle$	$\mathbf{a},\mathbf{b},2\mathbf{c}$	
$P4_2nm$ (102)	$\langle 2;\ (3;\ 5)+(0,0,1)\rangle$	$\mathbf{a},\mathbf{b},2\mathbf{c}$	$0,1/2,0$
$P4bm$ (100)	$\langle 2;\ 3;\ 5\rangle$	$\mathbf{a},\mathbf{b},2\mathbf{c}$	

[3] $\mathbf{c}' = 3\mathbf{c}$

$P4bm$ (100)	$\langle 2;\ 3;\ 5\rangle$	$\mathbf{a},\mathbf{b},3\mathbf{c}$	

- **Series of maximal isomorphic subgroups**

[p] $\mathbf{c}' = p\mathbf{c}$

$P4bm$ (100)	$\langle 2;\ 3;\ 5\rangle$ p prime no conjugate subgroups	$\mathbf{a},\mathbf{b},p\mathbf{c}$	

[p^2] $\mathbf{a}' = p\mathbf{a},\ \mathbf{b}' = p\mathbf{b}$

$P4bm$ (100)	$\langle 2+(2u,2v,0);\ 3+(u+v,-u+v,0);$ $5+(\frac{p}{2}-\frac{1}{2},\frac{p}{2}-\frac{1}{2}+2v,0)\rangle$ prime $p>2;\ 0\le u<p;\ 0\le v<p$ p^2 conjugate subgroups	$p\mathbf{a},p\mathbf{b},\mathbf{c}$	$u,v,0$

I Minimal *translationengleiche* supergroups

[2] $P4/nbm$ (125); [2] $P4/mbm$ (127)

II Minimal non-isomorphic *klassengleiche* supergroups

- **Additional centring translations**

[2] $C4mm$ (99, $P4mm$); [2] $I4cm$ (108)

- **Decreased unit cell** none

