

D_{2h}^{11}
 $P2/b2_1/c2_1/m$

No. 57

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

I Maximal translationengleiche subgroups

[2] $Pbc2_1$ (29, $Pca2_1$)	1; 2; 7; 8	– b, a, c	
[2] $P2cm$ (28, $Pma2$)	1; 4; 6; 7	c, b, –a	0, 1/4, 0
[2] $Pb2_1m$ (26, $Pmc2_1$)	1; 3; 6; 8	c, a, b	0, 0, 1/4
[2] $P22_12_1$ (18, $P2_12_12$)	1; 2; 3; 4	b, c, a	0, 1/4, 0
[2] $P12_1/c1$ (14)	1; 3; 5; 7		
[2] $P2/b11$ (13, $P12/c1$)	1; 4; 5; 8	c, a, b	
[2] $P112_1/m$ (11, $P112_1/m$)	1; 2; 5; 6		

II Maximal klassengleiche subgroups

• Enlarged unit cell

[2] $a' = 2a$			
$Pbnm$ (62, $Pnma$) $Pbnm$ (62, $Pnma$) $Pbca$ (61) $Pbca$ (61) $Pbna$ (60, $Pbcn$) $Pbna$ (60, $Pbcn$) $Pbcm$ (57) $Pbcm$ (57)	$\langle 2; 5; 3 + (1, 0, 0) \rangle$ $\langle 3; (2; 5) + (1, 0, 0) \rangle$ $\langle 3; 5; 2 + (1, 0, 0) \rangle$ $\langle 2; (3; 5) + (1, 0, 0) \rangle$ $\langle 5; (2; 3) + (1, 0, 0) \rangle$ $\langle 2; 3; 5 + (1, 0, 0) \rangle$ $\langle 2; 3; 5 \rangle$ $\langle (2; 3; 5) + (1, 0, 0) \rangle$	b, c, 2a b, c, 2a 2a, b, c 2a, b, c c, 2a, b c, 2a, b 2a, b, c 2a, b, c	 1/2, 0, 0 1/2, 0, 0 1/2, 0, 0 1/2, 0, 0
[3] $a' = 3a$			
$Pbcm$ (57) $Pbcm$ (57) $Pbcm$ (57)	$\langle 2; 3; 5 \rangle$ $\langle (2; 3; 5) + (2, 0, 0) \rangle$ $\langle (2; 3; 5) + (4, 0, 0) \rangle$	3a, b, c 3a, b, c 3a, b, c	 1, 0, 0 2, 0, 0
[3] $b' = 3b$			
$Pbcm$ (57) $Pbcm$ (57) $Pbcm$ (57)	$\langle 2; 5; 3 + (0, 1, 0) \rangle$ $\langle (2; 5) + (0, 2, 0); 3 + (0, 1, 0) \rangle$ $\langle (2; 5) + (0, 4, 0); 3 + (0, 1, 0) \rangle$	a, 3b, c a, 3b, c a, 3b, c	 0, 1, 0 0, 2, 0
[3] $c' = 3c$			
$Pbcm$ (57) $Pbcm$ (57) $Pbcm$ (57)	$\langle 5; (2; 3) + (0, 0, 1) \rangle$ $\langle 2 + (0, 0, 1); 3 + (0, 0, 3); 5 + (0, 0, 2) \rangle$ $\langle 2 + (0, 0, 1); 3 + (0, 0, 5); 5 + (0, 0, 4) \rangle$	a, b, 3c a, b, 3c a, b, 3c	 0, 0, 1 0, 0, 2

• Series of maximal isomorphic subgroups

[p] $a' = pa$	$Pbcm$ (57) $\langle (2; 3; 5) + (2u, 0, 0) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	pa, b, c	$u, 0, 0$
[p] $b' = pb$	$Pbcm$ (57) $\langle (2; 5) + (0, 2u, 0); 3 + (0, \frac{p}{2} - \frac{1}{2}, 0) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	a, pb, c	$0, u, 0$
[p] $c' = pc$	$Pbcm$ (57) $\langle 2 + (0, 0, \frac{p}{2} - \frac{1}{2}); 3 + (0, 0, \frac{p}{2} - \frac{1}{2} + 2u); 5 + (0, 0, 2u) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	a, b, pc	$0, 0, u$

I Minimal translationengleiche supergroups

none

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

 [2] $Cmcm$ (63); [2] $Bbcm$ (64, $Cmce$); [2] $Aemm$ (67, $Cmme$); [2] $Ibam$ (72)

• Decreased unit cell

 [2] $b' = \frac{1}{2}b$ $Pbcm$ (51, $Pmma$); [2] $c' = \frac{1}{2}c$ $Pbcm$ (51, $Pmma$)