

P622

No. 177

P622
D₆¹
Generators selected (1); $\iota(1,0,0)$; $\iota(0,1,0)$; $\iota(0,0,1)$; (2); (4); (7)

General position

 Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

12	<i>n</i>	1	(1) x, y, z	(2) $\bar{y}, x - y, z$	(3) $\bar{x} + y, \bar{x}, z$
			(4) \bar{x}, \bar{y}, z	(5) $y, \bar{x} + y, z$	(6) $x - y, x, z$
			(7) y, x, \bar{z}	(8) $x - y, \bar{y}, \bar{z}$	(9) $\bar{x}, \bar{x} + y, \bar{z}$
			(10) $\bar{y}, \bar{x}, \bar{z}$	(11) $\bar{x} + y, y, \bar{z}$	(12) $x, x - y, \bar{z}$

I Maximal translationengleiche subgroups

[2] <i>P</i> ₆₁₁ (168, <i>P</i> ₆)	1; 2; 3; 4; 5; 6	
[2] <i>P</i> ₃₂₁ (150)	1; 2; 3; 7; 8; 9	
[2] <i>P</i> ₃₁₂ (149)	1; 2; 3; 10; 11; 12	
[3] <i>P</i> ₂₂₂ (21, <i>C</i> ₂₂₂)	1; 4; 7; 10	a - b, a + b, c
[3] <i>P</i> ₂₂₂ (21, <i>C</i> ₂₂₂)	1; 4; 8; 11	-a - 2b, a, c
[3] <i>P</i> ₂₂₂ (21, <i>C</i> ₂₂₂)	1; 4; 9; 12	2a + b, b, c

II Maximal klassengleiche subgroups

• Enlarged unit cell

[2] $\mathbf{c}' = 2\mathbf{c}$			
<i>P</i> _{6₃22} (182)	$\langle 2; 7; 4 + (0, 0, 1) \rangle$	a, b, 2c	
<i>P</i> _{6₃22} (182)	$\langle 2; (4; 7) + (0, 0, 1) \rangle$	a, b, 2c	0, 0, 1/2
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 \rangle$	a, b, 2c	
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 + (0, 0, 1) \rangle$	a, b, 2c	0, 0, 1/2
[3] $\mathbf{c}' = 3\mathbf{c}$			
<i>P</i> _{6₄22} (181)	$\langle 4; (2; 7) + (0, 0, 1) \rangle$	a, b, 3c	
<i>P</i> _{6₄22} (181)	$\langle 4; 2 + (0, 0, 1); 7 + (0, 0, 3) \rangle$	a, b, 3c	0, 0, 1
<i>P</i> _{6₄22} (181)	$\langle 4; 2 + (0, 0, 1); 7 + (0, 0, 5) \rangle$	a, b, 3c	0, 0, 2
<i>P</i> _{6₂22} (180)	$\langle 4; (2; 7) + (0, 0, 2) \rangle$	a, b, 3c	
<i>P</i> _{6₂22} (180)	$\langle 4; 2 + (0, 0, 2); 7 + (0, 0, 4) \rangle$	a, b, 3c	0, 0, 1
<i>P</i> _{6₂22} (180)	$\langle 4; 2 + (0, 0, 2); 7 + (0, 0, 6) \rangle$	a, b, 3c	0, 0, 2
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 \rangle$	a, b, 3c	
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 + (0, 0, 2) \rangle$	a, b, 3c	0, 0, 1
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 + (0, 0, 4) \rangle$	a, b, 3c	0, 0, 2
[3] $\mathbf{a}' = 3\mathbf{a}, \mathbf{b}' = 3\mathbf{b}$			
<i>H</i> ₆₂₂ (177, <i>P</i> ₆₂₂)	$\langle 2; 4; 7 \rangle$	a - b, a + 2b, c	
<i>H</i> ₆₂₂ (177, <i>P</i> ₆₂₂)	$\langle (2; 7) + (1, -1, 0); 4 + (2, 0, 0) \rangle$	a - b, a + 2b, c	1, 0, 0
<i>H</i> ₆₂₂ (177, <i>P</i> ₆₂₂)	$\langle (2; 7) + (2, -2, 0); 4 + (4, 0, 0) \rangle$	a - b, a + 2b, c	2, 0, 0
[4] $\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}$			
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 \rangle$	2a, 2b, c	
<i>P</i> ₆₂₂ (177)	$\langle (2; 7) + (1, -1, 0); 4 + (2, 0, 0) \rangle$	2a, 2b, c	1, 0, 0
<i>P</i> ₆₂₂ (177)	$\langle 2 + (1, 2, 0); 4 + (0, 2, 0); 7 + (-1, 1, 0) \rangle$	2a, 2b, c	0, 1, 0
<i>P</i> ₆₂₂ (177)	$\langle 7; 2 + (2, 1, 0); 4 + (2, 2, 0) \rangle$	2a, 2b, c	1, 1, 0

• Series of maximal isomorphic subgroups

[<i>p</i>] $\mathbf{c}' = p\mathbf{c}$			
<i>P</i> ₆₂₂ (177)	$\langle 2; 4; 7 + (0, 0, 2u) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	a, b, pc	0, 0, u
[p^2] $\mathbf{a}' = p\mathbf{a}, \mathbf{b}' = p\mathbf{b}$			
<i>P</i> ₆₂₂ (177)	$\langle 2 + (u + v, -u + 2v, 0); 4 + (2u, 2v, 0); 7 + (u - v, -u + v, 0) \rangle$ $p > 1; p \neq 3; 0 \leq u < p; 0 \leq v < p$ p^2 conjugate subgroups for the prime p	pa, pb, c	$u, v, 0$

I Minimal translationengleiche supergroups

 [2] *P*_{6/mmm} (191); [2] *P*_{6/mcc} (192)

II Minimal non-isomorphic klassengleiche supergroups

none