

$p4mm$

No. 11

$p4mm$

Generators selected (1); $t(1,0)$; $t(0,1)$; (2); (3); (5)

General position

Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

8 g 1

(1) x, y (2) \bar{x}, \bar{y} (3) \bar{y}, x (4) y, \bar{x}
(5) \bar{x}, y (6) x, \bar{y} (7) y, x (8) \bar{y}, \bar{x}

I Maximal translationengleiche subgroups

[2] $p411$ (10, $p4$)	1; 2; 3; 4	
[2] $p21m$ (9, $c2mm$)	1; 2; 7; 8	$\mathbf{a - b, a + b}$
[2] $p2m1$ (6, $p2mm$)	1; 2; 5; 6	

II Maximal klassengleiche subgroups

• **Enlarged unit cell**

[2] $\mathbf{a' = 2a, b' = 2b}$			
$c4mg$ (12, $p4gm$)	$\langle 2 + (1, 1); 3 + (1, 0); 5 + (2, 0) \rangle$	$\mathbf{a - b, a + b}$	1/2, 1/2
$c4mg$ (12, $p4gm$)	$\langle 2; 3; 5 + (1, 0) \rangle$	$\mathbf{a - b, a + b}$	
$c4mm$ (11, $p4mm$)	$\langle 2; 3; 5 \rangle$	$\mathbf{a - b, a + b}$	
$c4mm$ (11, $p4mm$)	$\langle 2 + (1, 1); (3; 5) + (1, 0) \rangle$	$\mathbf{a - b, a + b}$	1/2, 1/2

• **Series of maximal isomorphic subgroups**

$[p^2] \mathbf{a' = pa, b' = pb}$			
$p4mm$ (11)	$\langle 2 + (2u, 2v); 3 + (u + v, -u + v); 5 + (2u, 0) \rangle$ $p > 2; 0 \leq u < p; 0 \leq v < p$ p^2 conjugate subgroups for the prime p	$\mathbf{pa, pb}$	u, v

I Minimal translationengleiche supergroups

none

II Minimal non-isomorphic klassengleiche supergroups

none