

$p4mm$

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] $\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}$			
$c4mg$ (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**

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

I Minimal translationengleiche supergroups none

II Minimal non-isomorphic klassengleiche supergroups none