

$p2gg$ 

No. 8

 $p2gg$ 
**Generators selected** (1);  $t(1,0)$ ;  $t(0,1)$ ; (2); (3)

**General position**

 Multiplicity,  
 Wyckoff letter,  
 Site symmetry

Coordinates

 4 c 1 (1)  $x, y$  (2)  $\bar{x}, \bar{y}$  (3)  $\bar{x} + \frac{1}{2}, y + \frac{1}{2}$  (4)  $x + \frac{1}{2}, \bar{y} + \frac{1}{2}$ 
**I Maximal translationengleiche subgroups**

[2] $p1g1$ (4, $pg$ )	1; 3		$1/4, 0$
[2] $p11g$ (4, $pg$ )	1; 4	$-\mathbf{b}, \mathbf{a}$	$0, 1/4$
[2] $p211$ (2, $p2$ )	1; 2		

**II Maximal klassengleiche subgroups**

## • Enlarged unit cell

[3] $\mathbf{a}' = 3\mathbf{a}$			
$\left\{ \begin{array}{l} p2gg \text{ (8)} \\ p2gg \text{ (8)} \\ p2gg \text{ (8)} \end{array} \right.$	$\langle 2; 3 + (1, 0) \rangle$ $\langle 2 + (2, 0); 3 + (3, 0) \rangle$ $\langle 2 + (4, 0); 3 + (5, 0) \rangle$	$3\mathbf{a}, \mathbf{b}$ $3\mathbf{a}, \mathbf{b}$ $3\mathbf{a}, \mathbf{b}$	$1, 0$ $2, 0$
[3] $\mathbf{b}' = 3\mathbf{b}$			
$\left\{ \begin{array}{l} p2gg \text{ (8)} \\ p2gg \text{ (8)} \\ p2gg \text{ (8)} \end{array} \right.$	$\langle 2; 3 + (0, 1) \rangle$ $\langle 2 + (0, 2); 3 + (0, 1) \rangle$ $\langle 2 + (0, 4); 3 + (0, 1) \rangle$	$\mathbf{a}, 3\mathbf{b}$ $\mathbf{a}, 3\mathbf{b}$ $\mathbf{a}, 3\mathbf{b}$	$0, 1$ $0, 2$

## • Series of maximal isomorphic subgroups

[ $p$ ] $\mathbf{a}' = p\mathbf{a}$			
$p2gg$ (8)	$\langle 2 + (2u, 0); 3 + (\frac{p}{2} - \frac{1}{2} + 2u, 0) \rangle$ prime $p > 2$ ; $0 \leq u < p$ $p$ conjugate subgroups	$p\mathbf{a}, \mathbf{b}$	$u, 0$
[ $p$ ] $\mathbf{b}' = p\mathbf{b}$			
$p2gg$ (8)	$\langle 2 + (0, 2u); 3 + (0, \frac{p}{2} - \frac{1}{2}) \rangle$ prime $p > 2$ ; $0 \leq u < p$ $p$ conjugate subgroups	$\mathbf{a}, p\mathbf{b}$	$0, u$

**I Minimal translationengleiche supergroups**

 [2]  $p4gm$  (12)

**II Minimal non-isomorphic klassengleiche supergroups**

## • Additional centring translations

 [2]  $c2mm$  (9)

## • Decreased unit cell

 [2]  $\mathbf{a}' = \frac{1}{2}\mathbf{a}$   $p2mg$  (7); [2]  $\mathbf{b}' = \frac{1}{2}\mathbf{b}$   $p2gm$  (7,  $p2mg$ )