

$cm$ 

No. 5

 $c1m1$ 

 Generators selected  $(1); t(1,0); t(0,1); t(\frac{1}{2}, \frac{1}{2}); (2)$ 
**General position**

 Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

 $(0,0)+ (\frac{1}{2}, \frac{1}{2})+$ 

 4  $b$  1

 (1)  $x,y$  (2)  $\bar{x},y$ 
**I Maximal translationengleiche subgroups**

 [2]  $c1 (1, p1)$   $1+$   $1/2(\mathbf{a}-\mathbf{b}), 1/2(\mathbf{a}+\mathbf{b})$ 
**II Maximal klassengleiche subgroups**

## • Loss of centring translations

 [2]  $pg (4)$   $1; 2+(\frac{1}{2}, \frac{1}{2})$   $1/4, 0$   
 [2]  $pm (3)$   $1; 2$ 

## • Enlarged unit cell

 [3]  $\mathbf{a}' = 3\mathbf{a}$   
 $\begin{cases} cm (5) & \langle 2 \rangle & 3\mathbf{a}, \mathbf{b} \\ cm (5) & \langle 2+(2,0) \rangle & 3\mathbf{a}, \mathbf{b} & 1,0 \\ cm (5) & \langle 2+(4,0) \rangle & 3\mathbf{a}, \mathbf{b} & 2,0 \end{cases}$   
 [3]  $\mathbf{b}' = 3\mathbf{b}$   
 $cm (5)$   $\langle 2 \rangle$   $\mathbf{a}, 3\mathbf{b}$ 

## • Series of maximal isomorphic subgroups

 [p]  $\mathbf{a}' = p\mathbf{a}$   
 $cm (5)$   $\langle 2+(2u,0) \rangle$   $p\mathbf{a}, \mathbf{b}$   $u, 0$   
 prime  $p > 2; 0 \leq u < p$   
 $p$  conjugate subgroups  
 [p]  $\mathbf{b}' = p\mathbf{b}$   
 $cm (5)$   $\langle 2 \rangle$   $\mathbf{a}, p\mathbf{b}$   
 prime  $p > 2$   
 no conjugate subgroups

**I Minimal translationengleiche supergroups**

 [2]  $c2mm (9)$ ; [3]  $p3m1 (14)$ ; [3]  $p31m (15)$ 
**II Minimal non-isomorphic klassengleiche supergroups**

## • Additional centring translations

none

## • Decreased unit cell

 [2]  $\mathbf{a}' = \frac{1}{2}\mathbf{a}, \mathbf{b}' = \frac{1}{2}\mathbf{b}$   $pm (3)$