

$C_{2v}^{16}$ 
 $Ama2$ 

No. 40

 $Ama2$ 
**Generators selected** (1);  $t(1,0,0)$ ;  $t(0,1,0)$ ;  $t(0,0,1)$ ;  $t(0, \frac{1}{2}, \frac{1}{2})$ ; (2); (3)

**General position**

 Multiplicity,  
Wyckoff letter,  
Site symmetry

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

 8  $c$  1

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

[2] $A1a1$ (9, $C1c1$ )	(1; 3)+	<b>c, b, -a</b>	
[2] $Am11$ (6, $P1m1$ )	(1; 4)+	$1/2(\mathbf{b} + \mathbf{c}), \mathbf{a}, 1/2(\mathbf{b} - \mathbf{c})$	1/4, 0, 0
[2] $A112$ (5)	(1; 2)+		

**II Maximal klassengleiche subgroups**

## • Loss of centring translations

[2] $Pnn2$ (34)	1; 2; (3; 4) + $(0, \frac{1}{2}, \frac{1}{2})$		
[2] $Pna2_1$ (33)	1; 3; (2; 4) + $(0, \frac{1}{2}, \frac{1}{2})$		0, 1/4, 0
[2] $Pmm2_1$ (31)	1; 4; (2; 3) + $(0, \frac{1}{2}, \frac{1}{2})$		1/4, 1/4, 0
[2] $Pma2$ (28)	1; 2; 3; 4		

## • Enlarged unit cell

[3] $\mathbf{a}' = 3\mathbf{a}$			
$\left\{ \begin{array}{l} Ama2 \text{ (40)} \\ Ama2 \text{ (40)} \\ Ama2 \text{ (40)} \end{array} \right.$	$\langle 2; 3 + (1, 0, 0) \rangle$ $\langle 2 + (2, 0, 0); 3 + (1, 0, 0) \rangle$ $\langle 2 + (4, 0, 0); 3 + (1, 0, 0) \rangle$	<b>3a, b, c</b> <b>3a, b, c</b> <b>3a, b, c</b>	 1, 0, 0 2, 0, 0
[3] $\mathbf{b}' = 3\mathbf{b}$			
$\left\{ \begin{array}{l} Ama2 \text{ (40)} \\ Ama2 \text{ (40)} \\ Ama2 \text{ (40)} \end{array} \right.$	$\langle 2; 3 \rangle$ $\langle (2; 3) + (0, 2, 0) \rangle$ $\langle (2; 3) + (0, 4, 0) \rangle$	<b>a, 3b, c</b> <b>a, 3b, c</b> <b>a, 3b, c</b>	 0, 1, 0 0, 2, 0
[3] $\mathbf{c}' = 3\mathbf{c}$			
$Ama2$ (40)	$\langle 2; 3 \rangle$	<b>a, b, 3c</b>	

## • Series of maximal isomorphic subgroups

[p] $\mathbf{a}' = p\mathbf{a}$			
$Ama2$ (40)	$\langle 2 + (2u, 0, 0); 3 + (\frac{p}{2} - \frac{1}{2}, 0, 0) \rangle$ $p > 2; 0 \leq u < p$ $p$ conjugate subgroups for the prime $p$	<b>pa, b, c</b>	$u, 0, 0$
[p] $\mathbf{b}' = p\mathbf{b}$			
$Ama2$ (40)	$\langle (2; 3) + (0, 2u, 0) \rangle$ $p > 2; 0 \leq u < p$ $p$ conjugate subgroups for the prime $p$	<b>a, pb, c</b>	$0, u, 0$
[p] $\mathbf{c}' = p\mathbf{c}$			
$Ama2$ (40)	$\langle 2; 3 \rangle$ $p > 2$ no conjugate subgroups	<b>a, b, pc</b>	

**I Minimal translationengleiche supergroups**

 [2]  $Cmcm$  (63); [2]  $Cccm$  (66); [3]  $P\bar{6}c2$  (188); [3]  $P\bar{6}2c$  (190)

**II Minimal non-isomorphic klassengleiche supergroups**

## • Additional centring translations

 [2]  $Fmm2$  (42)

## • Decreased unit cell

 [2]  $\mathbf{b}' = \frac{1}{2}\mathbf{b}, \mathbf{c}' = \frac{1}{2}\mathbf{c}$   $Pma2$  (28); [2]  $\mathbf{a}' = \frac{1}{2}\mathbf{a}$   $Amm2$  (38)