

C_{2v}^{14}
 $Amm2$

No. 38

 $Amm2$
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

 8 f 1

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

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

[2] $A1m1$ (8, $C1m1$)	(1; 3)+	$\mathbf{c}, \mathbf{b}, -\mathbf{a} - \mathbf{c}$
[2] $Am11$ (6, $P1m1$)	(1; 4)+	$1/2(\mathbf{b} + \mathbf{c}), \mathbf{a}, 1/2(\mathbf{b} - \mathbf{c})$
[2] $A112$ (5)	(1; 2)+	

II Maximal klassengleiche subgroups

• Loss of centring translations

[2] $Pnm2_1$ (31, $Pmn2_1$)	1; 3; (2; 4) + $(0, \frac{1}{2}, \frac{1}{2})$	$-\mathbf{b}, \mathbf{a}, \mathbf{c}$
[2] $Pnc2$ (30)	1; 2; (3; 4) + $(0, \frac{1}{2}, \frac{1}{2})$	
[2] $Pmc2_1$ (26)	1; 4; (2; 3) + $(0, \frac{1}{2}, \frac{1}{2})$	0, 1/4, 0
[2] $Pmm2$ (25)	1; 2; 3; 4	

• Enlarged unit cell

[2] $\mathbf{a}' = 2\mathbf{a}$			
$Ima2$ (46)	$\langle 2; 3 + (1, 0, 0) \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	
$Ima2$ (46)	$\langle (2; 3) + (1, 0, 0) \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	1/2, 0, 0
$Imm2$ (44)	$\langle 2; 3 \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	
$Imm2$ (44)	$\langle 3; 2 + (1, 0, 0) \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	1/2, 0, 0
$Ama2$ (40)	$\langle 2; 3 + (1, 0, 0) \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	
$Ama2$ (40)	$\langle (2; 3) + (1, 0, 0) \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	1/2, 0, 0
$Amm2$ (38)	$\langle 2; 3 \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	
$Amm2$ (38)	$\langle 3; 2 + (1, 0, 0) \rangle$	$2\mathbf{a}, \mathbf{b}, \mathbf{c}$	1/2, 0, 0
[3] $\mathbf{a}' = 3\mathbf{a}$			
$Amm2$ (38)	$\langle 2; 3 \rangle$	$3\mathbf{a}, \mathbf{b}, \mathbf{c}$	
$Amm2$ (38)	$\langle 3; 2 + (2, 0, 0) \rangle$	$3\mathbf{a}, \mathbf{b}, \mathbf{c}$	1, 0, 0
$Amm2$ (38)	$\langle 3; 2 + (4, 0, 0) \rangle$	$3\mathbf{a}, \mathbf{b}, \mathbf{c}$	2, 0, 0
[3] $\mathbf{b}' = 3\mathbf{b}$			
$Amm2$ (38)	$\langle 2; 3 \rangle$	$\mathbf{a}, 3\mathbf{b}, \mathbf{c}$	
$Amm2$ (38)	$\langle (2; 3) + (0, 2, 0) \rangle$	$\mathbf{a}, 3\mathbf{b}, \mathbf{c}$	0, 1, 0
$Amm2$ (38)	$\langle (2; 3) + (0, 4, 0) \rangle$	$\mathbf{a}, 3\mathbf{b}, \mathbf{c}$	0, 2, 0
[3] $\mathbf{c}' = 3\mathbf{c}$			
$Amm2$ (38)	$\langle 2; 3 \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	

• Series of maximal isomorphic subgroups

[p] $\mathbf{a}' = p\mathbf{a}$			
$Amm2$ (38)	$\langle 3; 2 + (2u, 0, 0) \rangle$	$p\mathbf{a}, \mathbf{b}, \mathbf{c}$	$u, 0, 0$
	$p > 2; 0 \leq u < p$		
	p conjugate subgroups for the prime p		
[p] $\mathbf{b}' = p\mathbf{b}$			
$Amm2$ (38)	$\langle (2; 3) + (0, 2u, 0) \rangle$	$\mathbf{a}, p\mathbf{b}, \mathbf{c}$	$0, u, 0$
	$p > 2; 0 \leq u < p$		
	p conjugate subgroups for the prime p		
[p] $\mathbf{c}' = p\mathbf{c}$			
$Amm2$ (38)	$\langle 2; 3 \rangle$	$\mathbf{a}, \mathbf{b}, p\mathbf{c}$	
	$p > 2$		
	no conjugate subgroups		

I Minimal translationengleiche supergroups

 [2] $Cmcm$ (63); [2] $Cmmm$ (65); [3] $P\bar{6}m2$ (187); [3] $P\bar{6}2m$ (189)

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

 [2] $Fmm2$ (42)

• Decreased unit cell

 [2] $\mathbf{b}' = \frac{1}{2}\mathbf{b}, \mathbf{c}' = \frac{1}{2}\mathbf{c}$ $Pmm2$ (25)