

$Cmm2$

No. 35

 $Cmm2$
 C_{2v}^{11}
Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; $t(\frac{1}{2},\frac{1}{2},0)$; (2); (3)

General position

Multiplicity, Wyckoff letter, Site symmetry	Coordinates
8 <i>f</i> 1	(0,0,0)+ $(\frac{1}{2},\frac{1}{2},0)$ + (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] $C1m1$ (8)	(1; 3)+	
[2] $Cm11$ (8, $C1m1$)	(1; 4)+	– b, a, c
[2] $C112$ (3, $P112$)	(1; 2)+	$1/2(\mathbf{a}-\mathbf{b}), 1/2(\mathbf{a}+\mathbf{b}), \mathbf{c}$

II Maximal klassengleiche subgroups

• Loss of centring translations

[2] $Pba2$ (32)	1; 2; (3; 4) + $(\frac{1}{2},\frac{1}{2},0)$		
[2] $Pbm2$ (28, $Pma2$)	1; 3; (2; 4) + $(\frac{1}{2},\frac{1}{2},0)$	– b, a, c	$1/4, 1/4, 0$
[2] $Pma2$ (28)	1; 4; (2; 3) + $(\frac{1}{2},\frac{1}{2},0)$		$1/4, 1/4, 0$
[2] $Pmm2$ (25)	1; 2; 3; 4		

• Enlarged unit cell

[2] $\mathbf{c}' = 2\mathbf{c}$			
$Ima2$ (46)	$\langle(2; 3) + (0,0,1)\rangle$	a, b, 2c	$1/4, 1/4, 0$
$Ibm2$ (46, $Ima2$)	$\langle 3; 2 + (0,0,1)\rangle$	– b, a, 2c	$1/4, 1/4, 0$
$Iba2$ (45)	$\langle 2; 3 + (0,0,1)\rangle$	a, b, 2c	
$Imm2$ (44)	$\langle 2; 3\rangle$	a, b, 2c	
$Ccc2$ (37)	$\langle 2; 3 + (0,0,1)\rangle$	a, b, 2c	
$Cmc2_1$ (36)	$\langle(2; 3) + (0,0,1)\rangle$	a, b, 2c	
$Ccm2_1$ (36, $Cmc2_1$)	$\langle 3; 2 + (0,0,1)\rangle$	– b, a, 2c	
$Cmm2$ (35)	$\langle 2; 3\rangle$	a, b, 2c	
[3] $\mathbf{a}' = 3\mathbf{a}$			
$Cmm2$ (35)	$\langle 2; 3\rangle$	3a, b, c	
$Cmm2$ (35)	$\langle 3; 2 + (2,0,0)\rangle$	3a, b, c	$1, 0, 0$
$Cmm2$ (35)	$\langle 3; 2 + (4,0,0)\rangle$	3a, b, c	$2, 0, 0$
[3] $\mathbf{b}' = 3\mathbf{b}$			
$Cmm2$ (35)	$\langle 2; 3\rangle$	a, 3b, c	
$Cmm2$ (35)	$\langle(2; 3) + (0,2,0)\rangle$	a, 3b, c	$0, 1, 0$
$Cmm2$ (35)	$\langle(2; 3) + (0,4,0)\rangle$	a, 3b, c	$0, 2, 0$
[3] $\mathbf{c}' = 3\mathbf{c}$			
$Cmm2$ (35)	$\langle 2; 3\rangle$	a, b, 3c	

• Series of maximal isomorphic subgroups

[p] $\mathbf{a}' = p\mathbf{a}$			
$Cmm2$ (35)	$\langle 3; 2 + (2u,0,0)\rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	pa, b, c	$u, 0, 0$
[p] $\mathbf{b}' = p\mathbf{b}$			
$Cmm2$ (35)	$\langle(2; 3) + (0,2u,0)\rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	a, pb, c	$0, u, 0$
[p] $\mathbf{c}' = p\mathbf{c}$			
$Cmm2$ (35)	$\langle 2; 3\rangle$ $p > 1$ no conjugate subgroups	a, b, pc	

I Minimal translationengleiche supergroups

[2] $Cmmm$ (65); [2] $Cmme$ (67); [2] $P4mm$ (99); [2] $P4bm$ (100); [2] $P4_2cm$ (101); [2] $P4_2nm$ (102); [2] $P\bar{4}2m$ (111); [2] $P\bar{4}2_1m$ (113); [3] $P6mm$ (183)

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

[2] $Fmm2$ (42)

• Decreased unit cell

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