

$Amm2$

C_{2v}^{14}

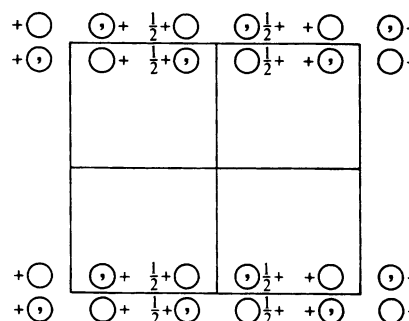
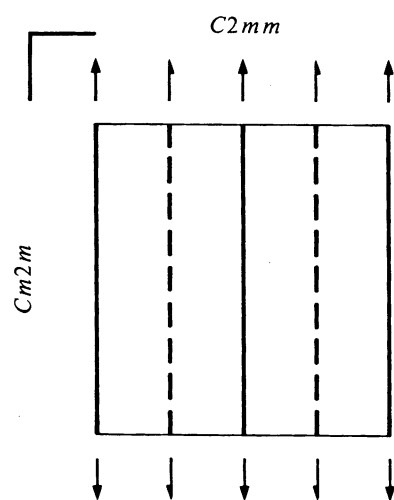
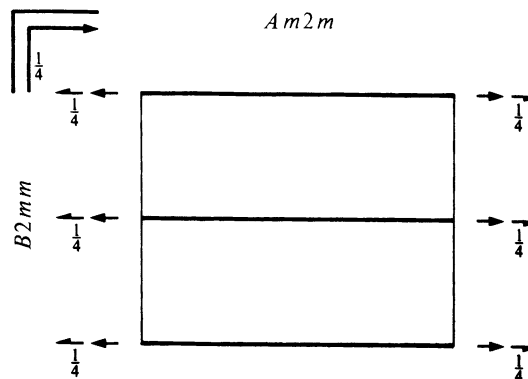
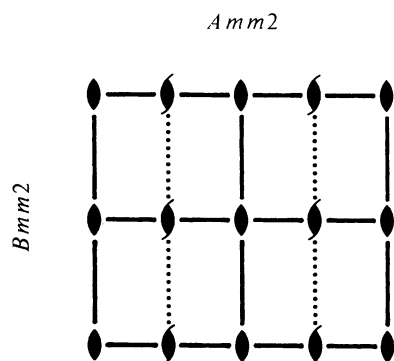
$mm2$

Orthorhombic

No. 38

$Amm2$

Patterson symmetry $Ammm$ ($Cmmm$)



Origin on $mm2$

Asymmetric unit $0 \leq x \leq \frac{1}{2}; 0 \leq y \leq \frac{1}{2}; 0 \leq z \leq \frac{1}{2}$

Symmetry operations

For $(0,0,0)+$ set

- (1) 1 (2) 2 $0,0,z$ (3) m $x,0,z$ (4) m $0,y,z$

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

- (1) $t(0, \frac{1}{2}, \frac{1}{2})$ (2) $2(0,0, \frac{1}{2})$ $0, \frac{1}{4}, z$ (3) c $x, \frac{1}{4}, z$ (4) $n(0, \frac{1}{2}, \frac{1}{2})$ $0,y,z$

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)

Positions

Multiplicity, Wyckoff letter, Site symmetry	Coordinates				Reflection conditions
	$(0,0,0)+$	$(0, \frac{1}{2}, \frac{1}{2})+$			General:
8 <i>f</i> 1	(1) x,y,z	(2) \bar{x},\bar{y},z	(3) x,\bar{y},z	(4) \bar{x},y,z	$hkl : k+l=2n$ $0kl : k+l=2n$ $h0l : l=2n$ $hk0 : k=2n$ $0k0 : k=2n$ $00l : l=2n$
4 <i>e</i> <i>m</i> . .	$\frac{1}{2},y,z$	$\frac{1}{2},\bar{y},z$			Special: no extra conditions
4 <i>d</i> <i>m</i> . .	$0,y,z$	$0,\bar{y},z$			
4 <i>c</i> . <i>m</i> .	$x,0,z$	$\bar{x},0,z$			
2 <i>b</i> <i>m m</i> 2	$\frac{1}{2},0,z$				
2 <i>a</i> <i>m m</i> 2	$0,0,z$				

Symmetry of special projections

Along [001] $p2mm$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \frac{1}{2}\mathbf{b}$
 Origin at $0,0,z$

Along [100] $c1m1$
 $\mathbf{a}' = \mathbf{b}$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x,0,0$

Along [010] $p11m$
 $\mathbf{a}' = \frac{1}{2}\mathbf{c}$ $\mathbf{b}' = \mathbf{a}$
 Origin at $0,y,0$

Maximal non-isomorphic subgroups

I	[2] $A1m1$ (Cm , 8)	(1; 3)+
	[2] $Am11$ (Pm , 6)	(1; 4)+
	[2] $A112$ ($C2$, 5)	(1; 2)+
IIa	[2] $Pnm2_1$ ($Pmn2_1$, 31)	1; 3; (2; 4) + $(0, \frac{1}{2}, \frac{1}{2})$
	[2] $Pnc2$ (30)	1; 2; (3; 4) + $(0, \frac{1}{2}, \frac{1}{2})$
	[2] $Pmc2_1$ (26)	1; 4; (2; 3) + $(0, \frac{1}{2}, \frac{1}{2})$
	[2] $Pmm2$ (25)	1; 2; 3; 4
IIb	[2] $Ima2$ ($\mathbf{a}' = 2\mathbf{a}$) (46); [2] $Imm2$ ($\mathbf{a}' = 2\mathbf{a}$) (44); [2] $Ama2$ ($\mathbf{a}' = 2\mathbf{a}$) (40)	

Maximal isomorphic subgroups of lowest index

IIc [2] $Amm2$ ($\mathbf{a}' = 2\mathbf{a}$) (38); [3] $Amm2$ ($\mathbf{b}' = 3\mathbf{b}$) (38); [3] $Amm2$ ($\mathbf{c}' = 3\mathbf{c}$) (38)

Minimal non-isomorphic supergroups

I	[2] $Cmcm$ (63); [2] $Cmmm$ (65); [3] $P\bar{6}m2$ (187); [3] $P\bar{6}2m$ (189)
II	[2] $Fmm2$ (42); [2] $Pmm2$ ($\mathbf{b}' = \frac{1}{2}\mathbf{b}, \mathbf{c}' = \frac{1}{2}\mathbf{c}$) (25)