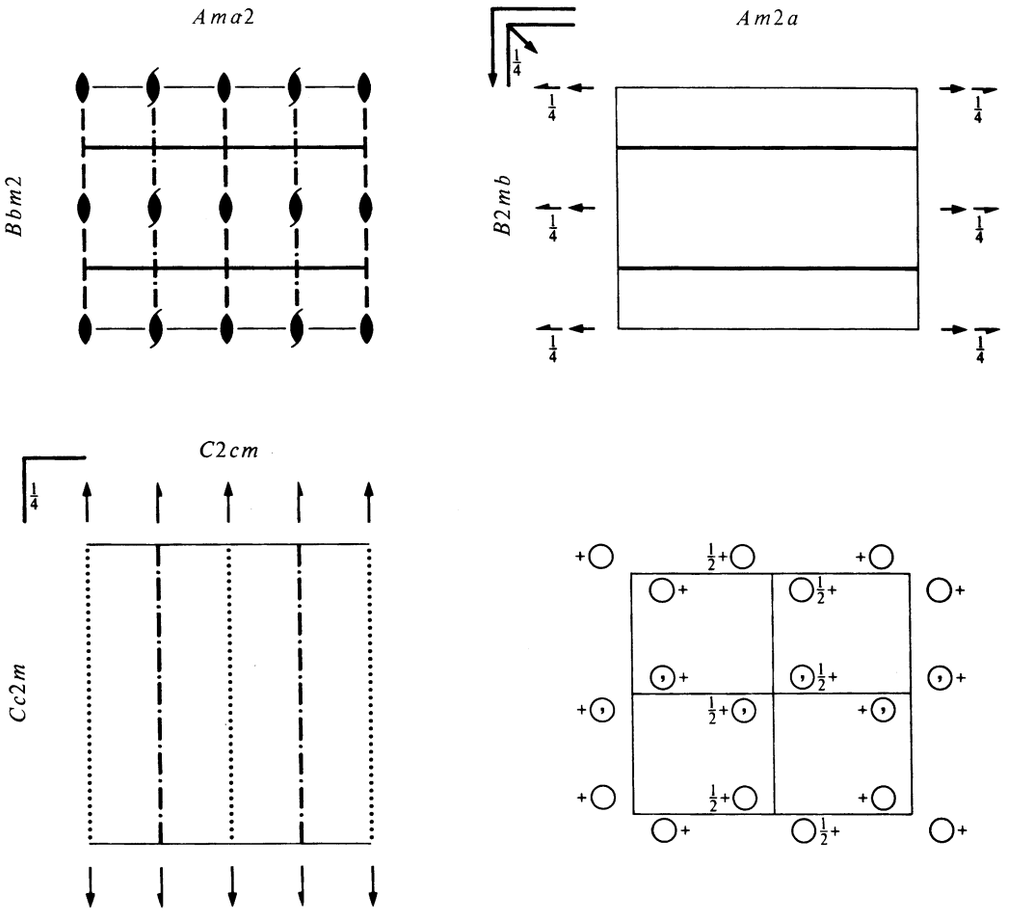
$Ama2$ C_{2v}^{16} $mm2$ Orthorhombic

No. 40 $Ama2$ Patterson symmetry $Ammm$ ($Cmmm$)



Origin on $1a2$

Asymmetric unit $0 \le x \le \frac{1}{4}$; $0 \le y \le \frac{1}{2}$; $0 \le z \le 1$

Symmetry operations

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

(1) 1 (2) 2 $0,0,z$ (3) a $x,0,z$ (4) m $\frac{1}{4},y,z$

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

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 $(0,0,0)+$ $(0,\frac{1}{2},\frac{1}{2})+$			Reflection conditions
						General:
8	c	1	(1) x,y,z	(2) $\bar{x},\bar{y},z$	(3) $x+\frac{1}{2},\bar{y},z$ (4) $\bar{x}+\frac{1}{2},y,z$	hkl : $k+l=2n$ $0kl$: $k+l=2n$ $h0l$: $h,l=2n$ $hk0$: $k=2n$ $h00$: $h=2n$ $0k0$: $k=2n$ $00l$: $l=2n$
						Special: as above, plus
4	b	m . .	$\frac{1}{4},y,z$	$\frac{3}{4},\bar{y},z$		no extra conditions
4	a	. . 2	$0,0,z$	$\frac{1}{2},0,z$		hkl : $h=2n$

Symmetry of special projections

Along [001] $p2mg$
$\mathbf{a}'=\mathbf{a}$ $\mathbf{b}'=\frac{1}{2}\mathbf{b}$
Origin at $0,0,z$

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

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

Maximal non-isomorphic subgroups

I [2] $A1a1$ (Cc, 9) (1; 3)+
[2] $Am11$ (Pm, 6) (1; 4)+
[2] $A112$ ($C2$, 5) (1; 2)+

IIa [2] $Pnn2$ (34) 1; 2; (3; 4) + $(0,\frac{1}{2},\frac{1}{2})$
[2] $Pna2_1$ (33) 1; 3; (2; 4) + $(0,\frac{1}{2},\frac{1}{2})$
[2] $Pmn2_1$ (31) 1; 4; (2; 3) + $(0,\frac{1}{2},\frac{1}{2})$
[2] $Pma2$ (28) 1; 2; 3; 4

IIb none

Maximal isomorphic subgroups of lowest index

IIc [3] $Ama2$ ($\mathbf{a}'=3\mathbf{a}$) (40); [3] $Ama2$ ($\mathbf{b}'=3\mathbf{b}$) (40); [3] $Ama2$ ($\mathbf{c}'=3\mathbf{c}$) (40)

Minimal non-isomorphic supergroups

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

II [2] $Fmm2$ (42); [2] $Pma2$ ($\mathbf{b}'=\frac{1}{2}\mathbf{b},\mathbf{c}'=\frac{1}{2}\mathbf{c}$) (28); [2] $Amm2$ ($\mathbf{a}'=\frac{1}{2}\mathbf{a}$) (38)