

$Cmm2$

$C_{2v}^{11}$

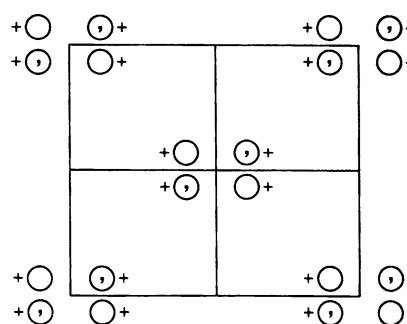
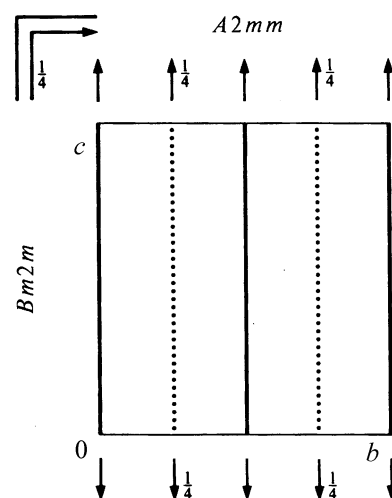
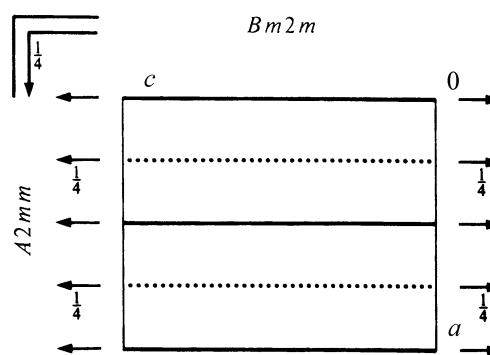
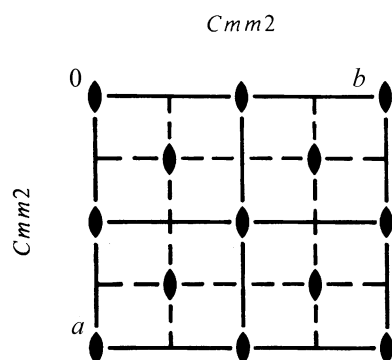
$mm2$

Orthorhombic

No. 35

$Cmm2$

Patterson symmetry  $Cmmm$



**Origin** on  $mm2$

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

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

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

**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)

**Positions**

Multiplicity, Wyckoff letter, Site symmetry		Coordinates				Reflection conditions
		$(0,0,0) + (\frac{1}{2}, \frac{1}{2}, 0) +$				General:
8	<i>f</i> 1	(1) $x, y, z$	(2) $\bar{x}, \bar{y}, z$	(3) $x, \bar{y}, z$	(4) $\bar{x}, y, z$	$hkl: h + k = 2n$ $0kl: k = 2n$ $h0l: h = 2n$ $hk0: h + k = 2n$ $h00: h = 2n$ $0k0: k = 2n$
4	<i>e</i> <i>m</i> . .	$0, y, z$	$0, \bar{y}, z$			Special: as above, plus no extra conditions
4	<i>d</i> . <i>m</i> .	$x, 0, z$	$\bar{x}, 0, z$			no extra conditions
4	<i>c</i> . . 2	$\frac{1}{4}, \frac{1}{4}, z$	$\frac{1}{4}, \frac{3}{4}, z$			$hkl: h = 2n$
2	<i>b</i> <i>m m</i> 2	$0, \frac{1}{2}, z$				no extra conditions
2	<i>a</i> <i>m m</i> 2	$0, 0, z$				no extra conditions

**Symmetry of special projections**

Along [001]  $c2mm$   
 $\mathbf{a}' = \mathbf{a}$      $\mathbf{b}' = \mathbf{b}$   
 Origin at  $0, 0, z$

Along [100]  $p1m1$   
 $\mathbf{a}' = \frac{1}{2}\mathbf{b}$      $\mathbf{b}' = \mathbf{c}$   
 Origin at  $x, 0, 0$

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