

$Cmc2_1$

C_{2v}^{12}

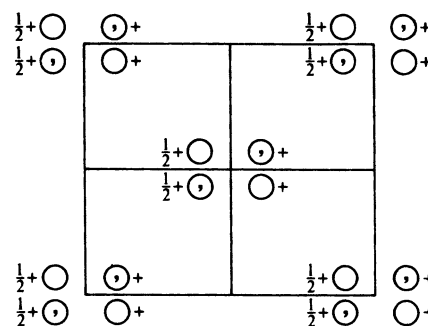
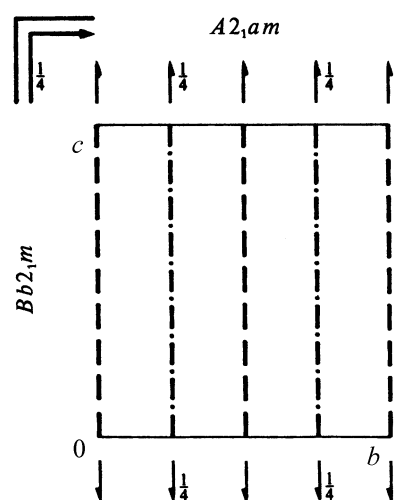
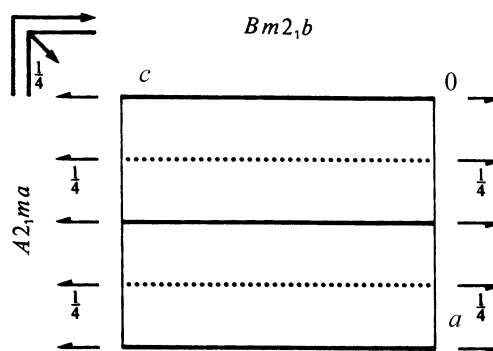
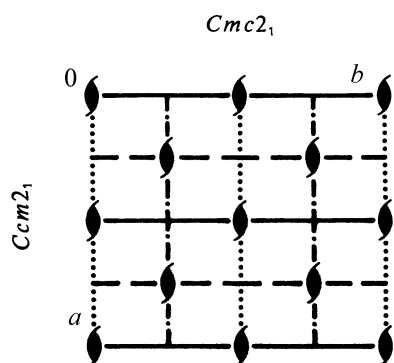
$mm2$

Orthorhombic

No. 36

$Cmc2_1$

Patterson symmetry $Cmmm$



Origin on $mc2_1$

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

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

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

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

Reflection conditions

8 b 1 (1) x, y, z (2) $\bar{x}, \bar{y}, z + \frac{1}{2}$ (3) $x, \bar{y}, z + \frac{1}{2}$ (4) \bar{x}, y, z

General:

$$hkl: h + k = 2n$$

$$0kl: k = 2n$$

$$h0l: h, l = 2n$$

$$hk0: h + k = 2n$$

$$h00: h = 2n$$

$$0k0: k = 2n$$

$$00l: l = 2n$$

Special: no extra conditions

4 a $m..$ $0, y, z$ $0, \bar{y}, z + \frac{1}{2}$

Symmetry of special projections

Along $[001]$ $c2mm$

$$\mathbf{a}' = \mathbf{a} \quad \mathbf{b}' = \mathbf{b}$$

Origin at $0, 0, z$

Along $[100]$ $p1g1$

$$\mathbf{a}' = \frac{1}{2}\mathbf{b} \quad \mathbf{b}' = \mathbf{c}$$

Origin at $x, 0, 0$

Along $[010]$ $p11m$

$$\mathbf{a}' = \frac{1}{2}\mathbf{c} \quad \mathbf{b}' = \frac{1}{2}\mathbf{a}$$

Origin at $0, y, 0$