

$P3_2 12$

D_3^5

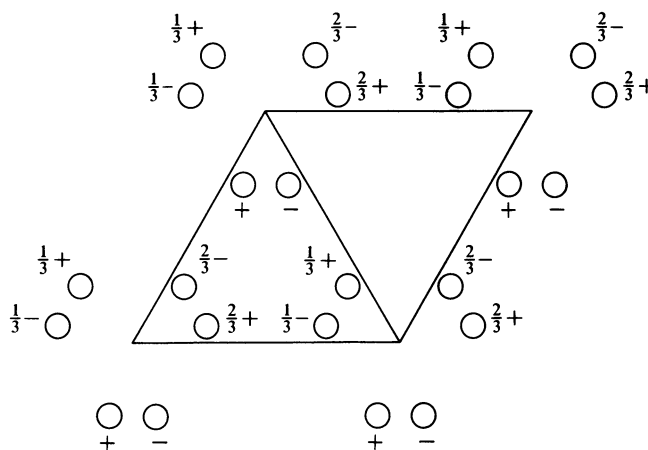
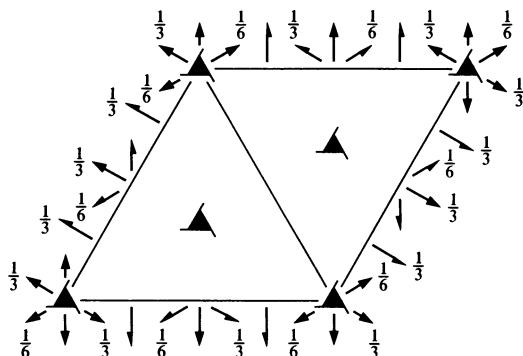
312

Trigonal

No. 153

$P3_2 12$

Patterson symmetry $P\bar{3}1m$



Origin on $2[210]$ at $3_2 1(1, 1, 2)$

Asymmetric unit $0 \leq x \leq 1; 0 \leq y \leq 1; 0 \leq z \leq \frac{1}{6}$
 Vertices $0, 0, 0$ $1, 0, 0$ $1, 1, 0$ $0, 1, 0$
 $0, 0, \frac{1}{6}$ $1, 0, \frac{1}{6}$ $1, 1, \frac{1}{6}$ $0, 1, \frac{1}{6}$

Symmetry operations

- (1) 1
- (2) $3^+(0, 0, \frac{2}{3})$ $0, 0, z$
- (3) $3^-(0, 0, \frac{1}{3})$ $0, 0, z$
- (4) 2 $x, \bar{x}, \frac{1}{6}$
- (5) 2 $x, 2x, \frac{1}{3}$
- (6) 2 $2x, x, 0$

Generators selected (1); $t(1, 0, 0)$; $t(0, 1, 0)$; $t(0, 0, 1)$; (2); (4)

Positions

Multiplicity, Wyckoff letter, Site symmetry	Coordinates	Reflection conditions
6 <i>c</i> 1	(1) x, y, z (2) $\bar{y}, x - y, z + \frac{2}{3}$ (3) $\bar{x} + y, \bar{x}, z + \frac{1}{3}$ (4) $\bar{y}, \bar{x}, \bar{z} + \frac{1}{3}$ (5) $\bar{x} + y, y, \bar{z} + \frac{2}{3}$ (6) $x, x - y, \bar{z}$	General: $000l: l = 3n$ Special: no extra conditions
3 <i>b</i> .. 2	$x, \bar{x}, \frac{1}{6}$ $x, 2x, \frac{5}{6}$ $2\bar{x}, \bar{x}, \frac{1}{2}$	
3 <i>a</i> .. 2	$x, \bar{x}, \frac{2}{3}$ $x, 2x, \frac{1}{3}$ $2\bar{x}, \bar{x}, 0$	

Symmetry of special projections

Along $[001]$ $p3m1$
 $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$
 Origin at $0, 0, z$

Along $[100]$ $p11m$
 $\mathbf{a}' = \frac{1}{2}(\mathbf{a} + 2\mathbf{b})$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, 0, \frac{1}{3}$

Along $[210]$ $p2$
 $\mathbf{a}' = \frac{1}{2}\mathbf{b}$ $\mathbf{b}' = \mathbf{c}$
 Origin at $x, \frac{1}{2}x, 0$