

$P6_5$

C_6^3

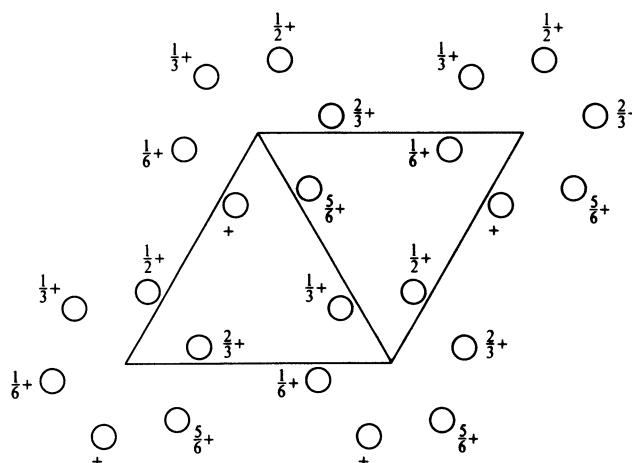
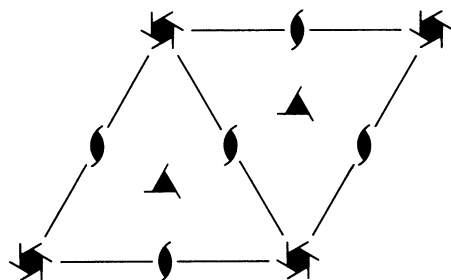
6

Hexagonal

No. 170

$P6_5$

Patterson symmetry $P6/m$



Origin on 6_5

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

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>a</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) $\bar{x},\bar{y},z+\frac{1}{2}$ (5) $y,\bar{x}+y,z+\frac{1}{6}$ (6) $x-y,x,z+\frac{5}{6}$	General: $000l: l = 6n$

Symmetry of special projections

Along $[001]$ $p6$ $\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$ Origin at $0,0,z$	Along $[100]$ $p1g1$ $\mathbf{a}' = \frac{1}{2}(\mathbf{a} + 2\mathbf{b})$ $\mathbf{b}' = \mathbf{c}$ Origin at $x,0,0$	Along $[210]$ $p1g1$ $\mathbf{a}' = \frac{1}{2}\mathbf{b}$ $\mathbf{b}' = \mathbf{c}$ Origin at $x,\frac{1}{2}x,0$
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