

$p31m$

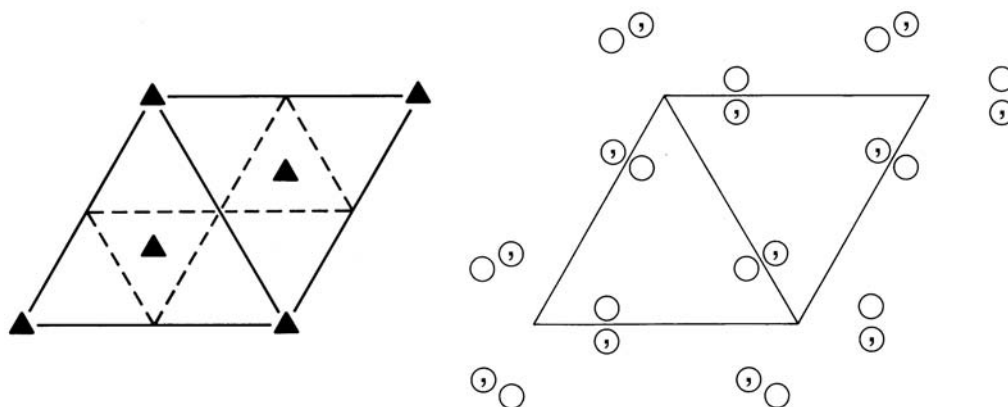
$3m$

Hexagonal

No. 15

$p31m$

Patterson symmetry  $p6mm$



Origin at  $31m$

Asymmetric unit  $0 \leq x \leq \frac{2}{3}; 0 \leq y \leq \frac{1}{2}; x \leq (1+y)/2; y \leq \min(1-x, x)$   
 Vertices  $0,0 \quad \frac{1}{2},0 \quad \frac{2}{3},\frac{1}{3} \quad \frac{1}{2},\frac{1}{2}$

**Symmetry operations**

- (1) 1
- (2)  $3^+ 0,0$
- (3)  $3^- 0,0$
- (4)  $m \ x,x$
- (5)  $m \ x,0$
- (6)  $m \ 0,y$

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

**Positions**

Multiplicity,  
Wyckoff letter,  
Site symmetry

Coordinates

Reflection conditions

6 *d* 1 (1)  $x,y$  (2)  $\bar{y},x-y$  (3)  $\bar{x}+y,\bar{x}$   
 (4)  $y,x$  (5)  $x-y,\bar{y}$  (6)  $\bar{x},\bar{x}+y$

General:

no conditions

Special: no extra conditions

3 *c*  $\dots m$   $x,0$   $0,x$   $\bar{x},\bar{x}$

2 *b*  $3 \dots$   $\frac{1}{3},\frac{2}{3}$   $\frac{2}{3},\frac{1}{3}$

1 *a*  $3 \dots m$   $0,0$